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Theses and Dissertations Presented to the Departamento de Informática of PUC-Rio from 1969 to 2000

Compiled, Organized and Edited
by
Rosane Teles Lins Castilho
Ana Helena Garcia

Departamento de Informática

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PUC-RioInf.MCC27/01, September 2001

Abstract: Catalogue encompassing more than 30 years of the dissertations and theses from the PUC-Rio Information Technology Department, the first post-graduate Computer Science program in Latin America. It evidences the continued stability of the program in the state-of-the-art of the discipline, is invested of relevant historical value being a significant example of the evolution of scientific and technological research into the field of Computing in Brazil and is also a record of the many researchers that have populated and continue to do so the academic Computing community in Brazil.

Keywords : theses and dissertations, Computer Science in Brazil, PUC-Rio Departamento de Informatica.

Resumo: Catálogo registrando mais de 30 anos de teses e dissertações do Departamento de Informática da PUC-Rio, o mais antigo programa de pós-graduação da área na América Latina. Retrata a continua permanência do programa no estado-da-arte da disciplina e tem também relevante valor histórico por ser uma amostra significativa da evolução da pesquisa científica e tecnológica na área de computação no Brasil e por registrar os pesquisadores que povoaram e povoam a comunidade acadêmica de Computação no Brasil.

Palavras-chave: teses e dissertações, Ciência da Computação no Brasil, PUC-Rio Departamento de Informática.

FOREWORD

This work, which is a valuable initiative of our Computer Science Library's team, is invested of scientific, technological and historical importance. It encompasses more than 30 years of the dissertations and theses from the PUC-Rio Information Technology Department, the first post-graduate Computer Science program in Latin America. The period of coverage of the dissertations and theses coincides with the consolidation of Computer Science as a new discipline on its own. Thus, by following the themes and the depth of their handling, from the early origins of the graduate program, it is possible to review the advances that have taken place in the field over the years. It evidences the continued stability of our program in the state-of-the-art of the discipline. This document is also invested of relevant historical value being a significant example of the evolution of scientific and technological research into the field of Computing in Brazil. Finally, more than a manner of evaluating the relevance of the entirety of this work within the context of the history of Brazilian science and technology, it is also a record of the many researchers that have populated and continue to do so the academic Computing community in Brazil. Within this field they exercise their scientific and technological leadership in many universities and other institutions of higher education in our country.

Carlos J. P. de Lucena *
The First Coordinator of the Information Technology Graduate Program

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1969

Antonio Luz FURTADO. "Cálculo automático de distâncias em ferrovias". M.Sc. Diss. Presentation: 01/69 71 p. Advisor: Antonio Cesar Olinto de Oliveira

Abstract: Most applications of computers to railway problems use the distances between stations data. In some cases the distance must be broken down for statistical purposes and for the same reason the upward or downward traffic must be discriminated. The present work suggests a method for obtaining such information directly in core storage, without requiring therefore a time consuming access to disk or tape files. Two applications are in operation: a. in the Viação Férrea Centro Oeste - by Drs. Geraldo Siqueira, Paulo Mazoni and the author; b. in the Estrada de Ferro Central do Brasil by an IBM team.

Arndt von STAA. "Um modelo de aprendizado para jogos em computadores". M.Sc. Diss. Presentation: 09/69 46 p. Advisor: Antonio Cesar Olinto de Oliveira

Abstract: Some models of artificial intelligence will be presented in this text. All the models concern games. Simple games have been chosen to reduce coding and rule analysis. The games analyzed will be two and three-dimensional tic-tac-toe. Different models of learning will be given and their behavior will be analyzed. Also the programs will enable the computer to play against one person, or against itself. All models concerning these two games are the result of my own work, independent of any texts. Perhaps some or all components of the procedures presented have been developed before.

Raphael Chrisóstomo Barbosa da SILVA. "Sistema integrado de administração acadêmica". M.Sc. Diss. Presentation: 01/69 95 p. Advisor: Antonio Cesar Olinto de Oliveira

Abstract: In the Universities that adopt the credit system, as a rule for the evaluation of academic performance, the processing and follow-up of the student's academic life becomes a complex task. The integrated System for Academic Administration enables the Admissions and Registrar office to process mechanically the jobs that have a large volume of data, and creates the possibility of obtaining statistics and analysis report on the student's academic life. The system is composed of subsystems, that work upon two files, the student file and the subject file, and executes the processing functions of the Registrar office from registration to the end of the course. This system was implemented at the Pontifical Catholic University of Rio de Janeiro, in 1968, by the author.

Roberto Lins de CARVALHO. "Simplificações em gramáticas 'context-free' redução a forma normal de Chomsky: reconhecimento e análise de palavras". M.Sc. Diss. Presentation: 11/69 64 [+42] p. Advisor: Carlos José Pereira de Lucena

Abstract: The purpose of this work is to demonstrate results about simplifications of context-free languages, reduction to Chomsky's normal form and construction of a general algorithm for expression recognition and analysis. All theorems are demonstrated constructively and are followed by the corresponding algorithms. Originality lies solely in the presentation that makes evident the application of theorems whose practical aspects are frequently not considered.

Sergio Eduardo Rodrigues de CARVALHO. "Implementação do sistema COMASS". M.Sc. Diss. Presentation: 09/69 39 [+138] p. Advisor: Arndt von Staa

Abstract: COMASS (COMpiler ASSembler) is the name given to a programming system capable of generating other systems, such as operating systems and compilers. The works described here is referred to the COMASS implementations as a high level language compiler. It contains descriptions of the programs which constitutes the basic structure of the system (the translator, the recognizer and the generator) as well as descriptions of the languages involved (the COMASS meta-language, the source language and the intermediate code).

Simão Sirineo TOSCANI. “Recursividade em FORTRAN”. M.Sc. Diss. Presentation: 11/69 48 p. Advisor: Raphael Chrisóstomo Barbosa da Silva

Abstract: This work was developed with the purpose of allowing the use of recursive subprograms in the FORTRAN language. Changes were made on the FORTRAN IV Compiler of the IBM 7044 Computer and an auxiliary subroutine was inserted into the operating system subroutine library, to accomplish the necessary stack manipulation.

1970

Akeo TANABE. “Caminhamento em grafos simétricos”. M.Sc. Diss. Presentation: 12/70 44 [+20] p. Advisor: Antonio Luz Furtado

Abstract: Given the incidence matrix and two edges of a symmetric graph the algorithm presented in this work finds all paths joining them. An information structure is one of the possible outcomes of the algorithm. Once it has been generated, it can be used in any application involving traversing a network, thus allowing a fast processing that avoids the use of auxiliary storage.

Cesar Simões SALIM. “Métodos numéricos para solução de sistemas lineares e estudo de autovalores e autovetores”. M.Sc. Diss. Presentation: 06/70 100 [+139] p. Advisor: José Roberto Ribeiro dos Santos

Abstract: This work consists of a study of linear systems involving matrix inversion and evaluation or determinants and the obtention of the eigenvalues and eigenvectors from any real or complex matrix. Each given method has its description and mathematical discussion in the text and also a subroutine and sample program in the appendix, both written in FORTRAN language. It is given special emphasis to elementary and similar transformations in the mathematical approach and both exact and iterative methods are presented. In the chapter about the solution of linear systems it is studied the classical methods of Gauss, Gauss-Jordan and its optimization, special procedures as Cholesky’s, conjugate directions and conjugate gradients (for symmetric and general matrices) and iterative processes as Jacobi’s, Gauss-Seidel and Relaxation. In the second section, the eigenvalues and eigenvectors of real symmetric matrices are obtained by the methods of Jacobi and Givens-Housenholder, while those of general complex matrices are calculated by the method of Francis. It may be used either for a first course in numerical analysis or a second one in numerical calculus. Some knowledge of linear analysis and FORTRAN programming is required for its total understanding.

Donaldo de Souza DIAS. “Análise e projeto de sistemas de processamento de informações”. M.Sc. Diss. Presentation: 11/70 106 p. Advisor: Carlos José Pereira de Lucena

Abstract: The present work suggests an outline for a course in Computer Information Systems: Analysis and Design. The basic Systems Analysis topics are presented along with some usual business Data-Processing applications. With this approach the subject becomes more attractive to the student. The course may be given as an elective in a Post-Graduate Program in Computer or Management Science or as a compulsory course in a Systems Analysis Program.

Frederico Guilherme de CARVALHO. “NAP - Um montador de linguagem Assembler para o computador IBM 1130”. M.Sc. Diss. Presentation: 12/70 42 [+ 99] p. Advisor: Mário Aloysio Telles Ribeiro

Abstract: The new Assembler Program (NAP) for the IBM 1130 Computing System was developed as a fulfillment of the requirements to the Master degree in Computer Sciences (PUC-1970). The main objective we had, during NAP’s development, was to provide the IBM 1130 with a language that could: have better efficiency, giving shorter assembling time; present new features, to minimize programming effort; be easily expanded with other features; be used as an intermediate language to new compilers for the IBM 1130. So, the Assembler Program described in the following text has these main features: assembling time is 15% faster that that of the Assembler Program of IBM 1130; the assembled language may contain literal and some pre-defined macros; program modularity permits to introduce new phases to assemble new instructions; the availability of the source deck to make it easy to link NAP with new compilers for the IBM 1130.

Heitor Luiz Murat de Meirelles QUINTELLA. “Um enfoque computacional de teoria dos números e resolução das equações diofantinas lineares”. M.Sc. Diss. Presentation: 20/12/70 94 p. Advisor: Roberto Lins de Carvalho

Abstract: In this work the necessary foundations of number theory are presented for the solution of linear diophantine equations by means of a computational approach. Moreover, techniques are described for the solution of the linear diophantine equations, the linear diophantine inequalities and systems of simultaneous linear diophantine equations. From a didactic point of view the development of algorithms of number theory is an excellent opportunity to reformulate the constant of the introduction to Computer Science course. This has the advantage of focusing the difficulty of this course in the techniques of programming rather than in methods and applications. The interdisciplinary nature of this work provides a bridge for several disciplines, for the mathematician the algorithms provide an efficient tool for equations manipulation, thereby making his work easier and stimulating research in this field. In a practical way this work gives an alternative to the solution of linear integer programming problems. Perhaps the methods herein presented are more efficient than those traditionally used. Even if the diophantine methods were less efficient they could still be useful in teaching linear integer programming without the need for linear algebra, and the number theory as a whole could help for a formal approach to simulation.

Helene Kleinberger SALIM. "Métodos numéricos aplicados à interpolação e aproximação de funções e raizes de sistemas não lineares". M.Sc. Diss. Presentation: 06/70 151 [+100] p. Advisor: José Roberto Ribeiro dos Santos

Abstract: This work is about specific topics of Numerical Analysis, applied to scientific computation. The articles presented are, generally, the following: a) The study of the determination of roots of real general functions. In this chapter we see at first the separation of real or complex roots of a general function, particularizing for algebraic polynomials. In order to determine the roots we show iterative methods such as linear iteration and procedures of higher order of convergence, the Aitken's sequence and Newton Raphson's method for simple or multiple, real or complex roots. In the part dedicated to the polynomials, we see a procedure to obtain simultaneously approximations to all its real zeros, the particularization of Newton - Raphson's method for the refinement of the approximations for the roots and a process of factorization of the polynomial in order to find pairs of complex roots. b) The resolution of systems of nonlinear equations. We see the methods iteration, Seidel's and Newton's. c) The problem of polynomial interpolation. We develop formulae to obtain the interpolating polynomial through a finite set of points and osculating polynomials. d) Numerical differentiation. At this point we derive the polynomial approximations to the function and we see the method of extrapolation to the limit. e) Numerical integration. In this section we study the Newton Cotes formulae, obtained from the interpolating polynomials and the process of extrapolation to the limit applied to integration. We also have the problem of double integrals. f) Approximation to functions. This chapter presents an introduction linear analysis which is necessary to the study of Fourier's, Legendre's, Hermite's and Languerre's series, the method of least squares applied to functions given analytically or by points, and the study of Gauss' quadrature. We searched for simple and programmable methods, and we present their mathematical justification. We studied the error and order of convergence of the several methods presented. Some algorithms are followed by tested subroutines, in appendices, written in FORTRAN, and processed at the installation of the National Spatial Activities Commission (B- 3 500). The objective of this thesis is to serve as a textbook for a first, one semester course in Numerical Analysis, requiring knowledge of programming and linear algebra.

Luiz de Castro MARTINS. "Programa de manutenção preventiva de um equipamento". M.Sc. Diss. Presentation: 01/70 37 [+42] p. Advisor: Antonio Cesar Olinto de Oliveira

Abstract: The problem of preventative maintenance planning for a system becomes more difficult as the number of system components increases. This study presents a computational solution to the problem of minimizing the weekly work load fluctuations of a maintenance department over a one year period. Three algorithms are developed which provide adequate solutions to different formulations of the planning problem. These algorithms are: simulation by randomic solutions; load sorting; partial solutions. The results obtained by means of the algorithm were excellent. In the ten cases studied, the weekly load profiles over a one year period exhibited small fluctuations. Also, a theoretical formulation of the problem is presented by means of Fourier Series expansions.

Marcelo Pardo BROWN. "Estudo comparativo de tabelas de símbolos". M.Sc. Diss. Presentation: 12/70 81 p. Advisor: Arndt von Staa

Abstract: This work presents a comparison among several techniques for searching through symbol tables. Processing time and storage space are independent variables. The techniques compared are: binary search and hash code of the type linear, quadratic and with overflow tables. Algorithms for these techniques are presented, including a few extensions of these. The processing time variables are measured for construction and search, each of these actions listed separately. Also presented is a chapter discussing the code generation' processes (hash code), showing a comparison among some of them.

Sueli Mendes dos SANTOS. "Gramática Transformacional - discussão sobre um modelo para as linguagens naturais". M.Sc. Diss. Presentation: 11/70 64 p. Advisor: Roberto Lins de Carvalho

Abstract: The aim of this paper is to present Transformational Grammars as possible models for natural languages. To this end, there is an attempt at showing that such Transformational Grammars can satisfy some of the required conditions of the said models. The criterion of recursiveness is particularly discussed. To make the discussion possible a mathematical model for the Transformational Grammars is minutely presented, this models was elaborated by Barbara Partee and Seymour Ginsburg.

1971

Alfredo Carlos VIEIRA. "Uma introdução à construção automática de 'Reconhecedores' sintáticos para certas classes de linguagens". M.Sc. Diss. Presentation: 08/71 58 [+ 43] p. Advisor: Roberto Lins de Carvalho

Abstract: The objective of this work is the automatic construction of parsing algorithms for certain classes of grammars, known as context-sensitive, context-free and regular. These algorithms seem to be very efficient in relation of primitive steps executed as well as the number of storage locations used. Some more recent results like the parsing algorithm for c. f. g. developed by J. EARLEY were not present because the articles were not available when this work was finished.

Clávio COUTINHO FILHO. "Análise do desempenho de sistemas de computação - metodologia". M.Sc. Diss. Presentation: 10/71 123 p. Advisor: Luiz de Castro Martins

Abstract: This work has the purpose of doing an exposition about the researches that are being made in the filed of computer systems performance evaluation. To allow a better understanding through the work a chapter about operating systems, multi-programming, multiprocessing and time-sharing systems were included, where are clarified some concept for the paper. Specified, this an analysis of general purposes of the evaluation methods and of the systems components that require an examination, is included an explanation about some simulation languages like SIMSCRIPT, ECSS, CSS and SCERT are used for systems evaluation, techniques employed in design, selection and analysis of benchmarks and the analysis of processes used in monitoring hardware and software elements of computers actually available.

Darci de CRIGNIS. "Simulação e avaliação de uma frota pesqueira". M.Sc. Diss. Presentation: 12/71 87 [+50] p. Advisor: Luiz de Castro Martins

Abstract: The purpose of this work is to simulate a fishing fleet with a program written in the GPSS III (General Purpose System Simulation) language. The program is compatible with the IBM 7044 system with 32 k works. It simulates the vehicle flow considering the main operational phases developed at the port, sea, pier and shipyards. The input data are provided by definition cards, which are standardized by the GPSS III. The output listings provide the elapsed time of each operational phase, percentage of equipment usage, costs, losses and quantity fished besides other information. Among the objectives we can mention the dimensioning of the pier, fleet, shipyards and scheduling of the pier.

Emmanuel Piseces Lopes PASSOS. "Introdução à demonstarção automática de teoremas". M.Sc. Diss. Presentation: 07/71 110 p. Advisor: Antonio Luz Furtado

Abstract: The aim of this paper is to provide an introduction to theorem proving in Formal Theories. It is based on a work by Newell, Shaw and Simon, "The Logic Theory Machine", where the authors present a program in IPL for proving The Theorems of Propositional Calculus of Principia Mathematica. This paper presents a program for proving the above theorems using a new programming module "PUCMAT" compiled in FORTRAN IV of IBM/7044.

Fernando Luiz Faria LIMA. "Sistema de controle acadêmico". M.Sc. Diss. Presentation: 10/71 108 [+81] p. Advisor: Antonio Luz Furtado

Abstract: The purpose of this work is to provide a part of the necessary toll to the "education council" and to the adviser professor aiming the improvement of the reaching in the university. We can divide our system in three parts: 1. Student's master file - in this part, we create a file containing information about the student; 2 . Correction - in this second part we present a report, containing the correction of multiple-choice or conventional test; 3. Evaluation and control - in this last part we present statistical values, which able us to determine a guidance for full-filling the objectives.

Ivan Moura CAMPOS. "PRTC - Um sistema integrado de programas para análise de dados". M.Sc. Diss. Presentation: 06/71 106 p. Advisor: Carlos José Pereira de Lucena

Abstract: The aim of this work is to present an integrated set of programs for the IBM-1130 computer, which gives a basic support for the analysis of survey-collected data. The System furnishes contingency tables with up to six simultaneous variables, frequency distributions of either the original code values or data grouped in user defined classes, association measures, correlation co-efficient, and, in order to allow the construction of derived measures, permits a user-written routine. The set-up of the whole System is done by means of its own control cards, producing fully labeled print-out and user-oriented diagnostic messages.

João Lauro Dorneles FACÓ. "Otimização do programa de manutenção preventiva de um sistema". M.Sc. Diss. Presentation: 09/71 [irr.] p. Advisor: Antonio Cesar Olinto de Oliveira

Abstract: This study presents the optimal solution to the preventive maintenance scheduling of a system trying to minimize the fluctuations around the mean value of the total quality of resources along a fixed planning horizon. We find a mathematical model for this practical problem in which we try to minimize the variance of a finite set of periodical square waves. This way we made it possible to apply Nonlinear programming techniques and could even construct an algorithm based on the Kuhn-Tucker theorem.

José Carlos BARBOSA. "Gráficos estatísticos". M.Sc. Diss. Presentation: 12/71 90 p. Advisor: Antonio Luz Furtado

Abstract: The purpose of the present work is to give the researcher an instrument for the visual presentation of statistical material. Drawing statistical graphs is a burdensome work, requiring personnel of some qualification. Automating such work allows the prompt obtention of the graphs and guarantees their accuracy. Our efforts have taken the form of a system of sub-programs, written in basic FORTRAN, for an IBM-1130 with the usual configuration of 8 k. The choice of language and equipment reflects the convenience of the university environment in Brazil, and also the needs of specially important research agencies such as the IBRE-FGV.

Lucas Tofolo de MACEDO. "Manipulação de gramáticas livres do contexto e reconhecimento de LL (K)". M.Sc. Diss. Presentation: 09/71 99 [+88] p. Advisor: Roberto Lins de Carvalho

Abstract: The purpose of this work is to bring together, on an organized fashion, the best known results in the areas of Formal Languages and Automata which are important toward an understanding of syntax directed compilers today and for future research in this field. This work is composed of four chapters in which the following topics are presented: chapter 1 - initial definitions - (Grammars, Languages, Derivation Trees, Finite Automata, Push-down Automata, etc.); chapter 2 - Regular Languages and Finite Automata; chapter 3 - Context-Free Languages and Push-down Automata; chapter 4 - LL(k) Languages, The Test for the LL(k) Condition and the Construction of a Recognizer for LL(k) Languages.

Luiz Ferrara de Almeida CUNHA. "Um método de representação de estruturas de informação: estrutura modular". M.Sc. Diss. Presentation: 04/71 44 [+ 50] p. Advisor: Carlos José Pereira de Lucena

Abstract: The aim of this work is to suggest a method for representing any arbitrary information structure, through a programming system which automatically provides for storage allocation of the abstract structure's component. This automation, which guarantees adequate storage allocation to information, allows for the mapping of concrete or abstract models into storage with minimum programming effort. The proposed system includes a set of elementary routines and a set of primitive functions. The elementary routines which perform bit manipulation and updating of available space areas, are defined implicitly by the system implementation. These routines are internal to the system, and are used only within the primitive functions. The primitive functions are elementary operations which can be combined into more powerful ones, which in turn may be written to describe a specific model.

Maria Alice SETTE. "Aritmética de precisão ilimitada sobre o corpo dos racionais". M.Sc. Diss. Presentation: 12/71 135 p. Advisor: João Bosco Pitombeira de Carvalho

Abstract: This work presents a set of subprograms which allow the arithmetic operations over the rational numbers which range can be taught as unlimited under certain considerations. The rational numbers can be represented as integers or as ordinary fractions; a list structure is used to represent them in the computer memory. The set of subprograms is written in FORTRAN IV language, based upon a small number of primitive, machine oriented subroutines. Those were written for the IBM 7044 where the system has been implemented. The system can be adapted, with small modifications, to any other machine with enough storage capacity to keep the set of subprogram plus work area to develop the lists. In the IBM 7044, the system occupies close to 8k. The text presents some examples to clarify the utilization of the system, storage requirements and evaluation of execution time for many operations. Further experience with the system will be necessary to better evaluate its efficiency and to suggest future improvement and system expansion.

Marília Rosa MILLAN. "Expressões regulares - síntese e minimização dos automatos finitos". M.Sc. Diss. Presentation: 04/71 75 [+63] p. Advisor: Roberto Lins de Carvalho

Abstract: One of the best known results of Automata Theory is that the finite state automata are the recognizing device for the regular language. Such languages are sometimes represented by regular expressions. However, the process used to obtain the automaton, from the regular expression is not presented in the literature as a algorithm. The aim of this work is precisely to present the usual way of obtaining the minimum automaton in a thoroughly algorithmic form.

Nelson do Valle SILVA. "Um sistema interpretador de comandos estatísticos". M.Sc. Diss. Presentation: 03/71 130 p. Advisor: Carlos José Pereira de Lucena

Abstract: The present work proposes an interpretative system of statistical commands as an approach to the problem of data analysis for the behavioral and social sciences. The main characteristics of this system are ease of utilization and its modularity.

Paulo Silveira MARTINS. "Administração acadêmica centralizada - uma análise sobre aplicação de computadores". M.Sc. Diss. Presentation: 12/71 80 p. Advisor: Pe. Antonio Geraldo Amaral Rosas, SJ

Abstract: The objective of the thesis is the analysis of centralized academic administration with the aid of computers. The study is divided in five parts: definition and implications of centralized administration; analysis of a computational system; programming of a computational system; simulation of the entire control procedure; final conclusions.

Therezinha da Costa Ferreira CHAVES. "Preditores: experiência para obtenção de melhores fórmulas". M.Sc. Diss. Presentation: 12/71 51 p. Advisor: Peter Albrecht

Abstract: Not provided.

Vitoriano Ruas de Barros SANTOS. "Tratamento geral dos métodos de extrapolação para o limite". M.Sc. Diss. Presentation: 07/71 74 p. Advisor: Peter Albrecht

Abstract: The subject of this work is a general treatment of the approximations of the solution τ_0 of a numerical problem, obtained by extrapolation to the limit of initial approximations T (h) given by an algorithm depending on a positive parameter h, such that lim T(h)= τ_0 , h$\rightarrow$ 0. The error of T(h) was assumed to be expressed by a real power series in h. A matricial treatment was used in order to enable the generalization for any sequence {h } used in the calculation of the initial approximations {T(h)}, and for any real power series in h representing its error. The correspondence to the particular cases usually found in the literature was verified. By using an extension of Lagrangian interpolation to a linear combination of real powers of the free variable function, formulae for the estimation of the maximal

error of the extrapolation to the limit approximations were obtained. It was found that this estimate is approximately twice the actual error in the normal calculations cases.

1972

Adalberto Santos PFEFFER. "P/PL/I Uma extensão de PL/I em pattern matching". M.Sc. Diss. Presentation: 12/72 54 p. Advisor: Antonio Luz Furtado

Abstract: This work expands the facilities of PL/I language to allow string processing facilities with similar capabilities of the high level language SNOBOL, version 4. Three new statement were added to PL/I with the follow functions: declare the variables needed for string processing; build the pattern; execution of the matching. Internally to the pattern statement the user has two additional facilities: he can call the functions defined by himself or perform assignments. The statements that allow to make a pattern matching are transformed at pre-processor stage in valid PL/I statements and then normally compiled by the PL/I compiler.

Adilson Tadeu de MEDEIROS. "Uma extensão de PL/I para o processamento de listas". M.Sc. Diss. Presentation: 15/08/72 64 p. Advisor: Antonio Luz Furtado

Abstract: This work expands the facilities of PL/I language, to allow list processing facilities with similar capabilities of the high level language LISP 1.5 including an automatic garbage collection. Based on this language, new commands where added to PL/I with the following functions: declare list structures; assign to variable, any list structure; assign to a variable, the value of a conditional expression; input/output of list structures; assignment, retrieval and deletion of properties of atoms; iterative command (DO) for list structures; extraction of any element of a list. Besides, functions of LISP 1.5, such as, car, cdr, cons, eq, quote, list, value, atom and null and some others normally defined by the user as append, equal, subst etc, where added to PL/I. The list processing facilities presented in this work, being a high level language are easier to use than those implemented by PL/I itself. With respect to LISP 1.5 language, these facilities simply the input/output and the writing of the program. The statements that use these additional facilities are transformed at pre processor stage in valid PL/I statements and then normally compiled by the PL/I compiler.

Antonio Benedito Coimbra SAMPAIO. "Geração de um código ótimo para expressões aritméticas com variáveis subscritas". M.Sc. Diss. Presentation: 06/11/72 59 p. Advisor: Sergio Roberto Pinto Teixeira

Abstract: This thesis studies the problem of generating minimal cost (time) code for arithmetic expression with subscript variables. It is not initially considered any algebraic law applied to the operators and operands, and an algorithm is introduced. Two algorithms are presented when we consider that certain operators are commutative or both commutative and associative. The three algorithms proposed generate optimal code under their suppositions for arithmetic expressions with subscript variables, and for a model of computer with $N(N \geq 1)$ general registers that may be both accumulators and index registers (like the IBM/360). Besides these algorithms are of complexity of time proportional to the number of arithmetic expressions elements.

Carlos Rafael AGUILAR QUEVEDO. "Sistema cooperacional da UFMG: montador e macro-montador". M.Sc. Diss. Presentation: 12/72 122 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work describes the MASC, a Macro Assembly System for a Cooperating System developed by the MINAS GERAIS FEDERAL UNIVERSITY. The MASC is a powerful version of the Extended Assembly for the 2100-A Hewlett-Packard computer, which accepts arithmetic statements, subscripted variables, and has macro facilities and with the difference that it is executed in a Data Processing Machine and their object program runs in the 2100-A HP computer, maintaining in this way the concept of a Cooperating System.

Clésio Saraiva dos SANTOS. "Uma extensão da linguagem PL/I para processamento de grafos". M.Sc. Diss. Presentation: 03/08/72 84 p. Advisor: Antonio Luz Furtado

Abstract: This dissertation, a PL/I extension for graph processing is presented. This extension allows for the representation and manipulation of direct and indirect graphs and multigraphs. An arbitrary number of attribute-value pairs can be associated with the graph itself and with its nodes and edges. The representation of graphs is made by means of an heterogeneous linked structure; it easily enables the operations of creation, deletion and referencing on graphs and their elements. Provision is made for the use of special kinds sets, related to graphs, with correspondent and pertaining operations. Initialization, input/output of graphs and control statements were included along with some auxiliary procedures. This extension provides the user with a natural and concise notation, suited to the description of graph algorithms.

Daltro José NUNES. "Gerador de macro dirigido por sintaxe". M.Sc. Diss. Presentation: 21/08/72 47 p. Advisor: Sergio Roberto Pinto Teixeira

Abstract: This paper describes a language to aiming at the definition and expansion of syntactic macros. The basic structure of the language was defined by B. M. Leavenworth and was published in "Communication of the ACM", November, 1962. The initial section of the dissertation is a comparative study of several macro generators. For future implementation, the language was formally presented and data structures were defined to store the macros, their expansions and metavariables.

Henrique Pacca Loureiro LUNA. "Jogo de ações". M.Sc. Diss. Presentation: 17/11/72 74 p. Advisor: Klaus Galda

Abstract: Initially there is a discussion of the problems that are involved in modeling portfolio selection. Then we present an algorithm and program for finding optimal solutions in Pye's model. This model is used for short-term planning because of its sensitivity to current prices. After that we examine some models that attempt to optimize portfolios for longer periods of time. One of them attempts to use all the available information, and the other is the well-known Markowitz model. An analysis of the practical application of these models concludes the paper.

João Afonso Ayrosa BELLOC. "Simulação estocástica de modelos macro-econométricos". M.Sc. Diss. Presentation: 18/07/72 58 p. Advisor: Jorge Viana Monteiro

Abstract: English abstract not provided.

João Carlos Pires BAUER. "Ampliação da estrutura de controle e extensão modular de PL/I". M.Sc. Diss. Presentation: 15/12/72 p. Advisor: Antonio Luz Furtado

Note: Not available.

Kotaro TANAKA. "Simulação de um sistema time-sharing". M.Sc. Diss. Presentation: 03/72 80 p. Advisor: Lucio Valerio Morsch Goelzer

Abstract: English abstract not provided.

Leslie Afrânio TERRY. "Alguns algoritmos sobre a solução de problemas não-lineares esparsos". M.Sc. Diss. Presentation: 12/12/72 72 p. Advisor: Peter Albrecht

Note: Not available.

Luís Fernando Ramos CENTENO. "Um sistema de recuperação de informações para computadores de pequeno porte". M.Sc. Diss. Presentation: 03/72 55 + [65] p. Advisor: Carlos José Pereira de Lucena

Abstract: This work was developed with the purpose of offering to users of mini computers a data retrieval system. The system was written in FORTRAN IV language and allows for easy and fast

implementation. No significant previous experience in computers is necessary to run the system. The system was implemented for the IBM's 1130 computer.

Márcia Barros de AGUIAR. "Gerador de números aleatórios para o sistema IBM/1130". M.Sc. Diss. Presentation: 06/72 54 p. Advisor: Lucio Valerio Morsch Goelzer

Abstract: This paper analyzes the development of random number generators having a period above 8192, corresponding to the RANDU generator which is part of the IBM scientific - subroutine package. The generators were codified in IBM-1130 ASSEMBLER. Their execution times were evaluated and their behavior was statistically analyzed in a comparative manner.

Paulo Alberto AZEREDO. "Técnicas de otimização de código objeto e suas aplicações em um compilador para linguagem basic, usando um compilador de compiladores". M.Sc. Diss. Presentation: 03/72 106 p. Advisor: Antonio Luz Furtado

Abstract: The purpose of this work is to develop a compiler for the BASIC (Beginner's All-purpose Symbolic Instruction Code) language, under the IBM-7044 system. At the same time, some techniques of object code optimization are presented. The compiler, generated by the COMCOM (COMpiler-COMpiler) system, uses some of these techniques, in order to produce an efficient code.

Paulo Oscar de FARIA. "Programação quadrática, estudo comparativo dos algoritmos. uma aplicação e sua implementação". M.Sc. Diss. Presentation: 06/72 2 vols.. Advisor: Larry Kerschberg

Abstract: The objective of this thesis is the preparation of a computer program to solve optimization problems using concave quadratic functions, with linear constraints. The program was written in FORTRAN and can be used in any computer that accepts this compiler. The report has a resume of the historical evolution of the methods used in the solution of that problem. The input data are read from punched cards. The program may be stored in disk file or it may be read from punched cards. The printout report is divided in three sections: one for data, one for error messages, and the third one for the results. The quadratic programming can be applied in the direct solution of physical models or as a mathematical tool in the solution of more general problems.

Paulo Tolosa BIANCHI. "Uma rotina de reconhecimento de unidades sintáticas". M.Sc. Diss. Presentation: 01/08/72 144 p. Advisor: Mario Aloysio Telles Ribeiro

Abstract: SCAN - examination of a succession of characters from left to right, character by character - is necessary in one or more steps by compilers. Each compiler has its own particular manner to scan. Some compilers, after recognizing a command, re-scans part of it, to verify the syntax, while others use special procedures to avoid re-scanning. In either case, the efficiency of a compiler will depend in large part on the efficiency of its scanning routine. A routine which scans and recognizes syntax units is proposed in this paper. Its principal characteristics are written in Assembler, very fast (recognizes approximately an average of 2000 syntax units per second in a /360 model 65) and, occupies only about half of a control section.

Raimundo Haroldo do Carmo CATUNDA. "Contribuição ao estudo computacional sobre a associatividade parcial da simetrização de um semi-grupo". M.Sc. Diss. Presentation: 29/09/72 99 p. Advisor: João Bosco Pitombeira de Carvalho

Abstract: The purpose of this work is to bring a problem of abstract algebra into the area of information structures. Using FORTRAN IV for a IBM-7044 computer, were developed programs that generate monomios and study associative laws. When studying each case, we used binary trees structures and several recursive subroutines which handle such trees.

Raimundo Nonato de Miranda CHAVES. "Processo adaptativo no cálculo da solução de uma classe de jogos com informação incompleta". M.Sc. Diss. Presentation: 22/11/72 58 p. Advisor: Klaus Galda

Abstract: This paper deals with the problem of two-person, zero-sum games in the case that one of the player is using a strategy different from the usual von Neumann minimax strategy. The method is to use a learning algorithm which are based on one player's estimate of the other's strategy after various repetitions of the game. The algorithms attempt to let the first player take full advantage of the other's weaknesses. Suppose at the k-th repetition of the game the first and second player have apparent strategies of X[k] and Y[k] respectively. Then the strategy of the first player for the next repetition is determined by the different equation. X[k+1]=X[k]-.(formula)..[k+1]{X[k]-f (Y[k])}.F (Y[k]) represents the optimal pure response of the first player to the strategy Y[k] (formula) [k+1] is a parameter to be chosen to assign weights to different strategies. Various models of this situation are studied by varying the different parameters of the equation. Empirical tests of the results are made using a 3 x 3 payoff matrix which has no saddle point and a unique mixed minimax solution.

Renato Antonio RABUSKE. "Sistema LISP-FORTRAN para o computador IBM/1130". M.Sc. Diss. Presentation: 06/72 107 p. Advisor: Simão Sirineo Toscani

Abstract: The main purpose of this paper is to make the basic LISP-FORTRAN System routines available to the users of the IBM 1130 computer. As secondary purposes it is proposed: a) to show the basic structure, the recursivity and the use of the subroutines that compose the system. b) to provide software subsidies referring to reading and printing, as well as to show the readers that are somehow advanced in computation some more - sophisticated techniques that simplify the programming of complex or tiresome problems.

Sergio Ivan ROSCHKE. "Um algoritmo para determinar o número cromático e um colorido ótimo de um grafo finito não dirigido". M.Sc. Diss. Presentation: 17/08/72 47 p. Advisor: Antonio Luz Furtado

Abstract: The problem of finding the chromatic number of a graph and exhibiting one or all optimal colorings has a several practical applications. It is equivalent to partitioning a set of objects, some of which are pairwise "incompatible", into the minimum number of cells, so that no two incompatible objects are assigned to the same cell. Situations where this applies are production scheduling, construction of examination timetables, storage of goods, etc. Heuristic procedures for the described problem have been developed by Berge [1], Welsh and Powell [2], and Wood [3]. More recently Christofides [4] has presented a deterministic algorithm that is based on the concept of maximal internally stable sets. This thesis also employs this concept to develop an algorithm that determines the chromatic number and one optimal coloring. A partitioning technique is used allowing the processing of large graphs.

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Alfredo José Pereira de LUCENA. "Sistema para análise automática de programas FORTRAN". M.Sc. Diss. Presentation: 21/09/73 55 p. Advisor: Sergio Roberto Pinto Teixeira

Abstract: This work was developed with the purpose of creating a System that could be used as a tool in the determination of the critical points of the execution time of FORTRAN programs.

Alfredo Veiga de CARVALHO. "Um sistema conversacional de consulta para artigos de periódicos". M.Sc. Diss. Presentation: 21/12/73 94 p. Advisor: Flávio Pereira de Souza

Abstract: SCAP (Periodical Article on-line Retrieval System) is a system designed for retrieval via remote terminal of bibliographical references to articles in periodicals. On-line operations is handled by TSO (Time Sharing Option), which performs the interface with the Operating System. The retrieval of information is controlled through on-line dialogue between the user and the system using a SCAP conversational language which is easy to learn without prior knowledge of computational techniques. The creation and maintenance of the Data Base is carried out in batch mode, independent of the on-line retrieval operation; the system is designed to maintain large collections of periodicals.

Alonso Duarte de ALBUQUERQUE FILHO. "Um sistema de tradução semi-automática de linguagens naturais". M.Sc. Diss. Presentation: 20/02/73 58 p. Advisor: Luiz Edmundo Soares

Abstract: The purpose of the CATS system developed in this work is to aid humans in translating texts. A teleprocessing terminal establishes a conversational mode with the user, exhibiting synonymous options of some words, requesting translations of unknown words, and allowing the arrangement of the sentences. It consists of a set of routines which comprise several modules. This permit CATS to perform a translation in real time with an iteration between the user and the system.

Álvaro Alberto NASCIMENTO. "Uma implementação de um provador automático de teoremas baseado na teoria de resolução". M.Sc. Diss. Presentation: 20/06/73 101 [+50]p. Advisor: Sueli Mendes dos Santos

Abstract: The present work presents an interactive automatic theorem prover and some experimental results obtained with it. The theoretical bases used in the construction of this prover are briefly presented on the initial chapters. They are the Resolution Theory and a basic set of strategies.

Antonio Clecio Fontenelles THOMAZ. "Aplicação dos computadores a pesquisa da homologia da álgebra de Steenrod". M.Sc. Diss. Presentation: 20/03/73 82 p. Advisor: João Bosco Pitombeira de Carvalho

Abstract: Not provided.

Antonio Pedro Lima SANTOS. "Um núcleo para implementação de sistemas operacionais". M.Sc. Diss. Presentation: 01/03/73 168 p. Advisor: Simão Sirineo Toscani

Abstract: Initially we give description of overall systems, of which the subject of this thesis is a part. The overall system is made up of the on-line linking of a minicomputer with a large general purpose computer. The advantage and objectives of such a combined system are discussed. Then some problems of multiprogramming and their solutions are considered. The idea of "process" is defined and some functions for communicating between processes and for manipulation of processes are given. A hierarchical structure between processes is also defined. Some details of the implementation of the supervisor nucleus are then given, and the merits of our system and others such as BCS, RTE of Hewlett Packard are compared. Finally we consider some possibilities of diversifying and intensifying the applications of the minicomputer utilizing the supervisor-nucleus as described in this thesis.

Arnaldo Corrêa PRADO JUNIOR. "Simulação de um sistema de perguntas e respostas". M.Sc. Diss. Presentation: 21/02/73 2 vols. Advisor: Sueli Mendes dos Santos

Abstract: The aim of this paper is to construct a simulator of a question-answering system by means of an interpretation of the user's question (a specific subset of natural language) made by syntactic and semantic analysis and not only by comparison of formats or by key-words. It is used a transformational grammar with context-free base which will generate the basic questions type which will be analyzed both semantically and syntactically. The system developed in this paper allows questions within a particular subject-matter formulated in a restricted language. It was constructed a set of data-base which seems appropriated for this subject, using three index-tables in such a way that when a question is interpreted the system knows whose table search first by means of the hash-code technique. The implementation program of the system was written in PL/1. The rewriting rule of the base of the grammar and the terminals which do not belong to the base are read and stored in the memory. It was ascribed values to each terminal of the base. These values that will be necessary for the semantic analysis of the user's question are also read and stored in the memory. The data that belong to the data-base set are read and conveniently assembled. After this, questions can be made. Of course it is possible to allow data and questions alternatively, with few modifications in the program. The program must be considered as a test-program which shows the feasibility of what is presented in this paper. However it needs improvements to make it more efficient. A possible improvement could be to add a procedure that permits to correct mistakes in the data base. The system is about the history of the "COMICS", with relation which, we define in chapter 1 the following sets: set of characters; set of artists; set of writers. We will have also one set of years and two sets of periods.

Carlos Alberto Picanço de CARVALHO. "Automaton e particionamento de matrizes de transição". M.Sc. Diss. Presentation: 16/08/73 37 p. Advisor: Sergio Roberto Pinto Teixeira

Abstract: Among the recognizer algorithms of context free languages, it has been distinguished the transition matrices by its speed. The main disadvantage consists in the space occupied by the matrices. In [4] it was observed that, partitioning the transition matrices, the occupied space would be reduced, in change of the lost in detail of error routines. The present work shows a formal model of transition matrices and algorithms to find the transfer points among the matrices obtained by the partitioning method.

Dulcinéia de L. V. FERREIRA. "Um método cíclico de redução para solução da equação de Poisson". M.Sc. Diss. Presentation: 20/06/73 45 p. Advisor: Martin Allen Diamond

Abstract: A direct method is developed for solving systems of linear equations which arise in the solution of Poisson's equation over a rectangle with Dirichlet or Neumann boundary condition. This method is similar to CORF algorithm but requires less computation. Its principle application is when we have Poisson's equation with Dirichlet boundary condition on a nonrectangular region. The greatest reduction in computation occurs in this case.

Fábio Ceschin FERREIRA. "Construção automática de dicionários hierárquicos". M.Sc. Diss. Presentation: 31/01/73 56 p. Advisor: Flávio Pereira de Souza

Abstract: Several processes for building hierarchical arrangement of terms describing document contents are presented and discussed. Techniques for automatic implementation of one of those are also fully described.

Giosafatte GAZZANEO. "Sistema de processamento de informações - um modelo para a administração escolar". M.Sc. Diss. Presentation: 21/09/73 105 p. Advisor: Donaldo de Souza Dias

Abstract: This work presents a development in techniques of determining a model for a Information Processing System for Brazilian high School institutions. It has been divided into three stages: study and characterization of the System acting environment model definition and implementation planning. The annex gives a summary of the analytical methodology for project development. In the model

characterization was used the new “Lei de Diretrizes e Bases” which rule the undergraduate teaching in the whole country.

Joaquim Elias de FREITAS. “Minimização de tabelas binárias de decisão”. M.Sc. Diss. Presentation: 20/09/73 26 p. Advisor: Larry Kerschberg

Abstract: English abstract not provided.

José Mauro Volkmer de CASTILHO. “Um esquema de implementação para fórmulas do ALGOL 68”. M.Sc.Diss. Presentation: 12/09/73 65 p. Advisor: Sergio Roberto Pinto Teixeira

Abstract: This work reports the result of a study of the Algol 68 programming language entertained with the purpose of utilizing its revolutionary features in other programming languages. Algol 68 like formulas, containing user defined operators and operations, is advanced. The related information structures are sketched and an algorithm for syntactic analysis of the formulas is given.

Kazue YAMAGUCHI. “Algumas rotinas para o tratamento de árvores binárias no sistema IBM 1130”. M.Sc. Diss. Presentation: 31/01/73 160 p. Advisor: Luiz Ferrara de Almeida Cunha

Abstract: A set of subprograms (subroutines and functions) written in FORTRAN for the IBM 1130 with 8k words of core storage, for representing and manipulating binary trees is presented in this work. Throughout the text an effort is made towards establishing standard symbols for representing binary tree elements and properties, so as to clarify the presentation of the algorithms implemented.

Laira Vieira TOSCANI. “Prova da correção formal de um compilador simples”. M.Sc. Diss. Presentation: 02/07/73 57 p. Advisor: Sueli Mendes dos Santos

Abstract: The purpose of the thesis is to prove the formal correctness of a simple compiler. The work is divided into the following sections: 1) description of a model of a machine capable of simulating the actions of a simple computer; 2) informal description of a simple programming language; 3) informal definition of a compiler for this language; 4) formal definition of the computer, of the programming language, and of the compiler; 5) proof of the formal correctness of the compiler.

Milton CORRÊA FILHO. “Uma aplicação da teoria de informação na seleção de palavras chaves”. M.Sc. Diss. Presentation: 02/73 p. Advisor: Luiz Carlos Gomes

Note: Not available.

Múcio Gomes da Silva QUEIROZ. “Um estudo comparativo de processos estatísticos para obtenção automática de resumos”. M.Sc. Diss. Presentation: 16/01/73 102 p. Advisor: Luiz Edmundo Soares

Abstract: The purpose of this work was to compare the abstract of a given text in English with the corresponding abstract for the same text in Portuguese, both abstracts were obtained by application of statistical experiments in automatic extracting. Two experiments in automatic abstracting were chosen, the Luhn’s Experiment [2] and the experiment suggested by Edmundson and Wylls [5], both based on statistical methods. An algorithm was implemented for each experiment used here. Using the IBM/370 System, two programs were written in the PL/I Language, each representing one of the implemented algorithms. Sixteen chapters from different books were used as texts for all the experiments.

Newton Braga ROSA. “Software para programação de micro computador destinado a orientação por satélites artificiais”. M.Sc. Diss. Presentation: 21/12/73 170 p. Advisor: Mario Aloysio Telles Ribeiro

Abstract: The research Institute of the Brazilian Navy (Instituto de Pesquisas da Marinha - IPqM) is developing a navigation receiver, using as a starting point, information transmitted by the artificial

satellites of the transit system. An important part of this project is the construction of a fixed-program microcomputer, with large scale integration chips (MOS-LSI), to figure out the coordinates of the navigator's position, starting from data transmitted from the satellite (orbital parameters), and local information supplied by the operator. The dissertation deals with the utilization of microcomputers in data processing, their peculiarities and their main applications, as well as some important cautions to be taken in their programming and in software requirements for their proper and efficient employ. There is also a description of some of the solutions derived to establish the computer model and its appropriated configuration, following project specifications, stressing the experience acquired in developing microcomputers suited to specific needs. The computer chosen for this project, the Intel MCS-4, together with the Cross-Software to its programming, are topics treated in depth. Also, a description is offered of the general lines followed in this project by the research Institute of the Brazilian Navy (IPqM). The description of the satellite navigation method and of the transit system components summarizes a substantial amount of references on these topics.

Renaud Pierre LEENHARDT. "Acessibilidade, controlabilidade e observabilidade de sistemas bilineares". M.Sc. Diss. Presentation: 02/03/73 61 p. Advisor: Larry Kerschberg

Abstract: Within the frame of the Theory of Algebraic Systems P.A.S. Veloso obtained a decomposition for the casual Bilinear System separating the non-linearity characterized by the tensor product from the linear components. Making use of this result the present work proposes a definition for the state of the casual Bilinear System. Besides with the basis on the study by Larry Kerschberg of the concepts of accessibility, controllability and observability for linear systems, it presents a study of those concepts for the time invariant uniformly transitional causal bilinear system, in the case of continuous time and more precisely in the case of discrete time.

Thadeu KELLER FILHO. "Uma extensão de um método de von Neumann para a geração de variáveis aleatórias". M.Sc. Diss. Presentation: 10/09/73 62 p. Advisor: Ricardo Milton Frischtak

Abstract: The main purpose of the thesis is present an extension of a method conceived by Von Neumann for the exact generation of random variables with a digital computer. Von Neumann's method - named "rejection method" - has served as a basis for several important applications of discrete simulation. Nevertheless, the method's field of applications is very limited, since it allows only the generation of continuous random variables with finite and bounded probability density function. The exposition of the thesis, the classical inverse transformation is first examined. It is composed of the main technique for the exact generation of random variables. Then, Von Neumann's method is studied, so as to point out critical aspect of its limitations. The purpose of the thesis is then achieved, where a more general rejection technique is conceived so as to enlarge considerably the field of its applications. The efficiency of the method is then studied and examined the possibility of adapting Butler's method of mixtures, to gradually produce a greater efficiency. Finally, some numerical examples are presented, to allow a practical evaluation of the accuracy and efficiency of the proposed method.

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Ana Maria Salles PIMENTEL. "Determinação automática do significado de palavras em português utilizando um modelo de rede semântica". M.Sc. Diss. Presentation: 15/10/74 p. Advisor: Sueli Mendes dos Santos

Note: Not available.

Ari Meirelles DUARTE. "Modelo matemático para o planejamento do sistema educacional no Brasil". M.Sc. Diss. Presentation: 14/06/74 p. Advisor: Fernando Curado

Note: Not available.

Arnaldo de Souza PEREIRA. "Cálculo automático de tarifas aéreas". M.Sc. Diss. Presentation: 26/08/74 88 p. Advisor: Larry Kerschberg

Abstract: The process of calculating an international airline ticket involves a set of well-defined rules, access to catalogues containing data regarding prices and distances, as well as the ticket agent's common sense. The price calculation can be quite time consuming and tiring because several complete calculations must be performed until the minimum price is obtained. This thesis presents a program which aids the ticket agent in computing air fares. The program is developed so as to allow the agent to vary those variables which depend on his experience and good judgment. The program was implemented in PL/I on the IBM 370/165 system at the Pontifical Catholic University of Rio de Janeiro.

Carlos Jorge ZIMMERMANN. "SIESTA: Um sistema integrado estatístico conversacional". M.Sc. Diss. Presentation: 27/12/74 88 p. Advisor: Miklos Antal Vasarhelyi

Abstract: This work presents the development of an interactive (conversational) system to be used in the solution of problems in statistical analysis and operation research as: frequency distribution, descriptive statistics, analysis of variance, regression and correlation, linear programming, critical path method, transportation problem, etc. The Integrated Statistical System (SIESTA) was idealized with the basic aim of serving the non-programming or the user with little programming experience.

Clóvis de OLIVEIRA. "Métodos heurísticos na prova automática de teoremas usando árvores de derivação". M.Sc. Diss. Presentation: 05/04/74 194 p. Advisor: Marília Rosa Millan

Abstract: Since the last few years research has been developing in the field of artificial intelligence, which uses formal systems to prove theorems automatically. One of the existing systems, the - analytical tableaux - developed by M. Smullyan (18), uses binary trees to prove theorems of propositional and pure predicate calculus. This system, which is a variant of the semantic tableaux of Beth (1), is simpler because it uses only one tree instead of two. The aim of this paper is to present possible heuristics for Smullyan's system, using the two algorithm (17) as basic tools, in order to improve the research time as well as to decrease the number of steps in the automatic proof of a theorem. The algorithms and heuristics are in the actual implementation using the SPITBOL (19) programming language.

Jayme Simão Portugal GOLDSTEIN. "Um sistema de recuperação de informações para o computador IBM1130". M.Sc. Diss. Presentation: 27/12/74 p. Advisor: Victor Moreno

Note: Not available.

José Mansur NACIF. "Programas em FORTRAN para autovalores e autovetores de matrizes reais". M.Sc. Diss. Presentation: 11/06/74 98 p. Advisor: Peter Albrecht

Abstract: Five algorithms and their respective programs in FORTRAN are presented for the calculation of eigenvalues and eigenvectors of real matrices. In each of the first three chapters the theoretical basis of a specific method for symmetrical matrices as well as the corresponding program and an example of utilization are succinctly presented. They are the algorithm of Jacobi, the Givens-Householder method and the implicit QL algorithm for symmetrical matrices. In the fourth chapter the same is done with respect to the Duble QR algorithm for real matrices. Appendix A presents a program for real matrices based on a method like that of Jacobi algorithm. Several examples were tested and the results are presented in Appendix B.

José Márcio Castellões MESQUITA. "PHADA - processador de histogramas para aquisição de dados em automação". M.Sc. Diss. Presentation: 23/09/74 191 p. Advisor: Wilson Aguiar

Abstract: The aim of this work is to give the searcher a way to the visual exposition of statistical material through a graphic system. The design of statistical graphics is a hard work and requires high level qualified staff. Its automation allows a prompt obtainment of the graphics and guarantees its accuracy. For this purpose, a virtual machine was designed and all the system is interconnected by procedures.

Marco Aurélio Palhas de CARVALHO. "Modelo probabilístico de simulação de um sistema hidro-termo-elétrico". M.Sc. Diss. Presentation: 23/09/74 43 p. Advisor: Miklos Antal Vasarhelyi

Abstract: This paper presents an explicit probabilistic model, that describes the behavior of an electric generation system, mainly composed of hydro-power plants, based on the natural energy hydrograph. Likewise a model of the natural energy of Brazil's Southeast Region is formulated.

Maria Encarnación del Pilar Martinez GONÇALVES. "Tradução automática de frases da linguagem natural". M.Sc. Diss. Presentation: 29/07/74 86 p. Advisor: Sueli Mendes dos Santos

Abstract: The general objective of the paper is to describe a system to translate phrases from the natural language (Portuguese) to the first order logic language. The first step is to verify if the phrase is grammatically correct, according to the rules of the grammar described in the paper; the second is to associate a meaning to the phrase and, finally, to translate the phrase. A model of transformational grammar is used as model to the grammar of the subset of Portuguese language admitted as input of the translation system. The algorithm is implemented in PL/I and in order to improve the interaction with the users, taking into account the system characteristics, the facilities offered by the Terminal System Operation (TSO) were used.

Maria Heloisa PENEDO. "Uma aplicação de computador na educação". M.Sc.Diss. Presentation: 26/09/74 103 p. Advisor: Sueli Mendes dos Santos

Abstract: This work consists of three interrelated parts concerning Computer Assisted Instruction (CAI). The first part provides a review of the important topics regarding CAI such as: the advantages and disadvantages of such systems, systems currently available or under development, and the application of CAI to elementary school education. Second, a general model of computer based instruction is presented together with fixed strategies for lesson presentation, course structure, and student performance evaluation. Lastly, a simplified computer is developed in order to teach basic concepts concerning the digital computer to students in the ten to fifteen year old range. A course curriculum and lesson plan were developed for teaching the computer model according to the strategies outline above.

Paulo Roberto Schubnell de Rezende LIMA. "Estudo experimental sobre a análise da variância, por meio de simulação discreta, em caso de universos não-normais". M.Sc. Diss. Presentation: 12/08/74 79 p. Advisor: Thadeu Keller Filho

Abstract: The purpose of this thesis is to use the discrete simulation technique to study the Analysis of Variance empirically in cases of non-normal universes. Most studies already done on the subject do not lead to definitive conclusions, for, at the time they were made, the resources which are offered nowadays

by electronic computing, were not available. The methodology followed in this thesis largely utilizes the generation of random variables in the computer, in accordance with distributions of the most different degrees of -remoteness - from a normal distribution. The results obtained allowed us to identify a family of distributions which serve as a descriptive model of the ratio F sampling distribution, on which the Analysis of Variance is based. Besides, the empirical study of the percentage points of the ratio F sampling distribution made it possible to verify in which conditions negligence of the normality postulation affects the decisions which result from the application of the classical model of the Analysis of Variance.

Ronald LEAL. "Um modelo probabilístico para avaliação e análise de desempenho de um sistema de programação". M.Sc. Diss. Presentation: 20/11/74 86 p. Advisor: Larry Kerschberg

Abstract: This thesis presents a probabilistic model for the analysis and performance evaluation of programming systems. The model, called the Probabilistic Flowgraph, consists of the system flowgraph together with information regarding processing costs and the probability of executing certain blocks of code. Thus, the Probabilistic Flowgraph can be considered a simulation model of the system. Two methods are presented which allow the user to obtain information regarding the system model. The first method, proposed by Beizer [1], reduces the original flowgraph by means of elementary operations to a single arc. The values associated with this arc are the system's mean execution time (or cost) and the variance of this estimate. The second method treats the Probabilistic Flowgraph as a Markov chain. In this context much more information is available, such as the mean number of times each node will be visited during execution, the probability of walking from node *i* to node *j* in exactly *k* steps, as well as the system's mean execution time (or cost). Since the Markov chain model is quite general, the Probabilistic Flowgraph is generalized to permit a more detailed analysis of the system being modeled. Lastly, some practical aspects concerning the model are presented, in particular, how one estimates the decision nodes probabilities and how the two analysis techniques can be interrelated.

Sancho Eduardo de Bittencourt BERENGUER. "Um sistema integrado de controle de espaço em disco". M.Sc. Diss. Presentation: 27/08/74 43 p. Advisor: Miklos Antal Vasarhelyi

Abstract: This thesis is concerned with the problem of disk space management in a computer center. Lack and inadequate utilization of disk space create serious problems for the computer center user. The problem is solved by the development of an Integrated Storage System with batch and interactive modes of utilization. This solution is compared with practice adopted in different computer centers and conclusions are drawn on the adequacy of its utilization at the Rio Datacenter of the Catholic University of Rio de Janeiro.

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Angela Maria BOSISIO. “Um processo de deteção e recuperação automática de erros sintáticos”. M.Sc. Diss. Presentation: 30/07/75 130 p. Advisor: Sergio Roberto Pinto Teixeira

Abstract: This paper studies the possibility of a formalization and automatization of syntax error detection and recovery process, to be applied in regular and LR (K) languages. In this way of detection and recovery of the error, backtrack is not used, and certain language’s symbols made the process to be deterministic. It’s a process similar to the one that’s used to detect and recover errors in ALGOL, through the use of the symbol ‘; ‘. These symbols are defined as a function of language’s recognizer and grammar and will be called Precise Symbols. When a language’s sentence has been analyzed these symbols are used to induce a factorization in the same sentence. This factorization gives correct, incorrect and not yet analyzed substrings of the sentence. The correct substrings begin with a Precise Symbol. Analyzing the efficiency of the process, considerations about ‘type of error’ and ‘position of the error’ are made. The difficulties to automatization of this process with LR (K) languages, are also shown.

Anibal Pereira CARDOSO. “Programação estruturada, equipes de programação e COBOL”. M.Sc. Diss. Presentation: 12/12/75 210 p. Advisor: Eugenio Vilar Pires

Abstract: This work is divided in three parts. In the first part, a detailed description of the Structured Programming technique is given, based on an extensive literature on the subject. In order to point out the advantages of the technique, some considerations on correctness and quality in programming are made. The second part presents a proposal for the use of Structured Programming in COBOL and contains an example of the implementation of a typical BDP program. Finally, the Chief Programmer Teams methodology is described.

Antonio Julio Lossio BOTELHO. “Gerador automático de reconhecedores de linguagens por matrizes de transição com particionamento”. M.Sc. Diss. Presentation: 21/03/75 45 [+195] p. Advisor: Luiz Ferrara de Almeida Cunha

Abstract: The MATREC system (Automatic generator of recognizers of languages parsable by Transition Matrix, with partitioning), generates a syntactic oriented recognizer from a grammar using the transition matrix method, giving the user the possibility of partitioning, in a attempt to reduce the core problem presented by original method.

Antonio Manoel de OLIVEIRA. “Um módulo para criação e modificação de cursos para ensino por computador”. M.Sc. Diss. Presentation: 18/12/75 160 p. Advisor: Marília Rosa Millan

Abstract: The Autor Module allows instructor-made CAI courses over a predefined structure in automatic and semi-conversational way. This facility is provided by a statement Autor language single-syntaxes and reduced.

Arnaldo de Vasconcellos SERPA. “Um processador de arquivos para o sistema operacional do mini-computador G-10”. M.Sc.Diss. Presentation: 08/07/75 170 p. Advisor: Firmo Freire

Abstract: The main objectives of this work is to propose a definition for a Disk File Manager running in a multiprogramming environment created by a Disk Operating System for the G10 Minicomputer. This minicomputer was designed under the auspices of the “Grupo de Trabalhos Especiais” (GTE), organ related to the “Ministério da Marinha” and the “Planejamento de Coordenação Geral”. This thesis was developed in didactic fashion always trying to justify the adopted solutions; it is thus hopped that this work will be used in further research related to this topic.

Atendolfo Pereda BORQUEZ. “Analisador de estratégia mista: Top-Down e Bottom-Up”. M.Sc. Diss. Presentation: 26/03/75 69 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The present work is concerned with the creation of a mixed strategy (top-down - bottom-up) analyzer. An adequate methodology for the partition of grammars that can be analyzable in this form is developed. Algorithms are presented for the application of the mixed analyzer. The bottom up analyzer used as the basic model is of the LR(O) type; the top down analyzer is of the RR(k) type.

Carlos Roberto Sarmento BARBOSA. "Um estudo comparativo de sistemas de ensino por computador". M.Sc. Diss. Presentation: 06/03/75 [irr.] p. Advisor: Marília Rosa Millan

Abstract: This work compares CAI systems, trying to characterize their advantages, disadvantages and the problems which rise in their development. The systems are grouped in the following classes: frame oriented, generative and intelligent systems. They are compared based on their methodological model and computational model. It is suggested a way of implementing each one of the systems.

Catherine Blin A.N. BELTRÃO. "Uma estimativa de erros e aplicações em problemas semilineares de valor de contorno". M.Sc. Diss. Presentation: 10/12/75 79 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: The main object of this thesis is to present some generalities and refinements to a theory developed by Gunter Bertram; and furthermore, to test it, aiming to set upper bounds for the absolute values of the errors committed when using approximate methods to solve a class of semilinear boundary value problems with ordinary differential equations.

Daniel Alberto MENASCÉ. "Um algorítmo eficiente para cálculo de árvores mínimas usando Backtracking". M.Sc. Diss. Presentation: 14/04/75 95 p. Advisor: Larry Kerschberg

Abstract: A backtracking algorithm for computing minimum spanning trees in non-directed graphs is introduced in this work. The algorithms of Prim, Kruskal and Sollin are also presented, as well as the Kruskal/Treesort algorithm. The complexity analysis of the Backtracking algorithm is accomplished through the development of a model of the algorithm's execution. An estimate of n log...n for the number of operations performed is obtained by calculations on the model. Tests performed with the algorithm demonstrated the validity of the model as well as the superiority of the Backtracking Algorithm over the Kruskal/Treesort Algorithm regarding the number of operations performed.

Ester de Carvalho DINIZ. "Um estudo sobre técnicas de memória virtual". M.Sc. Diss. Presentation: 22/12/75 124 p. Advisor: Rubens Nascimento Melo

Abstract: This work is divided in two parts. The first part is a survey of techniques used in the implementation of virtual memory, covering results obtained in this area. The second part consists in the implementation of a laboratory to be used in the study of the behavior of a system using virtual memory. The main parameters considered in this study are - Size of virtual memory, page size, replacement algorithm and number of multiprogrammed processes.

Eunice de Biassio da CUNHA. "Um estudo comparativo de linguagens de consulta para bancos de dados". M.Sc. Diss. Presentation: 23/12/75 125 p. Advisor: Larry Kerschberg

Abstract: This thesis presents a comparative study of query and data manipulation languages for databases. Initially, languages dealing with binary relations are presented, such as: Relational Data File, LEAP, TRAMP, REL and FORAL. Moreover, languages designed for Codd's Relational Model are presented, such as: ALPHA, MORIS (COLARD), SQUARE, SEQUEL, QUERY BY EXAMPLE, EDBS e INGRES (QUEL). Finally, the Functional Model of Data is described. This model is a semantic model which indicates the interrelationships among entities which constitute the database. A syntax for a query language is presented. The specification of a query corresponds to the enumeration of a set of quantified paths though the model's graph. Sample queries are given with respect to a database presented in Zloof [18]. The conclusions contain a series of points which rate the languages with respect

to their proximity to natural language, the type of user, and the capacity to manipulate arithmetic expressions.

Evandro Barreira MILET. "Definição e dimensionamento de uma rede de mini-computadores para agências bancárias". M.Sc. Diss. Presentation: 30/07/75 106 p. Advisor: Mario Aloysio Telles Ribeiro

Abstract: This work does an analysis of options to implement a minicomputer's network in the city of Rio de Janeiro. This network interconnects branch offices with their own systems, based on minicomputers, in order to allow transferring funds between branch offices of the same Bank. The solution of a distributed intelligence system like this makes each branch self-sufficient on dealing with their checking accounts, allowing an eventual transfer of funds between branch offices and increasing the system's security and reliability since the main processing, which is the own branch's one doesn't stay dependent of the transmission lines which continue to be the critical problem in teleprocessing systems in Brazil.

José Expedito de FREITAS. "Desempenho de um processo descrito por um fluxograma sobre um domínio integrável". M.Sc. Diss. Presentation: 15/12/75 45 p. Advisor: Larry Kerschberg

Abstract: The objective of this work is the development of a methodology to study the performance of systems described by flowgraphs in which the activities associated with the nodes or arcs are described by functions from an integral domain, i.e., usually polynomial functions in several variables. The performance evaluation is done by reducing the flowgraph via Mason's reduction rules to a reduced flowgraph consisting of one arc. The method used herein is due to Bareiss which in turn is a variation of a two-pass, division free method due to Gauss. An algorithm is presented which transforms a flowgraph in which activities are associated to arcs to another equivalent flowgraph with activities assigned to nodes. This permits any flowgraph to be studied using a unique algorithm. A new method is given to compute the generating function of a flowgraph which is superior to Mason's node elimination method. This method computes the generating function using MacLaurin Series to obtain the coefficients of higher powers of the transmission matrix of the flowgraph. Lastly, some topics for future research regarding the model are discussed.

Fernando Bley Vicente de CASTRO. "Utilização de linguagem com manipulação de fórmulas para minimização de funções". M.Sc.Diss. Presentation: 30/01/75 97 p. Advisor: Therezinha da Costa Ferreira Chaves

Abstract: The problem of unconstrained minimization of a non linear function f: R .→R. can be solved by methods that don't use derivatives, called frequently direct search methods, or by methods that need analytic derivatives. As a general rule, these converge more rapid to the solution than those ones. However, in practice, the methods that use derivatives have two main barriers to their implementation in computers. First - in functions with a modest number of variables is laborious and many times impossible to provide analytical derivatives of these ones. Substitutions on evaluation of analytic derivatives by difference schemes can not be well succeeded because numerical error introduces which invalidate important characteristics of the methods, turning them less efficient. Second - the minimization techniques based on the evaluation of the first derivatives and, eventually the second one require a big time to the prepare of the problem by the user before the utilization of the algorithm, that is disadvantageous comparing this with the direct search techniques. The appearance of programming language allowing symbolic manipulations of mathematical formulas, in which the formal derivation of a big set of functions could involve sine, cosine, logarithms, etc. opening a new field to the algorithms with derivatives, and making easy the use of them. The present survey claim to analyze the behavior of some algorithms of Nonlinear Programming coded in FORMAC. FORMAC is a programming language that allows a symbolic manipulation of mathematical expressions, by example, the expression SIN (X) can be derived, resulting the expression COS (X). Expressions can contain variable, constants, functions defined by the user, symbolic constants as the number π and i (the square root of -1), as well as the build in functions as SIN, COS, EXP, and others. Expressions can be derived, evaluated, replaced and parsed. The behavior of the algorithm coded in that language will be analyzed, making a test in several functions. For each presented algorithm coded in FORMAC, will be done a comparing survey with two other implementations, one using derivatives get manually and given by the user, and the other doing the

use of difference schemes substituting the evaluations of analytical derivatives. Conclusions with regard to run time and accuracy of solution will be given in tables as well as information about the facility of utilization and required storage. With the amount of these information it will be possible to define the preferable situations in the use of FORMAC.

Fuad GATTAZ SOBRINHO. "Autovalores de grafos e suas aplicações". M.Sc. Diss. Presentation: 30/07/75 65 p. Advisor: Larry Kerschberg

Abstract: Graph Topology studies are in general complex. They show useful in determining clusters of points in a document space, partitions, and other properties of interest, in Graph theory. This thesis stress the importance of eigenvalues and Boolean Algebra as efficient tools when dealing with Graph Topology. Also presents future alternatives for research in the area.

Gilse Antoninha M. FALKEMBACH. "Sistema MACHRIS - sistema de edição e manutenção de documentos". M.Sc. Diss. Presentation: 22/12/75 206 p. Advisor: Larry Kerschberg

Abstract: This work presents the project of a conversational system to the elaboration and maintenance of documents. The process consists on the phases of edition, bringing up to date and formatting of documents. It was established a special language of edition and manipulation of texts. The work is basically constitutes of three parts, which are: manual of application of the system; manual of description of the language; documentation of the system. It is also presented the conclusions referring to the system and some suggestions for its implementation.

Hector Manuel RODRIGUEZ ESTAY. "Um sistema de informação hospitalar". M.Sc. Diss. Presentation: 23/12/75 279 p. Advisor: Emmanuel Piseces Lopes Passos

Abstract: The present work is concerned with the project of a computerized hospital information system. The Hospital System designed, is targeted to provide non-profit hospital, and as by-product, private hospitals also, the ability to control the clinic history of their out-patients and inpatients. As a normal consequence of such control, cost per patient, per clinic, etc., are calculated. The cost per patient can be used as the basis for patient billing. The registration will be for the inpatients, as well as for the out-patients.

Jackson GUEDES. "Avaliação de sistemas de informação: um estudo sobre viabilidade econômica". M.Sc. Diss. Presentation: 24/10/75 134 p. Advisor: Rubens Nascimento Melo

Abstract: The relevance of Information Systems in society in general and to their components organizations in particular can be seen by the volume of resources that has been invested in their development. Thus, it is necessary to study the decision-making process that precedes the design of these systems in terms of economic feasibility in such a way that the decision to invest can be done rationally. This work intends to contribute in this problem area, first analyzing various existent criteria of evaluation. Secondly, studying the application of cost-benefit analysis in order to include the quality of information.

João Carlos de Assis Ribeiro de OLIVEIRA. "Um estudo sobre ordenação em arquivos parcialmente ordenados". M.Sc. Diss. Presentation: 22/12/75 76 p. Advisor: Luiz Ferrara de Almeida Cunha

Abstract: We present here the main sorting algorithms. For each one we stress the way in which the initial order of the input file affects its performance. The goal of this work is finding the most efficient sorting methods for partially ordered files.

João Eduardo de Rezende DANTAS. "Um conjunto de rotinas básicas de entrada e saída para o sistema operacional do mini-computador G-10". M.Sc. Diss. Presentation: 03/07/75 156 p. Advisor: Firmo Freire

Abstract: The objective of this work is to present, in a comprehensive form, the methodology of development of a basic input output package. As an example a real package was developed here. This package is to be a part of the Disk Operating System for the Brazilian computer G-10. This computer is being developed under the coordination of the Grupo de Trabalho Especial (GTE) linked to the ministries of Naval Affairs and Planning, created by presidential decree number 68267 on February 18th 1971. The purpose here is to prove that, in many cases, input output routines are not more difficult to write than application program and that, with a good knowledge of the hardware characteristics, coding them becomes a natural effort.

João Sebaldo SCHUCK. "Um novo método Adams-Moulton de ordem e passo variável para equações diferenciais ordinárias". M.Sc. Diss. Presentation: 05/12/75 56 p. Advisor: Michael Anthony Stanton

Abstract: A new method for the solution of initial value problems of ordinary differential equations is presented. It is a variable order, variable step, predictor-corrector method of the Adams multistep type. Instead of the Adams-Bashforth predictor formula it first uses, by means of extrapolation, the backward difference table for predicting the value of the derivative for a new step, and then calculates the first approximation of the solution by the Adams-Moulton formula. After this it takes the evaluation of the derivative, the first time for this step, and a second application of the Adams-Moulton corrector formula., which may terminate it if the result satisfies the criterion for the error estimation. Otherwise a second use of the evaluation-correction procedure is applied to terminate the step. The order of the method varies between three and ten. The most typical feature of the method is its technique for minimizing the effects of errors propagated through the difference table from the previous steps. The method was only implemented for one-equation problems. In this form a PL/I program obtained very good results, comparable with those of other Adams methods.

José Clovis BARBETTA. "Compactação de arquivos". M.Sc. Diss. Presentation: 02/10/75 90 p. Advisor: Luiz Carlos Gomes

Abstract: In this work we consider several data-set compaction methods, with special emphasis on large and static data-sets, such as those made of census data. A critical study is done about several techniques, based on information theory, and presenting whenever possible, theoretical and practical measurements on the methods functioning.

José Luiz SAN MIGUEL ESPEJEL. "Equações diferenciais rígidas". M.Sc. Diss. Presentation: 09/04/75 p. Advisor: Michael Anthony Stanton

Note: Not available.

Manoel ALVES. "Um estudo de métodos recursivos para a geração de circuitos em grafos dirigidos". M.Sc. Diss. Presentation: 16/12/75 141 p. Advisor: Larry Kerschberg

Abstract: This work presents the recursive and generic algorithm of Ardon and Malik to the generation of the circuits in the directed graphs. The generality of this algorithm is in its power to generate cycles of nonoriented graphs, Hamiltonian circuits and directed paths of a directed graph. The recursive algorithm of Tarjan and Szwarcfiter are presented too. A pattern of an execution of the algorithm is presented with the purpose of making an analysis about its complexity. The number of executed operations is in the order of 5N. According to the calculations done about the model. Tests made with the Ardon's and Malik's algorithm showed that, in spite of its generality, it mustn't be used to real cases where greater then 8, because the Tarjan's and Szwarcfiter's algorithms are higher than the number of executed operations.

Marcelo Barbosa CARNEIRO. "Um gerente de memória para o sistema operacional em disco do minicomputador G-10". M.Sc. Diss. Presentation: 25/06/75 106 p. Advisor: Firmo Freire

Abstract: This work consists on the design and implementation of the Memory Manager for the SOD (Disk Operating System) presently being developed for the G-10 Minicomputer, developed under the

auspices of the GTE (Grupo de Trabalho Especial), sponsored by the Navy Ministry. The objective of this work is to provide an efficient algorithm in terms of main memory usage and time overhead. Tests are given to show this efficiency under various conditions of memory allocation.

Marcio Pecegueiro do AMARAL. "Planejamento e controle de projeto de software". M.Sc. Diss. Presentation: 22/12/75 115 p. Advisor: Emmanuel Piseces Lopes Passos

Abstract: A project can be seen as a system. The considerations of the two other systems related- Organization and Project Product - and the use of System Analysis, Systems Engineering and Architecture, is expected to result in better specifications of the objectives, functions and goals, and harmonious interaction between these systems. This is the basic approach in the text. Chapter 1 explains the scope of this dissertation. In the 2nd chapter, the functions of planning and control are studied. The 3rd chapter surveys, briefly, the main aspects of planning, stressing the topics demanded for a clear definition of a project. The 4th chapter is dedicated to the particularities of a software project, suggesting specific methods to deal with them. Some general ideas considered useful in planning are discussed. Finally, the 5th chapter presents a case study - The Guaranys Project. This Project involves the development of software for the G-10, a Brazilian mini-computer. Some interesting points are raised and examples of the methods employed are given.

Marcus Vianna CLEMENTINO. "Programação de produção em uma usina siderúrgica". M.Sc. Diss. Presentation: 20/08/75 p. Advisor: Nicácio Barreto Celestino

Note: Not available.

Nelson Antonio Borges GARCIA. "O método de Ritz em elementos finitos para problemas de energia potencial a duas dimensões". M.Sc. Diss. Presentation: 09/09/75 70 p. Advisor: Gunter Bertram

Abstract: An approximate solution of the first, second and third boundary - value - problem of the Laplace - Differential - Equation..Δ (x,y).is often found with Ritz - Galerkin methods in a modern version by using Finite Elements. The differences of the two methods are discussed. Exact error bounds with the Cheby-shev-norm are given on the basis of a generalization of the well known maximum principle, published in 1974 by Natterer and Werner, and the use of an idea by Grunsch (1952).

Paulo Blanco BARROSO. "Discussão e implementação de um formalismo para definição de tipos de Dados". M.Sc. Diss. Presentation: 18/04/75 171 p. Advisor: Antonio Luz Furtado

Abstract: The purpose of this work is to develop a set of commands that make possible the definition and the manipulation of structured data that can be included in the main programming languages, proposing a Data Definition Facility general and non procedural. The work can be looked upon as having two parts, first a discussion to justify the choice of using a graph class to represent structured data and formal grammars as transformation mechanisms. Next, the Data Definition Facility syntax chosen is explained and the implementation done as an extension of the PL/I is described.

Paulo JOBIM FILHO. "Especificação de sistemas de informação: uma abordagem metodológica e um estudo comparativo de técnicas". M.Sc. Diss. Presentation: 18/12/75 102 p. Advisor: Rubens Nascimento Melo

Abstract: This paper starts by identifying what should be specified during the logic design of information systems, in order to: establish a list of design requirements and use it as a basis for comparison of characteristics and distinctive features of the various information systems analysis and documentation techniques, either in use or proposed in the literature; propose a framework for the description of information systems, which should be useful as a starting point for the development of future specification methodologies. Based on the above mentioned list of design requirements, some manual and computer-aided specification techniques are discussed.

Paulo Roberto ABSY. "Técnicas de avaliação de desempenho de sistemas de computação com aplicação ao sistema G-10". M.Sc. Diss. Presentation: 16/06/75 65 p. Advisor: Larry Kerschberg

Abstract: The most commonly used techniques for computer systems performance evaluation are presented here, together with the situations where they are applicable. We also report on the development of a system for computer program evaluation for the G-10 computer. This system is here called Program Evaluation Monitor. The Program Evaluation Monitor is used to supply information about programs executed on the G-10 system.

Renan Fernando DONOSO VALIENTE. "Sistema de instrução programada utilizando um mini-computador orientado a operações com terminais video/teclado". M.Sc. Diss. Presentation: 28/02/75 184 p. Advisor: Sueli Mendes dos Santos

Abstract: The computer Aided Instruction Systems (SEAC) generates DATA IV/70 programs specifying lessons that operates as data entry jobs. The courses are defined by the teacher as prefixed directed graphs, whose parameters are given to the SEAC during the load by means of oriented messages (author language). The SEAC operates on a video/keyboard terminal oriented minicomputer, the FOUR-PHASE SYSTEMS.

Roberto da Silva BIGONHA. "Processador de gramáticas SLR (K)". M.Sc. Diss. Presentation: 23/07/75 246 p. Advisor: Luiz Ferrara de Almeida Cunha

Abstract: The goal of the present work is to describe the implementation and the use of a SLR (K) Processor of Grammars. The class of SLR (K) Grammars is defined, as well as the algorithms to generate the Characteristic Finite State Machine (CFSM), the Deterministic Pushdown Automaton (DPDA), and to obtain the Simple Look ahead Sets. Subsequently comes the description of the algorithms and the information structures used in the implementation of the SLR (K) processor. The final part is a critical comment on the implementation, followed by two appendixes containing the program listing and the user's manual.

Silvia Regina Goes PEIXOTO. "Experimentação para um sistema de prova automática de teoremas". M.Sc. Diss. Presentation: 22/12/75 104 [+44] p. Advisor: Roberto Lins de Carvalho

Abstract: A set of experiments made with an automatic theorem proving system for extensions of the Boolean Algebra of Classes, denoted by (BAC)i, is described. Those extensions are presented as formal systems with their valid formulae, as well as concepts and results obtained with resolution in the context of a many-sorted logic. The method developed by Roberto Lins de Carvalho to prove theorems in Set Theory is summarized. This method consists basically in the transformation of a given set of clauses, representing the negation of a formula, through the introduction of new predicate symbols, called "communication predicates". These new symbols are a great help in simplifying the refutation process of a formula in a Definitional Theory as is the case of Set Theory. The syntax used in the (BAC) i formulae is also described with illustrative examples. An implementation, using the SNOBOL/4 language, of a system for (BAC) i is presented in order to illustrate the above mentioned method. This work is concluded with an analysis of the results obtained from tests made for approximately 550 (BAC) i formulae. This analysis includes suggestions that seem to make possible an improved implementation for this system.

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Ana Maria de Alencar PRICE. "Minisnap, definição formal e sugestões para sua implementação". M.Sc. Diss. Presentation: 05/03/76 78 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Students of Humanistic and Social Sciences usually have difficulties in learning programming languages lectured in introductory courses to Computing Science, mainly because of the mathematical approach of those languages. This report is basically the formal description in BNF of MINISNAP, a programming language suitable to that kind of user: a simplified natural language with powerful test processing facilities. A study has been done to introduce blocked commands to make the language appropriate for structured programming. Suggestions for the implementation of the language concerning to symbol table construction and data storage allocation are given.

Ana Maria Machado VEIGA. "Analisador em linguagem de produção Floyd-Evans para gramáticas LL (K)". M.Sc. Diss. Presentation: 17/02/76 71 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: An algorithm for the construction of a syntax recognizer for LL (k) grammars, written in FLOYD-EVANS production language, is presented. Such recognizers are capable of recognizing and parsing an input string in a top-down manner, without backtrack, using a fixed amount of look-ahead, as the traditional LL (k) analyzers. Besides, they possess all the well known advantages of algorithms written in production language.

Antonia Marli DANTE. "Definição formal de tipos de dados abstratos". M.Sc. Diss. Presentation: 26/07/76 117 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: A formal definition of the syntax and semantic of clusters as introduced in the language CLU is presented, through the se of techniques and methodologies of VDL ("Vienna Definition Language"). The cluster entity defines a class of objects by means of the operations applied to members of the class. The Vienna model is specified by the components concrete syntax, abstract syntax, a set of abstract machine states, a transition function and a translator, which will be described.

Carlos Alberto GONÇALVES. "Um sistema interativo para avaliação de desempenho de redes de comutação de pacotes". M.Sc. Diss. Presentation: 17/02/76 279 p. Advisor: Wilson de Pádua Paula Filho

Abstract: In order to provide an appropriate instrument to the computer network designer, who uses the packet switching technique, it was developed and implemented a conversational system with the following components: a Theoretical Calculator, a Simulator, a command language interpreter. The indicators which are directly related to the statistical properties of the link queues are meaningful indicators for the quality of the network designed. This system intends, therefore, to be an analysis tool, so that the effects of the design parameters choices on the performance indicators may be verified. A brief description of this system component is as follows: The Theoretical Calculator and the Simulator generate indicators that are acquired, respectively, from a numeric approximation based on the analogy with a diffusion process (Kobayashi method) and from simulation. The command language interpreter allows changing the design parameter conversationally, acquiring performance indicators from an appropriate repertory. It allows the Theoretical Calculator and the Simulator modulus to be used together or separately. In this subject each one of the system components is described in detail. Some examples of application are displayed with conclusion and comparisons with the purpose of proving the relationship between the performance indicator values of the network obtained by the Theoretical Calculator and those obtained by the Simulator. It's also suggested some future development for the system. At the end, it's presented a user guide some auxiliary tables and also the documentation.

Daniel SCHWABE. "Aspectos de engenharia de software no projeto de linguagens de programação". M.Sc. Diss. Presentation: 23/06/76 50 [+97] p. Advisor: Carlos José Pereira de Lucena

Abstract: Using principles of Software Engineering as design objectives for a programming language, a construct is proposed that allows the association of the notions of abstract data types and uniform reference to data structures to a programming language. The proposed mechanism addresses the problems of portability, efficiency and provability. An experimental system that incorporates this mechanism to PL/I is described, and some examples of its use are discussed.

Diego SANTIMATEO GALVEZ. "Estudo comparativo de duas linguagens de simulação contínua: CSMP/360 e DYNAMO II". M.Sc. Diss. Presentation: 29/12/76 128 p. Advisor: Heitor Luiz Murat de Meirelles Quintella

Abstract: This work is divided into three parts. In the first, a general description of the CSMP's and DYNAMO's characteristic and their capabilities is given. The second part presents a detailed comparison of all elements and facilities of both languages. Last a study is made of the modeling capabilities existing in both languages.

Geovanne Cayres MAGALHÃES. "Modelo físico e operações primitivas para um banco de dados relacional". M.Sc. Diss. Presentation: 27/07/76 91 p. Advisor: Antonio Luz Furtado

Abstract: This work is a proposal of implementation for the basic level of a Data Base Management System, using the relational approach. The file structures are described as well as the primitive commands which allow the access to the DataBase through a high level language.

Gilberto Keller de ANDRADE. "Projeto e construção de banco de dados: especificação de uma linguagem de manipulação de dados". M.Sc. Diss. Presentation: 27/02/76 113 p. Advisor: Rubens Nascimento Melo

Abstract: This work contains the specification of a data manipulation sub-language for a data base which uses the Network Model. In the definition of the statements of this language Fortran was employed as meta-language, enriched with certain routines contained in the data base facilities of the PSL/PSA.

Jorge TRINKEREICH. "Modelo linear mensal e usinas individualizadas de intercâmbio entre subsistemas". M.Sc. Diss. Presentation: 12/08/76 139 p. Advisor: Marco Antonio Palhas de Carvalho

Abstract: This dissertation describes the formulation of a linear programming model for the operation of a hydro-thermal electrical generation system characterized by individual units with energy flow restrictions between regions.

Leila Maria Ripoli EIZIRIK. "Um estudo em manipulação simbólica de expressões algébricas". M.Sc. Diss. Presentation: 29/04/76 98 p. Advisor: Emmanuel Piseces Lopes Passos

Abstract: This thesis is a study on symbolic manipulation. We describe the major studies developed in this area, we examine specifically the problem of the greatest common divisor of polynomials and we present the most important algorithms. Moreover, we describe the LISP, FORMAC and REDUCE languages presenting two programs, written in LISP for symbolic differentiation. One of the programs is a generalization of a program developed by Weissman.

Lúcia Guimarães BARCELOS. "Proteção de processos cooperantes mutuamente suspeitos". M.Sc. Diss. Presentation: 29/01/76 54 p. Advisor: Arndt von Staa

Abstract: A general problem which affects the entire development of an operating system is the design of a protection mechanism. Such mechanism controls the access to objects, especially information objects. This work is aimed at contributing to this problem area, firstly by surveying some protection techniques reported in the literature and describing their power and limitations; secondly, by presenting a suitable model for a multiprogramming environment in which the existence of mutually suspicious

users is assumed. The concept of indirect segmentation is introduced, which, besides providing the desired protection, is also useful as implementation model for modular programming.

Luiz Augusto de Matos HUGUET. "Um método para avaliação de sistemas de ensino através de computadores". M.Sc. Diss. Presentation: 30/01/76 61 p. Advisor: Emmanuel Piseces Lopes Passos

Abstract: Since 1965 different research centers in the USA, UK, and other countries have been working on projects which have as an objective the development of courses, known as CAI (Computer Assisted Instruction), in which the lessons (programming units) are recorded in the auxiliary memory of a computer system, and the lessons are given to the students through terminals. The present work was written with the purpose of establishing evaluation criterium of CAI systems, and to make possible to present the enormous quantity of information recorded during the courses, in clear and compact reports, containing all the necessary information for the mentioned evaluation. A revision of the literature that exists about the matter, a description of the criterium, and the presentation of the parameters used for the measurement of the efficiency of the lessons, are given in chapters 1, 2 and 3. This criterium is applied for the evaluation of the efficiency of a CAI course developed at the Pontifícia Universidade Católica of Rio de Janeiro; a discussion of the results and conclusions obtained is given in chapters 4 and 5 (since the implementation of the course will be latter than the conclusion of this work, the data used to the evaluation was generated in a simulated way).

Luiz Augusto de Mattos AMORIM. "Metodologia para a síntese de implementação de sistemas de programação a partir de uma especificação formal bem constituída". M.Sc. Diss. Presentation: 22/12/76 157 p. Advisor: Carlos José Pereira de Lucena

Abstract: A methodology is developed based on a three linguistic level model for the synthesis of programming systems from a "well constructed" formal specification. Mechanisms for the specification of data abstractions are emphasized, as well as the characteristics of reliability and consistency of the resulting software product. A complete example is presented to illustrate the proposed mechanisms.

Marco Antonio CASANOVA. "Sobre a definição semântica de linguagens de programação através de sistemas para manipulação de florestas encadeadas". M.Sc. Diss. Presentation: 20/07/76 186 p. Advisor: Roberto Lins de Carvalho

Abstract: Operational models devoted to the semantic description of programming languages were being explored for the past 10 years. The basic idea of this method is to define semantics via an interpreter manipulating the abstract syntax of the language. The model presented here, the so-called linked forest manipulation systems, was an outgrow of this line of research (Culik 73). Initially, the conceptual construction of the model is revised, with emphasis on the generation or identification of forests with a given structural pattern. Then, there are described sufficient conditions for the interpreters to be deterministic, or just Church-Rosser.

Maria Celia PELISSON. "Um estudo sobre técnicas para testes de programas". M.Sc. Diss. Presentation: 09/07/76 68 p. Advisor: Carlos José Pereira de Lucena

Abstract: A selection of program test methods is presented. The election is based on an extended study of several of the existing methods that have been reported in the technical literature. Improvements are proposed for some aspects of two of the existing methods, together with a semi-automatic procedure for testing PL/1 programs. The latter approach is based on the use of condition and decision tables.

Maria do Socorro Sabóia MARINHO. "Recuperação de erros sintáticos em níveis hierárquicos". M.Sc. Diss. Presentation: 12/05/76 75 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: A syntactic error recovery method for LR-type analyzer is presented. For each state of the analyzer, the corresponding recovery levels are built. They consist of a nonterminal, an origin state, and a destination state of this nonterminal, and a set of delimiters that can follow this nonterminal, from its

destination state. The recovery action is relative to one of these levels. Criteria for the choice of the adequate level are also presented. The method is applied to an ALGOL W analyzer.

Maria Tereza Mosella Pereira da SILVA. "Modelagem e simulação de sistemas de computação". M.Sc. Diss. Presentation: 26/05/76 71 p. Advisor: Arndt von Staa

Abstract: The aim of this work is to study present techniques of systems simulation with the objective of pointing out new ways for the improvement of such technique. We analyze here a "graph model" as the first step for the representation of a System, and also as a mean of investigating consequences of adaptations and modifications made on the system. To simulate thus represented a quasi-parallel processing based on a co-routine structure is suggested. Some examples are presented in order to test the validity of these suggestions. Finally, ways are shown to build a computer system simulator that can be used effectively on a day-today base.

Nivio ZIVIANI. "Subconjunto de linguagem natural para consulta a banco de dados". M.Sc. Diss. Presentation: 18/11/76 85 p. Advisor: Antonio Luz Furtado

Abstract: An overview of the recent investigations in the areas of computational linguistic and relational data base systems is presented. A language named SLN (Natural Language Subset) for querying relational data base is presented. An algorithm that permits the translation of SLN language to the relational calculus and its implementation are presented. A psychological study to verify the adequacy of the SLN language to the needs of the non-specialized user is outline.

Octávio Augusto Fontes TOURINHO. "Simulação em banco de dados". M.Sc. Diss. Presentation: 14/05/76 118 p. Advisor: Rubens Nascimento Melo

Abstract: We present and discuss a simulation model developed to evaluate the performance of information systems implemented with the help of a DBMS (Data Base Management System). The class of DBMS's considered encompasses those which use data-sets in moving-arm disks to store the data. The implementation, also described, was made using three modules: one to describe the physical aspects of the data-base, other to translate the language created to specify the logic of the programs and the third to run the simulation and print the results. Several aspects to the use of the model are also discussed.

Pedro Leon da ROSA FILHO. "Comunicação em linguagem natural com um sistema de ensino; base de conhecimento e compreensão". M.Sc. Diss. Presentation: 04/08/76 83 p. Advisor: Marília Rosa Millan

Abstract: The implementation here suggested intends to form a system with two other parts for understanding a small set of Portuguese sentences. The result then obtained must be used for becoming more natural the communication between a user and the "Sistema Conversacional para Ensinar e Processar a Linguagem PBASICO" of the G-10 computer. The procedure to work in a Portuguese input sentence and to transform it in a representative graph of the meaning, and the set of routines to give the correspondent outputs are the two other parts of the project referred previously. The framework of the design of the knowledge base, in a semantic network form, is the representation of the Conceptual Dependency and some others used in the TORUS system. An algorithm, not to be implemented in the given form, was designed to fit to the knowledge base whose graph represents the meaning of an input sentence. The use, in a second algorithm, of the modifier symbols of a conceptualization foreseen in the Conceptual Dependency and here added with some others, permits the choice of a specific routine in a set of them, to execute the task required by the input sentence.

Quimico Iamamoto PACHECO. "Métodos de elementos finitos para solução de problemas lineares de valores a dois pontos de equações diferenciais ordinárias de 4a. ordem". M.Sc. Diss. Presentation: 05/03/76 109 p. Advisor: Michael Anthony Stanton

Abstract: This thesis studies two different applications of the finite element method to two point linear boundary value problems for fourth order ordinary differential equations. The first application is based

on a minimum principle where the boundary value problem is transformed into a variation problem, which is solved using Ritz's method, with Hermite-type finite elements, and convergence is proved. The second application is based on a stationary principle in which both the solution and its second derivative enter as independent variables. Linear finite elements are used and the rate of convergence is determined. The two methods are programmed in PL/1 and compared.

Raimundo Machado COSTA. "Estudos comparativos entre dois métodos para avaliar a raiz quadrada em computadores digitais". M.Sc. Diss. Presentation: 05/03/76 93 p. Advisor: Albrecht Karl von Plehwe

Abstract: A new order algorithm for obtaining square roots is presented and compared for efficiency with the second order method normally used in digital computers. The two methods were implemented and a detailed study was made of initial minimax approximation obtained using Remez's method, and of the error propagation in the formulae used.

Reynaldo José Monteiro dos SANTOS. "Compactação de textos da língua portuguesa". M.Sc.Diss. Presentation: 26/02/76 p. Advisor: Marília Rosa Millan

Note: Not available.

Romeu DELAROLI. "Uma técnica semi-formal de documentação para especificação de sistemas de processamento da informação". M.Sc. Diss. Presentation: 23/12/76 105 [+100] p. Advisor: Carlos José Pereira de Lucena

Abstract: This dissertation proposes a three-step method for the specification of information processing systems (under the assumption of the availability of the PSL/PSA system). For the specification of the first step we propose a documentation technique based on a semi-formal notation to help the designer to express a very early problem statement. The second step consists of a problem specification in PSL based on the information contained in the existing documentation. This conversion can be made by a PSL-programmer based on a proposed conversion method. The third step involves the verification of the specification (to be carried out based either on the proposed documentation approach, or in PSL).

Ronaldo Castiglioni PEREIRA. "Uma abordagem para especificação de um sistema de informação para administração de carteira de títulos". M.Sc. Diss. Presentation: 31/03/76 p. Advisor: Luiz Carlos Sá Carvalho

Note: Not available.

Sandra Regina PIZZATTO. "Dois métodos para a solução do problema geral de auto-valores". M.Sc. Diss. Presentation: 07/05/76 102 p. Advisor: Michael Anthony Stanton

Abstract: We describe and implement in FORTRAN IV two methods for solving the generalized eigenvalue problems. $Ax = \lambda Bx$ and $Abx = \lambda x$ where A and B are real symmetric matrices and B is positive definite. The first method is based on Jacobi's algorithm, and the second on Bauer's simultaneous iteration, as modified by Rutishauser.

Vilmondes Gomes da SILVA. "Validação de sistemas de programação". M.Sc. Diss. Presentation: 23/12/76 201 p. Advisor: Carlos José Pereira de Lucena

Abstract: A methodology is proposed for a validation of software systems. The validation process assumes a formal specification expressed in the PSL language and the use of the COBOL language for the system's implementation. The method establishes the transformation rules which must be followed for the construction of the implementation from the formal specification. Additionally, the methodology proposes a way of designing a static test and a dynamic test for the validation of the resulting implementation vis-a-vis the given specification.

1977

Antonio Morais da SILVEIRA. "Análise de aspectos estruturais de programas para auxílio na geração de dados de teste". M.Sc. Diss. Presentation: 07/12/77 84 p. Advisor: Carlos José Pereira de Lucena

Abstract: In the present work several problems related to the process of generation of program test data are presented together with some attempts to the solution of such problems. A methodology is proposed for the generation of test data that is based on the structural aspects of programs. The methodology deals with the problems of nontraversable program paths and arrays by using symbolic execution of programs based on forward substitution. The proposed methodology is compared to the work developed by Lori Clarke and James King for their automatic program test systems.

Artur Ribeiro de BARROS. "MIPSI: Uma metodologia integrada de projeto de sistemas de informação computadorizados". M.Sc. Diss. Presentation: 28/02/77 114 p. Advisor: Carlos José Pereira de Lucena

Abstract: An integrated approach to the process of information systems development is presented according to a proposed information system model. The sub-problem on the computerized sub-system of an information system is then analyzed and a programming system project methodology is proposed based upon a specification language, both graphic and informal, and a set of director indices.

Cheryl Owens FOX. "Um Estudo sobre a função de administração do banco de dados". M.Sc. Diss. Presentation: 20/07/77 69 p. Advisor: Rubens Nascimento Melo

Abstract: The report begins by demonstrating the need for data management and the motivation for creation of organizational units whose responsibility is to administer the data resource. Administrative activities and resulting benefits related to the entire data resource are described under Data Administration, while those associated with data base technology are described under Data Base Administration. The report then presents and compares various viewpoints of the data management function which are found in technical literature. Finally, the implementation of Data Base Administration at Esso Brasileira de Petróleo S.A. is described, to serve as an actual example of how the function can be organized.

Elenir Delboni GUSMÃO. "Especificação conceitual de sistemas de Informação apoiados em banco de dados". M.Sc. Diss. Presentation: 18/02/77 [irr.] p. Advisor: Rubens Nascimento Melo

Abstract: This work introduces the notion of "Conceptual Specification of Information Systems supported by Data Bases". Such a specification is characterized as consisting of: Conceptual Schema of the System Data Base; and Description of the Evolution of the Data Base in the System. The use and the limitations of PSL as a language for Conceptual Specifications are also discussed. The usefulness of the Conceptual Specification for the effective construction of the System Data Base and application programs utilizing a given DBMS (Data Base Management System) is emphasized. In particular, an outline of the mapping of the Conceptual Specification to an implementation by means of a specific DBMS (the one used by the PSL/PSA system) is presented. It is also suggested that the user interaction with the system should be at the conceptual level. Two languages are proposed for this interaction, namely, a sublanguage for data manipulation at the application's program level and a query language for non-procedural interaction.

Érico de Oliveira SILVA. "Controle de acesso e uso das informações de um banco de dados". M.Sc. Diss. Presentation: 10/02/77 194 p. Advisor: Arndt von Staa

Abstract: We consider aspects related to the security and integrity of information in data bases. We intend to establish a set of concepts adequate for the understanding of problems related to the implementation of security and integrity measures, with special emphasis those problems related to access control and use of information in data bases. Many relevant aspects are treated, such as the need for security, the economic aspects of information security, security in computer systems, file and data

base security and integrity, and the security characteristics of some data base management systems. We suggest several alternatives for improving current schemes of information access control.

Heródoto Bento de MELLO FILHO. "Valibol - uma extensão da linguagem COBOL visando uma especificação simplificada de procedimentos de validação de dados". M.Sc. Diss. Presentation: 22/12/77 141 p. Advisor: Arndt von Staa

Abstract: Having come to the conclusion that the data validation problem has not been given its due attention in the universe of facilities to software, initially a survey is done, showing ways for a simplified specification of validation procedures. Next, an extension to the COBOL language, called VALIBOL, is introduced, intending to attend the revealed necessities. Finally, a non-algorithmic description of the translation from VALIBOL to COBOL is presented, aiming to a future implementation of a pre-processor.

Lea Dina SZRAJBMAN. "Um estudo de planarização de ligações e posicionamento de componentes eletrônicos". M.Sc. Diss. Presentation: 28/02/77 105 p. Advisors: João Lizardo Rodrigues Hermes de Araújo (COPPE/UPRS) and Antonio Luz Furtado

Abstract: This thesis has as objective to help in the design of electronic circuits in the part of integrated circuits masks. It is built, based on the description of an integrated circuit by its elements, a drawing in which the semiconductor material is represented as a rectangle, where the components are internal rectangles occupying areas without superposition and connected together by straight lines that represent the electrical connections. The circuit is modeled in form of a graph and upon this graph an algorithm of planarization based on the test of planarization of Tarjan, is applied. Afterwards, the components are positioned and connected together in a reticule on the rectangle, from the information furnished by the algorithm of planarization. This result constitutes an initial solution, which will be presented ion the screen of a graphic interactive terminal, and improved by a draftsman in order to attend to specific technological problems.

Miguel Angelo Alves NÓVOA. "Um estudo da aplicação de monitores ao projeto de sistemas operacionais". M.Sc. Diss. Presentation: 10/10/77 161 p. Advisor: Firmo Freire

Abstract: Study of the adequacy of monitors as a structuring tool for the modular design of operating systems. Three proposals, due to Hoare, Brinch Hansen, and Wirth, respectively, are analyzed. A fourth proposal is suggested, having a specification language as background. This language is used to specify the virtual machine where concurrent processes are executed. Another application of this language is in the complete specification of a resident real-time control system of physical processes. The main goal of this specification is to evaluate the use of monitors as a building tool for operating system design.

Omar de Abreu LOPES. "Uma metodologia de teste baseada na especificação e estrutura de programas". M.Sc. Diss. Presentation: 19/12/77 64 p. Advisor: Carlos José Pereira de Lucena

Abstract: In the present work we investigate the advantages and limitations of the main criteria for program testing that have been published in the Technical Literature. We propose a testing method that is viable in practical situation and that seems to lead to final programs that are satisfactory error free. The proposed method is based simultaneously in the program specification and in its internal structure. In other words, it adopts a point of view that is both top-down (program specification) and bottom-up (program structure). We also describe the implementation of a software that supports the application of the method.

Oscar Luiz Monteiro de FARIAS. "Proposta de uma analisador conceitual para aplicação no sistema de ensino básico". M.Sc. Diss. Presentation: 21/03/77 140 p. Advisor: Sueli Mendes dos Santos

Abstract: The aim of this work is to present a Conceptual Analyzer Model for a subset of the Portuguese Language. The Analyzer receives Portuguese Sentences as input. The sentences are coded by the Analyzer in such a way that they can be integrated into the Semantic Network proposed in master

dissertation of Rosa Filho, in 1976. The goal of the whole system is to allow the user of the Automatic Course for Teaching the PBASICO Language to ask information about the subject of the lessons using natural language.

Paulo Oliveira Araújo COSTA. "Simulação de uma rede de computadores para transmissão de dados". M.Sc. Diss. Presentation: 26/08/77 190 p. Advisor: Arndt von Staa

Abstract: The state of the art of the computer-communication network technology is described. Presentation of a GPSS model to simulate all the pertinent factors that cause the message delay in a packet-switched computer network, similar to ARPANET. The model simulates the line protocol and the basic store-and-forward message processing algorithms, including adaptive routing and error control features. Comprehensive sample cases covering the capabilities of the model are included. Presentation of the model's usefulness to network design, including topological and parameter tradeoff studies.

Paulo Sergio Vilches FRESNEDA. "Gerência de projetos e sistemas de informação". M.Sc. Diss. Presentation: 31/10/77 235 p. Advisor: Arndt von Staa

Abstract: Main aspects of project management are described in order to give a general and comprehensive overview of the main tools used by project managers. The use of information systems as a basis for the management of activities in a project is emphasized. An example of an information system for management support of Agriculture research projects is included. Two chapters are devoted to acquaint the reader with the basic problems of managing research problems.

Pedro Vieira do NASCIMENTO. "Aplicação de analisador focal na geração de resposta para o sistema de ensino básico". M.Sc. Diss. Presentation: 31/08/77 104 p. Advisor: Sueli Mendes dos Santos

Abstract: This work proposes a system for generating the answer to questions about the lessons for teaching the PBasico language. This system will be connected with the Conceptual analyzer presented by Oscar Luiz Monteiro de Farias in his master thesis. Our system includes an Analyzer that is designed for detecting the focus of certain questions. Through the detection of the focus of a question it is possible to extend the set of sentences understood by the system presented by Pedro Leon da Rosa Filho in his master thesis. The Focus Analyzer transforms the output of the Conceptual Analyzer in such way that permits it to be integrated in the semantic network of the understanding system. The aim of this work is to permit a dialogue between the teaching system and the user by means of sentences in Portuguese in such a way that the user will be able to ask questions or to require information from the system about the content of the lessons.

Rosana de Saldanha da Gama LANZELOTTE. "Manipulador de teorias definicionais - uma aplicação a topologia". M.Sc. Diss. Presentation: 02/09/77 108 p. Advisor: Emmanuel Piseces Lopes Passos

Abstract: The Manipulador de Teorias Definicionais is a conversational system that has been implemented in the study of definitional theories, which may or not be mathematical ones. The user creates a database for each theory. Afterwards he can submit queries to the system, by means of a query-language specially designed. A classifier of topological spaces also has been implemented as a system application.

Tarcísio Haroldo Cavalcanti PEQUENO. "Lógica aplicada a verificação de programas". M.Sc. Diss. Presentation: 17/02/77 144 p. Advisor: Roberto Lins de Carvalho

Abstract: Recently research on techniques for proving facts about programs, specially their correctness, has been rather intense. The motivation has been the need to produce reliable software and/or the quest for more knowledge on programming. The amount of results is enough to justify the creation of courses on program verification. A text for such course is proposed, in which strong emphasis is given to mathematical logic, indispensable to the understanding of the course contents. Various methods of verification, considered illustrative of the several approaches are presented and discussed.

Ulrich SCHIEL. "Um sistema heurístico de demonstração automática de teoremas para extensões da álgebra booleana das classes". M.Sc. Diss. Presentation: 25/10/77 106 p. Advisor: Roberto Lins de Carvalho

Abstract: Using a specific theory, the Boolean Algebra of Classes (BAC), and supported by an equivalent concept, the almost-definition ε-Theory, a direct strategy of automatic theorem-proving has been developed. A set of inference as well as substitution rules has been stated; these rules will be applied to the hypotheses and the already deducted clauses. The strategy is based on, alternately, applying a rule and verifying if the thesis is already proved. The formed rules have revealed themselves sufficient for the deduction of many formulas, and the efficiency has been equivalent to other theorem-provers based on the negation of the original formula (refutation). The axioms are not built-in; therefore, each user can state them.

William Carlyle KOELSCH. "A implementação de um subconjunto de linguagem natural para consulta a banco de dados". M.Sc. Diss. Presentation: 28/10/77 145 p. Advisor: Rubens Nascimento Melo

Abstract: This work presents a subset of natural language for the extraction of data from a data base and a generalized flowchart for printing programs which present the requested data in a hierarchical structure. First, because the user's view of the data is relational, some of the main concept of the relational data model are presented. The storage structures permitted by the DBMS used (TOTAL) are shown, and finally the implementation of the system is illustrated.

1978

Ana Regina Cavalcanti da ROCHA. "Plano de desenvolvimento de projetos de sistemas automatizados". M.Sc. Diss. Presentation: 07/12/78 248 p. Advisor: Arndt von Staa

Abstract: After placing the planning in the life-cycle of a project, we have made a study about what the recent literature say about Project Plans. Based on this study, we have presented a methodology to elaborate plans that would allow the development of software projects. We have also presented a sample of the Plan produced by means of the proposed methodology.

Antonio RODRIGUES NETO. "Uma aplicação de banco de dados usando as técnicas do Jackdaw em sessões interativas". M.Sc. Diss. Presentation: 03/03/78 244 p. Advisor: Michael F. Challis

Abstract: This thesis introduces and evaluates the techniques made available by the Jackdaw Database Package for the creation and maintenance of databases using an interactive terminal. An Information System for the Departamento de Informática was designed and implemented in order to illustrate the concepts involved. Finally, various suggestions are made for the further development of Jackdaw in the light of experience gained during the execution of this project.

Ascendino Rodrigues de ARAÚJO. "Um Estudo sobre Técnicas de Transformação de Programas". M.Sc. Diss. Presentation: 27/12/78 113 p. Advisor: Carlos José Pereira de Lucena

Abstract: This paper is a study on the use of semantic definitions of programming language structures, with the objective of applying them to test the validity of techniques for program transformations. Logical combinators are used to define the semantic of structures. An equivalence relation on the structures is presented and examples of equivalent structures are given. The behavior of the structures and the equivalencies are shown.

Diana Pitlik TORTATO. "Modelos de Avaliação e Escolha de Organizações de Arquivos". M.Sc. Diss. Presentation: 29/12/78 125 p. Advisor: Rubens Nascimento Melo

Abstract: This work deals with the problem of evaluating and selecting file organizations for a certain class of application. For this purpose, several generalized models of file organization have been suggested in the literature. Here some of the main works are analyzed and compared and one of them, the Hierarchical Access Model (HAM) [23] is specially presented in detail. Several examples of typical file organization modeling are showed. In particular this model is also applied to the file structures managed by ADABAS.

Elisabeth do Rego LINS. "Especificação conceitual de sistemas de informação: um esquema metodológico". M.Sc. Diss. Presentation: 14/08/78 105 p. Advisor: Carlos José Pereira de Lucena

Abstract: The work firstly presents and discusses Bo Sundgren's proposal to data base conceptual specification. His concepts refer to the description of entities in objective reality that are to be represented in data systems and they also refer to forms by which these entities can be referenced. The studied concepts were applied to an actual case in a business environment and the work finally proposes a basic methodological approach to Information Systems conceptual specification.

Elizabeth de Jesus Maragno CRIPPA. "Um método para composição de módulos de sistemas de programação". M.Sc. Diss. Presentation: 25/08/78 149 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work presents a methodology for the design of program modules based on a fundamental specification expressed in PSL. The implementation of the methodology uses the concept of matrix algebra for the grouping of process and files and for the evaluation of the reduction of the transport volume produced by those groupings.

Fernando Antonio Frota PARENTE. "Auditoria de sistemas automatizados". M.Sc. Diss. Presentation: 11/12/78 176 p. Advisor: Arndt von Staa

Abstract: This dissertation was elaborated considering auditing within the context of automated information systems. It includes a theoretical appraisal trying to show the needs, definition and operating area of automated systems auditing. This dissertation examines the several stages of systems auditing, some behavioral techniques and methods to be applied in these several stages. In conclusion it presents a methodology which aims to develop some audit tasks for automated systems.

Helena Maria Barbosa do AMARAL. "Estudo de um modelo de redes semânticas para banco de dados". M.Sc. Diss. Presentation: 15/12/78 205 p. Advisor: Rubens Nascimento Melo

Abstract: This work is a critical study of the Semantic Network Model of Data Bases, proposed by Nicholas D. Roussopolos. The basic concepts were explained and compared with other models. We elaborate an example of the model's practical application and show the advantages to utilize this model. We present the problem found in the construction of the example, suggest solutions for some of these problems and relate those which require more detailed studies to be resolved.

Hernani Aquini F. CHAVES. "Mapas batimétricos - problemas de construção e análise automática". M.Sc. Diss. Presentation: 31/0178 223 p. Advisor: Antonio Cesar Olinto de Oliveira

Abstract: Mechanical drawing of isoplets is a two-phase process: griding and contouring. The first one is the core of any machine contouring system and depends upon samples distribution, spatial structure of mapping variable, map scale and projection, mapping purpose, and desired estimation precision. The SURFACE II graphic system has three griding procedures: weighted mean, dip projection, and Universal Kringing, the late based on Matthernon's regionalized variable theory, and the only one that takes account of the spatial structure of the variable. Underway marine geophysical data are characterized by clustering of points on ship tracks, irregularly spaced with odd patterns, making it difficult to use computer contouring. In spite of this, machine drawing isoplets are more objective and can save a lot of mechanical work and time for geologists. In order to find out major difficulties in computer using to draw marine geophysical isoplet maps, bathymetric charts of three Brazilian Continental Margin areas were constructed using REMAC project Geophysical Data Bank: 1) Albardao, with high sampling density, 2) South Continental Shelf, with rectangular sampling patterns, and 3) the São Paulo Plateau, with varied and irregular sampling density. The final product precision depends upon the spatial sampling distribution, griding method, and survey procedure. Once the "best" map is obtained, numerical analysis of the of the grid matrix can be used to identify regional trend and local anomalies. The obtained results by the three griding algorithms are statistically equivalent in honoring the original data point, but differences between estimations are autocorrelated and their maps show that estimation by Universal Kriging is the closest to reality, while the others tend to smooth the topography. The machine-contoured maps of the three areas agree with the manual contoured one. The better definition of the surface topography estimated by Universal Kriging justifies the increase in computer time to use it. Big areas should be processed by parts, in order to reduce individual run computer time. The addition of a few control points among the survey lines assures the resolution of the U.K. system equations for more nodes in the matrix.

João Dias QUEIROZ. "Uma metodologia para elaboração de propostas de desenvolvimento de sistemas de informação". M.Sc. Diss. Presentation: 17/03/78 [irr.] p. Advisor: Arndt von Staa

Abstract: After placing this work within an information system development context, we suggest a method for the construction of development proposals for computerized information systems. This method is compared with some other known techniques - BSP, SADT, HIPO, PSL/PSA - which we briefly described in this text. An example of a Development Proposal is presented. This dissertation ends with a critical comparison of the proposed method with the other mentioned techniques.

João Victor LELLIS. "Sistemas de dados distribuídos". M.Sc. Diss. Presentation: 11/12/78 123 p. Advisor: Arndt von Staa

Abstract: Distributed data system problems are identified. In order to achieve this, information system concepts are defined, both from the infological and datalogical points of view. The adequacy of distributed systems as a solution to these information system questions is examined. The implementation requirements needed for distributed systems are also examined.

Jorge KAKITANI. "Estudo da área de estabilidade de certos métodos cíclicos". M.Sc. Diss. Presentation: 28/07/78 91 p. Advisor: Therezinha da Costa Ferreira Chaves

Abstract: The cyclic methods, introduced in 1971 by Donelson and Hansen, are well suited for the acquisition of high convergence order. Using these ideas and creating a new theoretical frame for them Albrecht [3] defines a new class of cyclic methods, the A methods, very adequate for fixed-step discretization algorithms. This work studies the Stability Area of four classes of cyclic methods comparing them from the point of view of order increment versus the extension of the Stability Area.

Leacir Nogueira BASTOS. "Projeto lógico de uma calculadora: especificação e simulação de um microprocessador de 4 bits e implementação das operações mais importantes da calculadora". M.Sc. Diss. Presentation: 27/01/78 115 p. Advisor: Albrecht Karl von Plehwe

Abstract: We presented in this work a logical project of an electronic calculator and the specification of a 4-bit microprocessor, devised to serve as support for the implementations of the calculator functions. In the calculator project, basically, we define its structure, its functions, and the manner of operation of each function and the diagram of the information input. In the microprocessor project, basically, we defined the dimension of its registers and its instruction set. In addition to this, we presented a simulator for the microprocessor functions, constructed with the objective to test the implemented functions.

Leonardo Lellis Pereira LEITE. "Análise e projeto de arquitetura de um sistema de gerência de banco de dados". M.Sc. Diss. Presentation: 21/12/78 248 p. Advisor: Rubens Nascimento Melo

Abstract: This study consists of the analysis and the design of an architecture for a database management system. At first it considers the aspects that make necessary the use of such systems in information systems; afterwards it establishes some concepts which determine the functional aspects of the design architecture. It also analyses some known systems according to those concepts, and finally it presents the functional specification of a database management system.

Luiz Carlos Ribeiro BRANDÃO. "Ferramentas para implementação de sistemas de informações apoiados em banco de dados a partir da sua especificação conceitual". M.Sc. Diss. Presentation: 17/03/78 165 p. Advisor: Rubens Nascimento Melo

Abstract: This work extends the facilities of a particular DBMS. The extension may also be viewed as a mapping between (part of) the Conceptual Specification of a System and its implementation using the already existing facilities. The combination of a pre processor and a macro generator, as used in this work, allows different alternatives for this mapping. One particular alternative is showed in detail.

Luiz Paulo Leal da Gama MALCHER. "Um estudo sobre índices secundários em sistemas de banco de dados". M.Sc. Diss. Presentation: 21/08/78 130 p. Advisor: Rubens Nascimento Melo

Abstract: The use of secondary indexes in Data Base Systems is very important. These are three significant problems in this area: index selection, choice of simple or combined index strategy, and index implementation. This work analyses each problem separately. Several methods of index selection are described and compared. The option between simple and combined index is also analyzed. The implementation of secondary indexes is studied under two aspects: directory accesses methods and index organization. An example where indexes are selected and a particular index structure is adopted is also presented.

Marcia Pitangueira TAVARES. "Aplicação de simulação discreta no controle de interseções urbanas". M.Sc. Diss. Presentation: 22/02/78 153 p. Advisor: Heitor Luiz Murat de Meirelles Quintella

Abstract: The objective of this work is the design and experimentation of modular software for modeling of urban traffic systems. Two simulation models to control the traffic flow in urban intersections are presented. The effect of the analyzed by means of statistic distribution and of the average wait times to enter the intersection, evaluated separately for each model. Both models are coded in GPSS of IBM 370/165 system.

Mário MARTINS. "Análise e implementação de um algoritmo de criação e pesquisa de tabelas de símbolos para tradutores". M.Sc. Diss. Presentation: 28/08/78 111 p. Advisor: Gaston H. Gonnet

Abstract: This thesis analyzes, from a theoretical point of view, and implements the creation and searching procedures of symbol tables using external storage intended for compilers. For this purpose we determine the relations between the various parameters of the table to optimize different aspects of its behavior. In one example we show how these results apply.

Paulo Cesar Ferreira MULATINHO. "Metodologia para planejamento de sistemas de informação". M.Sc. Diss. Presentation: 28/12/78 p. Advisor: Heitor Luiz Murat de Meirelles Quintella

Note: Not available.

Ricardo Ladeira MAZZINI. "Tipos de dados: um estudo de especificação formal por meio de algoritmos de Markov". M.Sc. Diss. Presentation: 14/04/78 95 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work introduces the concept of formal specification of data types through the use of Markov Algorithms. Within this perspective, the several instances of the structure of a data type are represented by symbol chains, and the type characteristic operations expressed through modifications in this chains; these modifications are accomplished by the use of Markov algorithms.

Roberto Pires VASQUES. "Desenvolvimento, implementação, descrição lógica e documentação de um sistema de banco de dados". M.Sc. Diss. Presentation: 02/02/78 2 vol. Advisor: Antonio Luz Furtado

Abstract: The development of an implementation software is one of the first phases in a project involving data base. Three structures of fundamental files and one of software and the procedures which allow managing these structures are included in the implemented software described below. The software is, in principle, compatible with any of the three fundamental models: hierarchical, network, relational.

Solange de Lima ASTEGGIANO. "Análise de sistemas: uma abordagem sistêmica". M.Sc. Diss. Presentation: 09/03/78 76 p. Advisor: Luiz Carlos Sá Carvalho

Abstract: The present work introduces some basic concepts related to the area of systems analysis (and, by extension, to the whole area of information systems). These concepts have to do with the notions of systems, information and language. Based on the proposed concept formulations and in Langefors' work, we present a methodological approach to systems analysis. The methodology is used as a way of exhibiting the advantages and viability of an enhancement of the systematization of systems analysis.

Sonia Maria Miguel PASSOS. "Desenvolvimento, implementação e avaliação da eficiência de um sistema de banco de dados". M.Sc. Diss. Presentation: 02/02/78 139 p. Advisor: Antonio Luz Furtado

Abstract: This work is a System of Performance Evaluation (SAE) of a System of DataBase (SBD). The analysis of the results get of SAE gives to the users elements that allow to adapt the SBD to his necessities and to get a gather efficiency; this analysis also give us a support to modification into

versions futures of SBD. This SAE is a system defined specially about the SBD, which is the work of thesis of ROBERTO PIRES VASQUES and was presented at the same time as this work.

Sóstenes Apolos da SILVA. "Uma metodologia automatizável para geração de documentos consistentes". M.Sc. Diss. Presentation: 22/06/78 146 p. Advisor: Arndt von Staa

Abstract: The documents describing a system usually present intersections. To avoid inconsistency of the documentation when introducing changes in a given document, all documents which partake of the changed part must also be updated. In this dissertation a methodology is proposed to aid the maintenance of the documentation. This methodology maintains all data giving rise to documents in a documentation data base. Specific documents are then copies of pre-determined portions of this data base. Inconsistencies are avoided due to the single occurrence of documentation elements.

Valneide CABRAL. "Em busca de uma linguagem de especificação dos requisitos para o projeto de sistemas de informação apoiados em banco de dados". M.Sc. Diss. Presentation: 23/08/78 94 p. Advisor: Rubens Nascimento Melo

Abstract: This work outlines a requirement statement language oriented to information system supported by databases. The concepts and terms used by such a language come from the infological approach and the recommendations of the ANSI/SPARC. The need of such a language, the concepts and terms are also analyzed. Part of the syntax, especially in the description of the dynamic aspects of the system, was borrowed from PSL. An example using the language is also included.

1979

Adelio Hiromiti YANO. "Um ensaio sobre Lambda Cálculo e combinadores". M.Sc. Diss. Presentation: 07/08/79 102 p. Advisor: Roberto Lins de Carvalho

Abstract: The α-β-η-λ-calculus and Combinatory theories are presented in a didactic way, including the demonstration of Church-Rosser's theorem by Barendregt for α-β-η-λ-calculus. We present an extension of this demonstration for α-β-η-λ-calculus. Besides that, we have no restriction when substituting variables in a lambda-expression. Such restriction, generally founded in the literature, which prejudices the rigor of the demonstrations.

Ademar Raimundo M. TEIXEIRA. "Implementação de um filtro léxico de propósito geral: um estudo experimental em engenharia de software". M.Sc. Diss. Presentation: 31/07/79 [irr.] p. Advisor: Arndt von Staa

Abstract: The first activity to be performed when translating is to decompose the input stream into lexical units. Some of these will be of no value for alter processing phases, e.g. comments. A lexical filter is a routine that separated the source program into lexical units, discarding the useless one and compressing the useful ones by means of a symbol table, returning standard identifications of short and fixed length. This dissertation attempts to show the applicability of software engineering concepts to non-trivial programs, through the implementation of a general-purpose lexical filter.

Anselmo FRIZERA JR. "Sistemas de informação integráveis". M.Sc. Diss. Presentation: 11/07/79 97 p. Advisor: Jayme Simão Portugal Goldstein (NSI/PUC/RJ)

Abstract: In this work we propose a technique that, given a conceptual specification of an Integrated Information System, makes it available to its user the necessary information to the development of applications as well as for decision making processes. A DBMS emulation of some functions, resulting from this proceeding, will serve as an intermediate strategy for installations which are in a phase of equipment expansion or of Information Systems definition.

Atendolfo Pereda BORQUEZ. "Métodos de descrição de tipos de dados e estruturas de dados". Ph.D. Thesis Presentation: 07/12/79 147 p. Advisor: Roberto Lins de Carvalho

Abstract: This work proposes a conceptual unification of the different methodologies used to describe data types and data structures. This conception is based on the "degree of abstraction" and on the point of view used to visualize the domain of data used by each description method. To meet this objective, it is proposed to classify the methods into four groups: intentional descriptions, extensional descriptions, generative descriptions and operational descriptions. Examples are provided for each class of description, and strategies are suggested to prove the equivalence between descriptions belonging to different views.

Cid Carvalho MIRANDA JR. "Instrumentos gerenciais na evolução da função processamento de dados". M.Sc. Diss. Presentation: 14/08/79 54 p. Advisor: Heitor Luiz Murat de Meirelles Quintella

Abstract: Electronic Data Processing is focused as a functional area of a company, characterized by a specific evolutionary starting in the first application and growing through total integration. Three theories of evolution are analyzed: economical, functional and maturity of utilization. It is done a comparison between them, with a proposition of an integrated view. Following, it is analyzed a set of relevant management procedures that may be implemented in order to achieve a proper evolutionary process. Each procedure is evaluated according its objectives, characteristics and evolution dynamics. Finally, it is proposed a relationship between the integrated evolution picture and the applicability of each management procedure within each evolutionary stage.

Claudia Maria Bauzer MEDEIROS. "Estudo comparativo de técnicas de teste de programas". M.Sc. Diss. Presentation: 27/12/79 308 p. Advisor: Carlos José Pereira de Lucena

Abstract: This paper contains a comparative study of three program test data generation techniques. The efficiency of each technique in pointing out some of the most common programming errors is given special attention. Conclusions stress differences among these techniques in treating specific problems in the area and emphasize the obstacles to their automation.

Claudio Andrade TEIXEIRA. "Um sistema de orçamento-programa para orgãos da administração direta apoiado em banco de dados". M.Sc. Diss. Presentation: 26/07/79 178 p. Advisor: Antonio Luz Furtado

Abstract: After analyzing the current government agencies budget-programming systems a alternative database integrated system is suggested in order to improve the organizational management information system.

Cleto Prata CRISÓSTOMO. "Um estudo sobre a função do administrador de dados". M.Sc. Diss. Presentation: 28/09/79 150 p. Advisor: Rubens Nascimento Melo

Abstract: The goal of this work is to present a methodology for data administration implementation and the use of a data dictionary system as a tool for this function. First, the main concepts of the data administration function and data dictionary systems are presented. In this presentation, emphasis is given to the clarification of concepts and to the standardization of important terms. Finally, a methodology is proposed in parallel with the presentation of an example of its application in a particular enterprise.

Eduardo Taquece MOURA. "Manutenção de software". M.Sc. Diss. Presentation: 18/07/79 173 p. Advisor: Arndt von Staa

Abstract: The software maintenance problem is stated within an actual context. Basic concepts about software quality and its life cycle are presented. After this, the problem related to the introduction of changes are examined. Procedures, techniques and tools aiming at the easy development of maintenance of already implemented software are studied.

Estephan Leitão LAGE. "Especificações físicas para a construção de um cross-compiler". M.Sc. Diss. Presentation: 27/07/79 200 p. Advisor: Antonio Luz Furtado

Abstract: The objective of this work is to set up the physical specifications to implement a CROSS COMPILER for an ALGOL like language. Based in an already known logical specification for such compiler, we carefully study the concepts, techniques and available tools in order to get the mentioned specifications. After this, the next step is to implement the compiler

Fernando Malburg da SILVEIRA. "Controle de processos por sistemas digitais". M.Sc. Diss. Presentation: 18/07/79 302 p. Advisor: Arndt von Staa

Abstract: Process Control by digital computers is a technology resulting from the interaction of several disciplines, as for instance Control Engineering, Software Engineering, Operational Research, Instrumentation, Computer Architecture and others. Its field of applications is notably growing in industries, armed forces and laboratories. Currently, the demand of specialized technicians on digital control is expanding rapidly. This justifies a greater care of the post-graduating students in Informatics with that technology. It also stimulates the writing of a didactic text covering the main components of the matter: the basic control principles and the real-time software/hardware requirements and characteristics for Process Control applications. The purpose of this work is to produce such text, didactically summarizing the most relevant information concerning the matter, and putting together data rarely found unified under the Informatics point of view, in current publications.

Geraldo Machado COSTA. "Um estudo sobre a especificação do sincronismo de processo concorrentes". M.Sc. Diss. Presentation: 26/03/79 61 p. Advisor: Carlos José Pereira de Lucena

Abstract: A method of expressing synchronization on shared resources by regular expressions is presented and the motivations, which led to this method, are explained. Path expressions and flow expressions, notations based on regular expressions, are defined and some of their properties are presented.

Gilberto Antunes TEIXEIRA. "Especificação formal de banco de dados e suas restrições de integridade". M.Sc. Diss. Presentation: 19/01/79 143 p. Advisor: Rubens Nascimento Melo

Abstract: This work analyzes critically the conceptual models proposed by Bo Sundgreen in "An Infological Approach to Data Bases", and by H. Biller & E. Neuhold in "Semantics of Data-Bases: The Semantics of Data Models", and it also presents a set of concepts and guide-lines which are necessary to model the "slice of reality" of interest to the users. The ideas presented by Chamberlin & Eswaram in "Functional Specification of a Subsystem for Data Base Integrity" are detailed by the definition of grammatical syntax rules which enable the formal specification of integrity assertions. Such rules are applied to the problem formulated by Prof. A. L. Furtado in "Complete and Compatible sets of update operations", demonstrating that the solution to the problem of cooperation among "basic operations" applied on a data base, is necessary to express the semantics of user model.

Horácio Melendez VILLALOBOS. "Um estudo sobre a geração de códigos por compiladores". M.Sc. Diss. Presentation: 31/10/79 93 p. Advisor: Arndt von Staa

Abstract: A formalism for the code generation phases within a compiler is described. The formalism departs from an abstract program tree generated during the analysis phase. Encoding methods for this abstract tree are shown. This formalism is illustrated with examples taken from several programming languages.

Isis D. L. Silva MELLO. "Macro e micro programação de um monitor de entrada e saída". M.Sc. Diss. Presentation: 06/08/79 130 p. Advisor: Albrecht Karl von Plehwe

Abstract: English abstract not provided.

Ivo Maurício R. de MAGALHÃES. "Um simulador para arquiteturas distribuídas utilizando micro processadores". M.Sc. Diss. Presentation: 28/09/79 177 p. Advisor: Arndt von Staa

Abstract: Not provided.

João Paulo VAZ. "Núcleo de sistema operacional para micro-computador Intel 8080". M.Sc. Diss. Presentation: 06/08/79 33 p. Advisor: Albrecht Karl von Plehwe

Abstract: A kernel is defined for a multi-level system designed to run on a INTEL 8080 based micro-computer. The implementation of the defined kernel is also showed. The kernel comprises the two lower levels of the system: CPU queue management is the only function performed by the first level; the second level implements inter-process communication, interruption handling, semaphores control and process control.

José Antonio F. MENDES. "Técnica de desenvolvimento de software confiável". M.Sc. Diss. Presentation: 16/06/79 157 p. Advisor: Arndt von Staa

Abstract: In this work the basic aspects of reliable software are discussed in a didactic form. Design and programming techniques, reliability models, debugging, testing, fault tolerant software, project management and human factors are considered. The main papers and books of the area are presented in an annotated bibliography.

José Augusto C. MAGALHÃES. "Técnicas para o projeto e a implementação de sistemas de software confiáveis". M.Sc. Diss. Presentation: 23/03/79 54 p. Advisor: Carlos José Pereira de Lucena

Abstract: This paper suggests a set of techniques that are applicable to the development of reliable software systems with particular stress being laid on the aspects of fault tolerance and intolerance. The paper also covers some basic means of error detection, fault treatment, damage assessment and error recovery. As an example of the techniques proposed the design of a system that is already in operation is presented and its particular reliability characteristics are analyzed.

José Geraldo A. C. CARVALHO. "Um método para automatização de um sistema de gerência de caixa: estudo de casos". M.Sc. Diss. Presentation|: 16/02/79 79 p. Advisor: Heitor Luiz Murat de Meirelles Quintella

Abstract: The report begins with a description of Cash Management problem considering Esso Brasileira de Petróleo S.A. specific's case, pointing out benefits resulting from accurate controls applied to it. The most frequent problems found by company's team in charge of Cash Management, mainly those related with banks, are here identified and analyzed. For each problem found, the following report present control suggestions as Informational Models, with the objective of providing fast and precise operating tools that help company on taking decisions. Finally, conclusion is presented, in order to generalize problems considered.

Julio Cesar S. P. LEITE. "Contabilidade de custos no desenvolvimento de software". M.Sc. Diss. Presentation: 23/03/79 144 p. Advisor: Arndt von Staa

Abstract: The high cost of software is known to be a reality. Facing this problem, this dissertation studies the following topics: an overview about Economics of Software; a survey of the most important works in the area of Estimating costs of Software; a proposition of a technique that gather information to a Cost Data Base. This technique is based on the principals of Cost Accounting, with records of productivity in the construction of software.

Margarida Maria Bereta PION. "Sistema interativo para a construção de modelos minimais no universo de Herbrand". M.Sc. Diss. Presentation: 06/02/79 180 p. Advisor: Paulo Augusto Silva Veloso

Abstract: This work presents a SPTIBOL implementation of a system that helps analyzing axiomatizations for data structures and data types. This system guides the construction of a minimal model on the Herbrand universe obtained by skolemizing the axioms. It also includes a theorem prover based on J. A. Robinson's unification algorithm. So, it can be used as a basis for semi-automatic theorem provers. The system was designed so as to be used by researchers without any programming experience.

Mario Antonio MONTEIRO. "Transmissão automática de mensagens em redes de computadores". M.Sc. Diss. Presentation: 18/07/79 294 p. Advisor: Daniel Alberto Menascé

Abstract: This work deals with the study of automatic transmissions of messages in hard copy through a computer communications network. First, we present a survey on the basic concepts in teleprocessing and computer networks in order to make this work self contained. Following, we investigate the feasibility of a system to transmit written messages automatically, implemented by a computer communications network. The system is carefully discussed in terms of data specifications, functional and operational requirements, protocols definitions, topology calculations, software design and hardware characteristics. We are looking for a system that should be practical, feasible and very cost effective. For this last reason we direct our attention toward the possibility to use it in microprocessor technology. The work concludes with the presentation of a general methodology for developing such a system. We presume that a system, like the one discussed in this dissertation, should be very useful to reduce cost and increase efficiency in large corporations and in the communications services of government agencies, like the Post Office or the Armed Forces.

Pedro Luiz STEINBRUCH. "Um estudo sobre modularização de programas". M.Sc. Diss. Presentation: 23/04/79 p. Advisor: Antonio Luz Furtado

Note: Not available.

Ronaldo Ribeiro FREITAS. "Metodologia para seleção de sistemas de gerenciamento de banco de dados". M.Sc. Diss. Presentation: 26/07/79 306 p. Advisor: Antonio Luz Furtado

Abstract: The implementation of a Data Base System is a complex process that involves the allocation of human and material resources larger than those usually needed by the development of conventional software systems projects. The Data Base project affects every aspect of an Organization or enterprise. It implies on data processing activities integration, for several users. The success in the Data Base implementation requires careful planning, execution and control of actions. The selection of a Data Base Management System (DBMS) adequate, as an effective tool in assisting the Data Base Administrator in his functions, is a critical task in the implementation process. This text provides a practical and systematic method, and a framework, to conduct the feasibility study of the Data Base approach, and the planning and execution of activities inherent to the identification of the Organization data structuring controlling and processing requirements, specification of the desirable set of DBMS characteristics and capabilities, construction of profiles and evaluation of generalized packages available in the software market, and finally the selection and acquisition of the best DBMS as a result of the computation of figures of merit and performance evaluation of the candidate systems.

Therezinha da Costa Ferreira CHAVES. "Métodos cíclicos com extensa região de estabilidade". Ph.D. Thesis Presentation: 29/03/79 78 p. Advisor: Peter Albrecht

Abstract: Our principal aim is to study the region of stability of k-step M-cyclic methods, trying to get high order of convergence together large region of stability. We show the existence of methods, with k=M=3, which have high order of convergence q= 2k=6, and whose real region of stability besides to be small is equivalent to those ones of Adams-Moulton's methods, for q=6 or k=3. After we create methods with lower order of convergence (for M=k=3, q=5 and for M=k=4 q=6) but now stiff stable.

Weber ALVES. "Especificações lógicas para a construção de um 'Cross-Compiler'". M.Sc. Diss. Presentation: 27/07/79 95 p. Advisor: Antonio Luz Furtado

Abstract: In small size computers, we have noted the excessive time in compilation and the main reason for that is the lack of available space in main memory. One possible solution for this problem deals with the utilization of a compiler that, running in a large computer, can generate object code ready to be executed in a small computer. The goal of this work is carefully study the required objectives and to obtain the logical specifications for such compiler, regarding an ALGOL like language.

1980

Álcio José Cintra LAPA. "Estudo e aplicação de técnicas analíticas na avaliação de desempenho de sistemas de computação". M.Sc. Diss. Presentation: 12/08/80 219 p. Advisor: Daniel Alberto Menascé

Abstract: Queueing network models are among the most cost effective tools for performance evaluation of modern computer systems. This work presents a detailed survey of several analytic techniques for performance evaluation, namely: Operational Analysis, Stochastic Queueing Networks, Decomposition and Diffusion Approximations. Some of them were applied, as a case study, to the performance evaluation and capacity planning of an actual computer system.

Arlindo Jorge da SILVA. "REL-MUMPS: Uma interface relacional para o MUMPS". M.Sc. Diss. Presentation: 29/09/80 117 p. Advisor: Rubens Nascimento Melo

Abstract: Relational data model has been the principal direction in the research of data base interfaces for data manipulation because of its data independence and the possibility of use of a non procedural language. This work is a proposal of a relational interface for the MUMPS system with following features-Data Definition Language with the capabilities to define and maintain a Relational Data Base Schema, Data Manipulation Language with the capabilities to retrieval and update the data base and Relational Utilities to support the data base administration.

Carlos Andrade DUARTE. "Em busca de uma metodologia de desenvolvimento de sistemas em ambiente de banco de dados". M.Sc. Diss. Presentation: 25/07/80 103 p. Advisor: Rubens Nascimento Melo

Abstract: The objective of this dissertation is to present a series of procedures and/or techniques towards the implementation of a methodology for systems development in a data base environment. Existing methodologies are analyzed for the clarification of concepts and standardization on the use of the terminology, assuring and adequate understanding of the topic. The work emphasizes Data Analysis as the basis for logical data base design and for definition of schemata. It also shows the relationship between Data and functional analysis. Finally, the appropriate procedures and/or techniques for our established objective are detailed.

Clésio Saraiva dos SANTOS. "Caracterização sistemática de restrições de integridade em banco de dados". Ph.D. Thesis Presentation: 18/10/80 149 p. Advisor: Antonio Luz Furtado

Abstract: The present work is a systematic study on integrity constraints in data bases, including a proposal for their classification. An Entity-Relationship model, extended by the definition of abstraction mechanisms, is used as the data base model. A many-sorted first order predicate calculus is used as the specification language. Problems related to the use of such a formalism for the specification and manipulation of data bases are also discussed.

David PALATNIK. "Projeto de um emulador para sistema baseado em microprocessador de terminais IBM voltados para entrada remota de serviços". M.Sc. Diss. Presentation: 24/04/80 125 p. Advisor: Michael Anthony Stanton

Abstract: A description is presented of the program RJEIBM, which enables the COBRA-300 microcomputer to emulate the following IBM Remote Job Entry (RJE) terminals: 2770, 2780 and 3780. This description is preceded by a discussion of the following characteristics of digital data communications: links, protocols and modulation.

Francisco Pedroso FALCÃO. "Um Cross-Assembler para o microprocessador Intel 8086". M.Sc. Diss Presentation: 21/07/80 113 p. Advisor: Albrecht Karl von Plehwe

Abstract: The microprocessors usage in growing sophisticated application justifies the CROSS-ASSEMBLERS and CROSS-COMPILERS construction. These resources give facilities to software development and debugging, through the use of another computer. Present work describes how was developed and implemented CROSS86, a Cross-Assembler for INTEL s 8086 microprocessor.

Geraldo Moraes MEDEIROS. "Uma metodologia de gerência de programação". M.Sc. Diss. Presentation: 30/09/80 180 p. Advisor: Rubens Nascimento Melo

Abstract: We consider that the great majority of our Data Processing installations present a low productivity problem, and that problem refers to new systems and programs, mainly because of high indicator maintenance, our work have the purpose: to analyze the software development/maintenance of the application in the installation; to suggest a new functional structure which helps us to minimize these problems; to show a programming method based in resents programming methodology; to adopt a control programming system with the purpose to evaluate the successfulness of this methodology, and to detect the problems out of programming, responsible to retard the programs development and projects in the installation.

José Alberto CHAHON. "Modelos analíticos e de simulação para sistemas de filas com e sem prioridade". M.Sc. Diss. Presentation: 20/10/80 143 p. Advisor: Daniel Alberto Menascé

Abstract: It is undeniable the great importance of studying queuing systems that arise from overpopulation and technological development. Analytical models to provide the average time that a customer waits in the queue were developed in this work. The proposed queuing systems are of the M M m type, with priority oriented queuing disciplines. Both static and dynamic priorities, and also nonpreemptive and preemptive resume disciplines were considered. With the purpose of solving the formulated queuing systems, it has been made a general outline about the application of techniques concerning the Theory of Queuing Systems, which served as a basis for the construction of analytical models. Finally, discrete simulation models, built in GPSS were used as a tool to verify the correctness of all analytical models developed for the queuing systems taken into consideration.

José Bezerra de MORAIS. "Auditoria de sistemas através do computador". M.Sc. Diss. Presentation: 05/12/80 163 p. Advisor: Arndt von Staa

Abstract: This thesis presents an analysis of the principal features of auditing in Electronic Data Processing - EDP. The importance of systems audit "through" the computer is emphasized and explained in detail, along with a description of several techniques and tools available to the auditor in his work. Viewed as the main purpose of this study, systems audit "through" the computer is introduced as an important element in the level of training necessary to the auditor. A methodology is also presented which proves useful to auditors responsible for the examination and evaluation of EDP systems. This methodology encompasses both the development process of new systems as well as those systems already in use.

Lucas Mortimer MACEDO. "Projeto e implementação de banco de dados considerando restrições de integridade e segurança". M.Sc. Diss. Presentation: 23/04/80 54 [+78] p. Advisor: Antonio Luz Furtado

Abstract: This thesis is an example of data base design in the relational model, through a methodology, which takes into consideration: data integrity; access security; operational facilities for the users. It also presents the specification and implementation of the update and query transactions and other functions, using the HYADES data base management system.

Marcelo Thomé CAMINHA. "Desenvolvimento estruturado de sistemas interativos: um estudo de caso". M.Sc. Diss. Presentation: 30/09/80 p. Advisor: Rubens Nascimento Melo

Note: Not available.

Maria Carolina MONARD. "Projeto e análise de algoritmos de classificação externa baseados na estratégia de QUICKSORT". Ph.D. Thesis Presentation: 04/02/80 133 p. Advisor: Gaston H. Gonnet

Abstract: One of the topics which arises frequently in programming is sorting when the items are kept in the computer s memory or external sorting, when the items are held mainly in external memory. The problems to be solved in external sorting are quite different than those in external sorting. The main purpose of this thesis is a detailed analysis of a new external sorting algorithm based on the technique of "divide and conquer" which sorts in situs a file held in random access secondary memory. An analysis of its worst case, best case, upper bound of the average case and its average case are presented as well as the influence of the blocking factor on sorting.

Maria Elisa F. T. JAGUARIBE. "Um estudo comparativo entre o sistema PSL/PSA e sistema de dicionário de dados". M.Sc. Diss. Presentation: 12/09/80 196 p. Advisor: Rubens Nascimento Melo

Abstract: Not provided.

Mário Belisário de CARVALHO FILHO. "Um estudo sobre desenvolvimento de sistemas: a fase de definição de requisitos". M.Sc. Diss. Presentation: 25/07/80 131 p. Advisor: Arndt von Staa

Abstract: The aim of this work is to present concepts on software systems requirements in order to point out the purposes of the first phase of software development: the Requirements Definition. Five distinct steps, each with its own features, are suggested in order to achieve those purposes. For each step we suggest a documentation set along with some comments on the main characteristics of a well-defined specification and a summary of some of the actual methods for analysis and requirements definition.

Oscar Ernesto LANDES. "Recuperação de falhas em bancos de dados distribuídos: especificação de um componente de armazenamento confiável". M.Sc. Diss. Presentation: 18/01/80 248 p. Advisor: Daniel Alberto Menascé

Abstract: The property of a database management system to recover from failures, preserving the database integrity is extremely important. A survey of several techniques of crash recovery in database management systems is presented in this work. Next, the idea contained in this survey are integrated and expanded in order to allow for the complete specification of a storage component of a distributed database management system. The storage component is the portion of the DBMS which is responsible for accessing the data in secondary storage and for the implementation of crash recovery mechanisms. The specification of the storage component is given in "PASCAL-like" . The performance evaluation of the component is presented in terms of average number of accesses to secondary storage on a per procedure basis. Finally, it is shown here how the storage component being proposed can be used to implement a distributed file system.

Oscar Sérgio Marques CARDIM. "Análise e crítica de tópicos relevantes na construção e operação de sistemas de informação". M.Sc. Diss. Presentation: 31/03/80 139 p. Advisor: Arndt von Staa

Abstract: The techniques for the development of Information Systems are still in their infancy. Recent studies show that existing specification and programming tools are not conducing, as expected, to systems processing a high quality levels. Quality in itself requires much more study. The objective of this dissertation is to obtain more insight into properties of Information Systems, not only from the technical point of view but also from that of the end user.

Osmar Boavista CUNHA JUNIOR. "Avaliação de projetos de sistemas". M.Sc. Diss. Presentation: 25/07/80 116 p. Advisor: Arndt von Staa

Abstract: This work analyzes the System Design evaluation process taking into account the peculiarities of Software development. Starting from a basic financial Cost/Benefits analysis of a given System, a Technical, Administrative and Economical validation is derived, aiming at the identification of

uncertainty components. A complementary study of Project Sensibility introduces this uncertainty on the financial analysis, establishing the environment for management decisions in Automated Systems Project.

Paulo Alberto AZEREDO. "Tratamento de exceções em ambientes modulares". Ph.D. Thesis Presentation: 05/12/80 194 p. Advisor: Arndt von Staa

Abstract: The exception handling problem is studied, especially in the case of modular environments. The problem is characterized, and the requirements that a mechanism for handling exceptions in such environments must have are identified. Current approaches for dealing with the problem are analyzed and evaluated with respect to those requirements. A mechanism for handling exceptional conditions in modular environments that fits the requirements is proposed. The main characteristics of the mechanisms are its applicability in modular environments and the enforcement of verifiability.

Paulo KACELNIK. "Aplicação de métodos cíclicos a equações STIFF". M.Sc. Diss. Presentation: 29/08/80 148 p. Advisor: Gerhard Honig

Abstract: The cyclic methods present advantages over the multistep methods, generally used for the numerical solution of differential equations, likewise larger convergence order and stability region. Stiff equations appear in a great range of applications like Circuit Theory, flow of a chemical reacting gas, etc. Properties of cyclic methods, definitions, examples of stiff equations and a selection of stiff-stable cyclic methods for $K \leq 4$ and $M \leq 4$ will be presented. Each one of these methods is checked against a stiff equation, in order to verify its behavior. A suggestion is given for the generation of stiff-stable cyclic methods.

Robério da Cunha COUTINHO. "Sistema básico de comunicação entre processos para uma rede distribuída de microprocessadores: máquina GMB dirigida por dados". M.Sc. Diss. Presentation: 29/07/80 266 p. Advisors: Wilson Vicente Ruggiero (USP/SP) and Daniel Alberto Menascé

Abstract: Much recent works have shown the enormous advantages to be gained by the implementation of distributed architectures using networks of multi-microprocessors, which have become economically viable due to the low cost of VLSI technology. The new architectural concepts have been accompanied by the creation of new formal models of computation. Starting from the description of the GMB Model, we present a programming nucleus structured for basic support to the distributed data driven GMB interpreter. Relevant services are defined; central amongst these is an effective system for inter-process communication using the exchange of message without sharing memory. This mechanism is also considered a fundamental component for any distributed Operating System Kernel, thus expanding the scope of its application. The text also serves as a complete introduction to the material under discussion.

Rosa Maria Martins LADEIRA. "Uma arquitetura alternativa para G-10". M.Sc. Diss. Presentation: 27/03/80 86 p. Advisor: Albert von Plehwe

Abstract: A microprogramming development system to G-10 had been created in this work. It permits the flexibility of defining and testing new architectures for specific uses.

Talia Chaves Buarque de HOLANDA. "Projeto e desenvolvimento estruturado de um sistema de programação: estudo de caso". M.Sc. Diss. Presentation: 12/03/80 211 p. Advisor: Carlos José Pereira de Lucena

Abstract: This paper shows the applicability and advantages of the use of Composite Design combined with Structured Programming Techniques in the development of a programming system. A Corporate Model for financial planning is used as example. This software must be able to fit the use by different enterprises, therefore demanding a flexible programming, easy to maintain, reliable and easily changeable or extendable at low costs.

Virgílio Augusto F. ALMEIDA. "Um modelo para o planejamento de capacidade de sistemas de computação". M.Sc. Diss. Presentation: 09/09/80 93 p. Advisor: Daniel Alberto Menascé

Abstract: Capacity planning of computer systems requires an adequate tool to predict the performance of a data processing installation under several possible configurations. This dissertation presents such a tool based on queuing network analytic models and an operational analysis theory. Taking as input parameters which characterize the workload and hardware and the software of the computer system, the model calculates several measures of interest to the performance analyst.

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Antonio BRZEZINSKI. "Um modelo de implementação de um subconjunto da linguagem ADA". M.Sc. Diss. Presentation: 24/04/81 306 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work describes a implementation model for a subset of the programming language ADA, using stack as main structure. The following characteristics of the language are studied: blocks, subprograms, modules and dynamic allocation. The implementation of blocks is similar to Algol 60. A detailed example shows how the implementation of and ADA program behaves with respect to this kind of the structure, and an access algorithm to names is developed in environment of the block. In ADA there are two kinds of subprograms: non-limited subprogram and limited program. The mainly concern is with the latter. Simulations using static chain and display of the implementation of ADA programs that contain subprograms are shown. Algorithms to access names in such environment are also developed. Modules are show in the following forms: named collection of declarations, groups of related subprograms, and encapsulated data types. For each form; examples are used to show its implementation. Access Algorithms to names are also developed in such environment. An Algorithm for memory allocation for such modules is developed. The facility to specify the size of the "heap" memory that contains the dynamic variables is a novelty in ADA. An example, which contains access types is analyzed in detail. Finally, are presented some conclusions and suggestions for further works in ADA programming language.

Antonio Rubens Anciães AMARAL FILHO. "Avaliação de desempenho de sistemas do banco de dados através da técnica de medição". M.Sc. Diss. Presentation: 02/09/81 165 p. Advisor: Marco Antonio Casanova

Abstract: Database technology has been gaining wide acceptance among data processing specialists and the users community. If this tendency remains unchanged, the number of applications that do not use databases will decrease considerably, which implies that the performance of database systems will influence more and more the behavior of data processing systems. Because of its flexibility, a database environment allows not only changes in the database schema, but also the constant addition of new classes of users. However, even though both factors may generate the response time of the system, very little attention has been devoted to database system performance evaluation. We propose in this thesis a set of performance indexes and parameters which are tuned to database systems. These indexes and parameters are organized according to a performance evaluation model following the measurement techniques. We also describe a specification of a performance measurement system. Finally, we present performance evaluation results obtained from experiments with a concrete database system.

Celso Teixeira de SOUZA. "O enfoque de entidades e relacionamentos na análise estruturada de sistemas". M.Sc. Diss. Presentation: 24/02/81 145 p Advisor: Rubens Nascimento Melo

Abstract: This work presents an application of the Entity Relationship model in Structured Systems Analysis and Design. It shows how the system processes may be easily identified form the information modeling in terms of the entity and relationship concepts. On the other hand the analysis of the processes allows the right adjustment on the initial modeling. Thus this work emphasizes the need of the interaction between Data Analysis in system development. An example of application of this method is also included.

Claudia Junqueira MAZZONI. "Um modelo para especificação e controle de qualidade de software". M.Sc. Diss. Presentation: 09/10/81 121 p. Advisor: Arndt von Staa

Abstract: Software quality is examined based on the main published works. The software quality characteristics introduced by these publications are described and analyzed. The study of the causes for the high costs of software systems has shown the importance of software quality contributes to the reduction of the average system life. A new organizational method of software quality is introduced, based on the practical aspects of product acceptance-evaluation, utilization and modification.

Claudio dos Santos BERTINI. "Aplicação do algoritmo de decomposição à implementação de um interface relacional". M.Sc. Diss. Presentation: 28/09/81 114 p. Advisor: Marco Antonio Casanova

Abstract: Given the increasing access to computing resources by untrained users from other professions, the current tendency is to develop languages that are easy to learn and use. This opposes the old tendency, however, the internal structure of man-machine interfaces grew in complexity considerably. This thesis focuses on the major problems of designing a high-level interface for relational databases. The interface adopted, Query-by-Example (QBE), is a high-level, interactive query language that is quite easy to use. A subject of QBE is first defined, as well as the generic syntax of a class of queries, called conjunctive queries. Then a detailed analysis of a method, called decomposition, for processing conjunctive queries is carried out. This thesis concludes with a brief discussion on variations of the decomposition method.

Elpio Luciano GOMES. "Gerência de configuração de software". M.Sc. Diss. Presentation: 04/08/81 304 p. Advisor: Arndt von Staa

Abstract: Software integrity is placed within the actual context. Basic concepts about Software Configuration Management are presented. Afterwards, Software Configuration Management functions and their application during the system's life cycle are studied. Several Software Configuration Management documents and tools are commented.

Eraldo Souza ROCHA. "Analisador sintático para prova de teorema". M.Sc. Diss. Presentation: 14/04/81 221 p. Advisor: Roberto Lins de Carvalho

Abstract: There has been a lot of research for elaboration of software to Theorem Proving. The motivation for this work was the need of elaboration of a trustful and complete program which would help the difficult task of manual Theorem Proving. So we are presenting the development of a software in this area named Syntactic Analyzer for Theorem Proving. The present work is of interest to future researchers that wish to continue on the elaboration of a wider software.

Francisco Edson Pinheiro PESSOA. "Programação com tipos de dados abstratos". M.Sc. Diss. Presentation: 13/03/81 144 p. Advisor: Paulo Augusto Silva Veloso

Abstract: Abstract data types have been claimed as a powerful tool in the development of programs. Its use provides an elegant construction of the program by factoring it into two parts: a program that manipulates an abstract data type and an implementation of this type in terms of some selected representation. Likewise, the correctness proof of the program is factored into a proof of the program that manipulates the abstract data type and in a proof of the correctness of the implementation of the data type. Both proofs require the use of a formal specification of the data type. Various approaches have been proposed in the literature for the specification of abstract data types. Among these, the algebraic approach has received special attention, hence its adoption in this work. The present work, that intends to be an introduction to the subject, deals with the relevant aspects concerning abstract data types (what they mean; how to specify them; how to prove their correctness; how to implement them) and how they are used in programming (abstract mechanisms in the current programming languages, design and proof of abstract programs.

Iziderio de Almeida MENDES. "Rede de computadores: protocolos no interior da rede de comunicação de dados, uma especificação". M.Sc. Diss. Presentation: 17/07/81 323 p. Advisor: Daniel Alberto Menascé

Abstract: Computer networks are being developed or designed by many countries, including Brazil, using the packet switching technology as a means of communication between computers and/or terminals. These networks use a hierarchy of protocols that there are inside the data communication network. These protocols are responsible for the accuracy and reliability in transferring data between source and destination switching nodes. To provide this facility, this level of hierarchy uses inter nodes trunks allied to a routing strategy and an end-to-end procedure between source-node and destination-node. This assures that packet sequencing is preserved and carries out the flow control in the network.

Starting from the detailed description of what a protocol is like and which functions it executes to assure the data exchangeability between processes that implement it, in an orderly manner, this work intends to identify, define and specify the protocols that will establish the transmission layer: the data communication network - RECOMDOS, that is used as a means of communication in computer networks. As protocols, routing techniques and other internal controls of RECOMDOS are invisible to network users, one intends to generate, as one of the aims a broad didactic text about the subject issued, apart from a formal specification of protocols identified, using a protocol specification language called APSL.

Joel Martins MEDEIROS. "Sistema de intercomunicação para uma rede distribuída de micro-processadores aplicada ao processamento de informações navais". M.Sc. Diss. Presentation: 08/05/81 238 p. Advisors: Wilson Vicente Ruggiero (USP/SP) and Albrecht Karl von Plehwe

Abstract: Most recent research shows great benefits in designing real time process control systems based on distributed microprocessor networks. The continuous decline of LSI and VLSI chips, as consequence of technologic development, makes economically feasible the implementation of distributed microprocessor networks with low hardware cost and high level of concurrency, performance, reliability and availability. This thesis is concerned with the definition of a distributed microprocessor network applied to naval information processing and the design, based on a project methodology, of an intercommunication system for the proposed network. To estimate the behavior of such an interconnection structure, an analytical study is presented, including performance, reliability and costs. Also, several fundamental concepts about interconnection structures are summarized, and existing communication protocols are discussed.

José Carlos da Silva PALMER. "Um modelo numérico para escoamento de fluidos multifásicos compressíveis em meios porosos". M.Sc. Diss. Presentation: 15/10/81 36 p. Advisor: Paulo Jorge Paes Leme

Abstract: We developed a numerical model for a simulation of fluids flow in parous media. In this work we take into consideration two phases: gaseous (compressible) and liquid (incompressible). The basic laws which rule the flow are mass conservation law and Darcy law (friction). The equations are reduced to a coupled system of a hyperbolic equation with a parabolic equation. This system is solved by means of splitting, by alternating a step in the hyperbolic equation with a step in the parabolic equation. This work aims to test the use of finite difference methods, which is implicit in the parabolic step and explicit in the hyperbolic step, as a preliminary to a simulation of the back-oil problem. The resulting semi-implicit methods did not present any instabilities, as shown by the results.

Lúcia LOBEL. "Especificação e implementação de uma linguagem de consultas baseada no modelo de entidades e relacionamentos". M.Sc. Diss. Presentation: 09/04/81 p. Advisor: Rubens Nascimento Melo

Note: Not available.

Manoel Agamenon LOPES. "Introdução a uma teoria geral de problemas". Ph.D. Thesis Presentation: 12/05/81 p. Advisor: Paulo Augusto Silva Veloso

Note: Not available.

Paulo Fernando Lopes REGO. "O enfoque de entidades e relacionamentos na análise e projeto estruturado de sistemas: um estudo de caso". M.Sc. Diss. Presentation: 09/10/81 85 p. Advisor: Rubens Nascimento Melo

Abstract: This work presents an application of a Structured Analysis and Design Methodology. This methodology combines the so-called Entity-Relationship (ER) approach to System Analysis and Design with the recent Structured Analysis and Design methods (GANE, YOURDON, MYERS, etc.) The

resultant method is called here as ERAPES. The work presents two solutions of the same problem, being one of these through the use of ERAPES and suggests some of the advantages of this methodology.

Paulo Sérgio Simões de ARAÚJO. "Um subsistema de manipulação de dados para um sistema de gerência de banco de dados (Tipo CODASYL/78)". M.Sc. Diss. Presentation: 15/10/81 p. Advisor: Rubens Nascimento Melo

Note: Not available.

Renato BIRCHAL. "Uma especificação conceitual do sistema nacional de informática". M.Sc. Diss. Presentation: 06/04/81 136 p. Advisor: Carlos José Pereira de Lucena

Abstract: This dissertation proposes a methodology for the design of database at the conceptual level (following the ANSI/SPARC standards) as a support to the planning and coordination of the activities in the area of Informatics that take place in the country. This set of activities defines the National Informatics System. Two levels of abstraction are suggested for the formulation of the conceptual model: the structural and the "infological" levels. For the development of the first level we make use of a notation similar to the ones used in connection with the so called structured analysis approach. For the second level we adapted the Entity-Relationship model of CHEN extended by the data type constructors proposed by SANTOS and FURTADO.

Roberto Eugene LOBEL. "Uma contribuição para o desenvolvimento de estruturas flexíveis para sistemas de dicionários de dados". M.Sc. Diss. Presentation: 12/02/81 262 p. Advisor: Rubens Nascimento Melo

Abstract: The main objective of this work is the proposition of a flexible structure for Data Dictionary Systems. First, the concepts involved in the subject of Data Base, Data Administration and Data Dictionary are reviewed. Then the main Data Dictionary Systems are analyzed, based on a taxonomy developed for this system category. The existing recommendations in Brazil about Data Dictionaries are also analyzed. From these analysis it is specified and implemented the SDDPUC, a flexible Data Dictionary System with managerial approach oriented for interactive use. The SDDPUC allows to describe Information Systems by the Entity-Relationship approach using an almost natural language, similar to Portuguese.

Roberto de Lima CAMPOS. "Um subsistema de definição de dados para um sistema de gerência de banco de dados (Tipo CODASYL-78)". M.Sc. Diss. Presentation: 24/09/81 330 p. Advisor: Rubens Nascimento Melo

Abstract: The purpose of this work is to specify a data definition subsystem (SSDD) of a database management system, based on the recent revisions of the CODASYL proposal. This subsystem covers three languages in different levels: DDL (DATA DESCRIPTION LANGUAGE), SDDL (SUBSCHEMA DATA DESCRIPTION LANGUAGE) and DSDL (DATA STORAGE DESCRIPTION LANGUAGE). The main design characteristic of the SSDD is the integration of user database with the data directory. A database implemented with this system is seen in two levels. The first level corresponding to the directory describing the schema, subschemas and storage schema. The second level corresponding to the database itself. The work presents the specification of the DDL and SDDL and some comments on the DSDL. A partial implementation of the system is also included.

Rodney Ferreira de CARVALHO. "Especificação de um sistema para automação bancária". M.Sc. Diss. Presentation: 30/04/81 157 p. Advisor: Daniel Alberto Menascé

Abstract: With the appearance of new microprocessors, distributed systems, computer-communication networks and database technologies, great chances have occurred in the Information System area. Real time systems, once limited to industrial process control and similar, are feasible today to commercial applications like banking data processing. This potential market, given the rigid requirements of cost and efficiency and the complexity of designing an integrated system, become a defiance to the flourishing

Brazilian computer industry. In this work we present a commented specification of the functions we think such system must offer. The various alternative solutions are commented and criticized in each item. We also present a logical specification of the system's database, based on the entity-relationship data model. Numerous future development trends are pointed out.

Ronaldo D'Avila ROENICK. "Comutador de pacotes com arquitetura distribuída: considerações e especificação preliminar". M.Sc. Diss. Presentation: 31/03/81 [irr.] p. Advisor: Daniel Alberto Menascé

Abstract: This dissertation intends to establish technical, economical and functional considerations about multi-processor architectures and, based on these considerations and following previously defined criteria, to select a distributed architecture, including a preliminary specification of hardware and software for a packet switching exchange. The resulting specification will be used as an initial proposal for the development of the packet switching node considered in the contract signed among PUC/RJ, EMBRATEL and CPQD/TELEBRAS. It puts in evidence the viability of such a project in an university ambient, analyses the various possible architectures and selects an architecture, based on a distributed cyclic bus access - DCBA - protocol, which is developed in greater detail during the definition of the preliminary specification.

Tarcísio Haroldo Cavalcanti PEQUENO. "Uma descrição formal dos processos de especificação e implementação de tipos abstratos de dados". Ph.D. Thesis Presentation: 15/01/81 96 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work presents a system for the formal specification of abstract data types and proposes a model for the problem of the implementation of data types. The aim is to contribute to the fundamentation of the process of construction of programs by the methodology of abstract data types, by making possible its formal description. Special emphasis is given to the problem of implementation, here recognized as of fundamental importance to the process of program construction and verification. Its formalization is based on the theory of the definition.

Tatuo NAKANISHI. "Análise de desempenho de mecanismos de controle de concorrência em banco de dados". Ph.D. Thesis Presentation: 18/09/81 149 p. Advisor: Daniel Alberto Menascé

Abstract: Concurrency control mechanisms are necessary in a multi-user database environment to avoid synchronization anomalies. The purpose of this thesis is to study through analytical models the performance of both mechanisms for centralized as well as distributed database systems. In both cases, the average response time of transactions is equated as a function of parameters of the computer system and the communication system, as well as parameters affecting the amount of conflict between transactions. In the centralized databases case, a timestamp-based mechanism is analyzed using a two-level analytic model. The results obtained by this model are compared with results obtained through simulation for a locking-based mechanism. As for distributed databases, a reliable concurrency control mechanism, which uses the two-phase commit protocol, is first specified. Then, the mechanism is roved correct. Finally, the performance of the mechanism is studied through an analytic model derived using Queuing Theory.

Yussef Eloy Farran LEIVA. "Especificação de uma implementação da recomendação X.25 da CCITT em um sistema IBM/370". M.Sc. Diss. Presentation: 23/02/81 144 p. Advisor: Daniel Alberto Menascé

Abstract: The CCITT X.25 recommendation describes an access protocol to a packet-switched network, and permits communication between separate computer systems. This work presents an interpretation of the X.25 recommendation written in the protocol specification language APSL, and also specifies an implementation for an IBM System/370, based on the concept of concurrent processes communicating through monitors. The implementation is being carried out using a concurrent programming system, SPC, whose design and implementation is also described here. The SPC system extends the capabilities of the BCPL programming language to allow concurrent programming.

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Aloysio Alcantara de OLIVEIRA. "Uma metodologia para elaboração do plano diretor de informática". M.Sc. Diss. Presentation: 19/03/82 140 p. Advisor: Carlos José Pereira de Lucena

Abstract: This dissertation proposes a methodology for the planning of management information systems in organizations, with focus on strategic issues, which are necessary for effective information systems to serve corporate needs. A strategic planning model is formulated, according to STEINER's ideas, which describes the primary activities involved in the planning process. The planning methodology contains several phases of interest, particularly the ones that follow: a strategic profile analysis, built upon the stage's theory of NOLAN; an integrated strategy for information systems development, where several approaches are discussed.

Dimas Augusto de ANDRADE. "Uma sistemática para o projeto de sistema de banco de dados". M.Sc. Diss. Presentation: 15/10/82 124 p. Advisor: Rubens Nascimento Melo

Abstract: This dissertation proposes and discusses a systematic to Data Base Design, based on the works developed by Borge Langefors & Bo Sundgren, ANSI/X3/SPARC Committee and Peter P. Chen. This systematic divides a Data Base System Design into six stages, during the modeling of information and data. These stages are: I) Object System Definition; II)Primary Conceptual Model Specification; III) External Models Specification; IV) Final Conceptual Model Specification; V) Logical Model Specification; VI) Physical Model Specification. After treating and analyzing the main problems regarding each stage, the tools and techniques used to solve them, are presented.

Eduardo Esteban MENDEZ ORTIZ. "O modelo analítico do nível de transporte em redes de computadores". M.Sc. Diss. Presentation: 26/05/82 136 p. Advisor: Daniel Alberto Menascé

Abstract: Transport protocols implement reliable interprocess communication mechanisms across a computer network. Functions of the transport level include: addressing, connection management, error and flow control, multiplexing of virtual circuits and synchronization. This work develops an analytic model of the transport level aimed at studying the influence on delay throughput of important parameters such as window size, message size and message arrival rate per connection. A program to calculate performance measures for closed queuing networks was written and is also presented here.

Fernando Maurício Ribeiro MENDES. "Análise de desempenho de um sistema de transferência eletrônica de fundos". M.Sc. Diss. Presentation: 28/10/82 189 p. Advisor: Daniel Alberto Menascé

Abstract: The increasing amount of papers exchanges among banks, caused by Funds Transfers arises a lot of problems. To improve efficiency in this area, several banks are investing in the automation of these services. The development of computers and the improvement of the high level mechanisms applied to them, as Data Bases and Data Communication Networks, gives the necessary tools for the automation. This thesis analyzes the causes and mechanisms of Funds Transfers, and suggest a computerized Electronic Funds Transfer System. The implementation is then discussed considering the necessary performance for the system, in order to study the appropriate tools. Finally aspects of viability are examined for the system, through the known volume of transactions, the prediction of their distribution and the characteristics of conventional computer systems.

José Eduardo Amaral de SÁ. "Conversão de sistemas convencionais para o enfoque de banco de dados". M.Sc. Diss. Presentation: 30/11/82 198 p. Advisor: Marco Antonio Casanova

Abstract: Information Systems (IS) have been constructed under two approaches historically opposed. Systems developed under the conventional approach have several limitations that motivate their conversion to data bases approach, thus obtaining high level descriptions. Conversion methodologies currently known build record descriptions from the conceptual schema. This work conversely explains how to model the conceptual schema from conventional record descriptions. A concise study about this description is presented and a high level language to be used to define the conceptual schema based on

entities, attributes and relationship (EAR) is suggested. Using this language, mechanisms to map records onto these objects are recognized and a simple and practical methodology to convert conventional description in the high level description suggested is defined.

José Geraldo SILVA. "Um método de projeto de estrutura de banco de dados". M.Sc. Diss. Presentation: 31/12/82 173 p. Advisor: Rubens Nascimento Melo

Abstract: The SIBER (Integrated System Based on Entity-Relationship) is an environment of systems development using automated tools and methodologies based on entity-relationships model. This work contributes as a systematic method to the designing of database structures, which uses the SDDPUC (Data Dictionary System-PUC) as support tool to analysis and documentation. The SDDPUC is one of SIBER's tools. As per this method, the designing process of database structure can be reached in two distinct steps: in the first, a macro vision of the conceptual schema is produced, and in the second one the details are completed. In the first step, the Entity-Relationship model and its extensions are analyzed, and it is suggested the use of facilities to record information without any data dependencies problems. In the second step, a systematic method for graphic representation of database structure is used with an auxiliary flexible data dictionary system (SDDPUC). Finally, a summary of the procedures for designing of database structure is introduced.

José Hamurabi Nóbrega de MEDEIROS. "Lógicas não-monotônicas - aplicações". M.Sc. Diss. Presentation: 06/04/82 75 p. Advisor: Roberto Lins de Carvalho

Abstract: Classical logic has been used by Computer and Artificial Intelligence scientists in formalizing facts about program and common sense. However classical logic systems seem inadequate in several situations since they are based on static pre-established axiomatic, and it is quite different from the needs of the incomplete knowledge sciences where the former two cases are included. A text is proposed which analyses and evidences three different approaches of the so-called non-monotonic logic - "Circumscription", "Modalized-Formulae Logic" and "Defaults Reasoning Logic" - which extend classical logic by introducing different mechanisms.

José Mauro Volkmer de CASTILHO. "Especificações formais para o projeto de aplicações de banco de dados". Ph.D. Thesis Presentation: 24/03/82 180 p. Advisor: Antonio Luz Furtado

Abstract: The subject of this work is the formal description of very high level schemas for database applications. Firstly, schema related properties are presented and discussed, within a proposal for a methodology of database applications design, considering static and state transition aspects of the applications. Then, several formalisms based on logic are presented, and their adequacy to the description of schemas are corresponding properties is examined, with examples. Finally, formalisms from the abstract data type are, adapted to the description of data base applications as data types, are presented, together with examples. Some aspects of this last approach are emphasized, specially the query or update orientation of each formalism and the treatment of the implementation of an application.

José Quenji SHITARA. "Modelos analíticos de protocolos de controle de linha". M.Sc. Diss. Presentation: 21/06/82 191 p. Advisor: Daniel Alberto Menascé

Abstract: Protocols constitute the "basic software" of packet-switching networks and as such their performance affects directly the network performance itself. The main goal of this dissertation is to develop mathematical models for the performance evaluation of a link level control protocol (level 2 of CCITT's X.25 recommendation). Three different models with increasing level of complexity are presented. All of them assume POISSON arrivals and exponentially distributed packet lengths. An important contribution of this work is the calculation of the probability under with a confirmation packet confirms a variable number of packet in the transmission window. The models are solved by means of finite Markov chain techniques and the results are compared with data obtained from simulation for validation purposes.

Marco Antonio ROMERO. "Uma facilidade para construção de programas utilizando o método Jackson". M.Sc. Diss. Presentation: 15/10/82 144 p. Advisor: Rubens Nascimento Melo

Abstract: The present use of Electronic Data Processing, in a growing scale, suggests the implementation of automated tools to improve the productivity in software development, necessary to meet the increasing demand. This work considers the existing automated software development tools, and presents the Program Project Language (Linguagem de Projeto de Programas - LPP), as a tool for automating program development, based on Jackson's Design Method.

Maria Elisa Barroso Mendonça COSTA. "Um algoritmo heurístico para estudo de redes fechadas de filas em um sistema de computação". M.Sc. Diss. Presentation: 08/10/82 85 p. Advisor: Daniel Alberto Menascé

Abstract: This work presents an algorithm to obtain statistics to analyze the performance of closed, product-form queuing networks which stations have a single-server or infinite servers. This algorithm, named Linearizer, is speed, to obtain accuracy results and is easy to understand. Networks with large populations, many job classes and stations may be analyzed interactively by the Linearizer even on microcomputers with limited memory. This work, also presents others efficient algorithms to analyze the performance of computer systems.

Marli OPPENHEIMER. "Uma facilidade para usuário final do SDD/PUC". M.Sc. Diss. Presentation: 31/12/82 173 p. Advisor: Rubens Nascimento Melo

Abstract: The SDDPUC is a Data Dictionary developed by the Informatics Department of the Catholic University of Rio de Janeiro. It possesses a quite simple language, but when one wants to make queries to the database or when one wants to include new data or update old one, one has to enter the information in a "one to one command" basis, which can become very tiresome and tedious. This paper presents a review of the latest concepts regarding End Users facilities in database systems. Based on this study, a Facility using menus and forms is proposed in order to expedite more efficiently the entrance of commands into the SDDPUC.

Martha Ymelda SANTA CRUZ PASTOR. "Transporte do sistema Pascal concorrente para o IBM/370". M.Sc. Diss. Presentation: 13/12/82 176 p. Advisor: Michael Anthony Stanton

Abstract: This thesis describes the transportation of the Concurrent PASCAL System of Brinch Hansen to an IBM 370 (OS/370 Operating System). The source and object codes of the system software (PDP-11 version) were obtained from the SOLO distribution tape (provided by Professor W.M. Waite, Colorado University, Boulder, Colorado). An interpreter to simulate exactly the PDP-11 system was written in PASCAL 8000. A package of PASCAL 8000 routines was then constructed which simulated an operating system environment (kernel) in which the interpreter could run. Clock interrupts were simulated so that processes scheduling can be undertaken as if real interrupts were being generated. The system was constructed to provide a basic tool for teaching the programming of small operating systems at the PUC-Rio Computer Science Department.

Paulo Roberto Gosling MEDEIROS. "Especificação de um núcleo distribuído para Intercomunicação entre Processos". M.Sc. Diss. Presentation: 12/01/82 209 p. Advisor: Michael Anthony Stanton

Abstract: Comparing the requirements for communication between processes running in the same computing unit with those for processes belonging to different unites of a distributed computing system, similarities can be concluded. The problem is generalized and a understructure is specified to support the implementation of several communication and application protocols. ADA programming language is used for the formal specification, and some of its facilities related to concurrent abstract programming are discussed as well. The subject is developed along three main levels: the discussion of a methodology to write concurrent programs; the presentation and complementing of the Theory of Colloquies (G. Le Moli), in order to build an abstract model of the Nucleus; the specification of two protocols, one to implement the set of communication functions between processes belonging to the same computing unit and another one to supervise this service.

Paulo Roberto Nunes MANDARINO. "Segurança de banco de dados". M.Sc. Diss. Presentation: 20/04/82 140 p. Advisor: Marco Antonio Casanova

Abstract: The development of data base technology and its adoption by most of the computer users community brought new characteristics to the security measures that should exist in a computerized environment. It is fundamental to guarantee the security and privacy of data kept in this unique repository of information, since users can access, organize and control interrelated data collections, which are stored together, with controlled redundancy and which serve different applications in an organization. This work analyses computer systems protection-related problems, with a special emphasis on the security, of centralized data bases. Theoretical models for access control are studied and preventive actions to avoid inference in statistical data bases are described. Finally, a comparative study of the access control mechanisms of three data management systems is presented.

Pedro José MONTEIRO NETO. "Segurança em sistemas automatizados". M.Sc. Diss. Presentation: 12/02/82 248 p. Advisor: Arndt von Staa

Abstract: The necessity of security in the automated systems is emphasized with a didactic aspect, considering the required resources and the values they deal with. It is discussed involved factors in security that include integrity, privacy , and quality. Also, it is studied suitable resources that make possible the development of a security plan suggesting methods or considerations in a way systems be projected and operated secure.

Raul Andrade de LIMA FILHO. "Especificação de um subconjunto do Q*uery-by-Example"*. M.Sc. Diss. Presentation*:* 26/02/82 151 p. Advisor: Marco Antonio Casanova

Abstract: This thesis focus on the major problems of designing a high-level relational interface compatible with the decomposition algorithm. The adopted interface is a Query-by-Example, an easy language to learn and use, suitable for the non-programmer community. Firstly a subset of QBE called SUBQBE is defined where each query formulated presents an equivalent conjunctive query. Then an interpreter had been specified for this query's classes in order to make a translation from those to the graph design compatible with the decomposition algorithm. This thesis is concluded showing different processing methods to other query's classes to allow extensions for the defined subset.

Roberto Luis Miranda Pereira de CASTRO. "Especificação de um sistema de transferência eletrônica de fundos". M.Sc. Diss. Presentation: 05/10/82 218 p. Advisor: Daniel Alberto Menascé

Abstract: The dramatic growth in the volumes of financial transactions have caused severed administrative and operational problems for the banking institutions. The state of the art in Computer Science and Data Communications has steered the discussion of banking automation. The banking automation problem, considered in its entirety, is very complex and proposed solutions are still very costly to implement. A feasible approach is the automation of a critical subset of the banking operations. This work considers the well known problem of Electronic Funds Transfer (EFT) that will tend to replace most of the current check and document based transactions. The first part of this work is devoted to the study of the Payment Systems in the context of the National Financial System, emphasizing the accounting structure used in current Clearinghouse procedures. Then, an Electronic Funds Transfer System is proposed and its components, including the database model and transactions, are specified. This dissertation concludes with a brief analysis of the impact of such a system in our society.

Sérgio Caetano de BARROS. "Controle de qualidade aplicado ao desenvolvimento de software". M.Sc. Diss. Presentation: 12/02/82 223 p. Advisor: Arndt von Staa

Abstract: The software development is being characterized nowadays by the employment of high financial resources allied to a very high level of risk. Considering that the software systems are responsible for activities which are vital and more complex we identify the quality and cost aspects in those systems as critical. Aiming the definition of a model which makes possible the setting up of a

quality control for software during its development, based on the life cycle of a system and on a structure for prediction/evaluation of quality, aspects related to software quality, quality assurance and quality control are analyzed. The Sketch of a Quality Assurance Plan and a Quality Metrics List are presented too.

Severino Pompilho do REGO. "Uma teoria de dependências funcionais e dependências de inclusão sobre expressões relacionais". M.Sc. Diss. Presentation: 07/04/82 125 p. Advisor: Marco Antonio Casanova

Abstract: A formal system for reasoning about functional dependencies (FDs) and inclusion dependencies (IDs) defined over relational expressions is described. An FD *e*: X Y indicates that Y is functionally dependent on X in the relation denoted by expression *e*; an DI *e* (symbol) indicates that the relation denoted by e is a subset of that denoted by (symbol) . The system is shown to be sound and complete by resorting to the analytic tableaux method. Applications of the system include the problem of determining if the constraints of the base schema and the development of database design methodologies similar to normalization imply a constraint of a subschema.

Suzana Lent SANTOS. "Especificação e implementação de um sistema de automação de escritórios". M.Sc. Diss. Presentation: 28/05/82 221 p. Advisor: Daniel Alberto Menascé

Abstract: Office automation is an important and current area of research within the Computer Science field. Automated offices imply in rather dramatic in the dynamic of office work, provide increased employee productivity and bring a revolution into the concept of conventional data processing. Basically, systems developed for offices differ from traditional systems in the non-structured nature of it's data, in the need of great flexibility to enable adaptation to the context of a variety of organizations, and in the close participation of users, who interact with the machines. This dissertation focuses on the development of applications in the area of office work automation for Brazilian manufactured mini computers. Starting from a preliminary office study, a conceptual schema is presented for a selected sub-system and an user interaction language is defined. Finally a description of the internal schema and the implementation of routines are presented.

Vânia Lúcia Susini Ramalho CHAVES. "Uma implementação de arquivos invertidos utilizando árvores B+ em COBOL". M.Sc. Diss. Presentation: 26/10/82 86 p. Advisor: Antonio Luz Furtado

Abstract: The main objective of this work is to present a set of routines, that, based on a user's file, develops an inversion over a desired secondary key. It implements appropriated procedures to maintain (insert, update and delete), and retrieve this inverted file. The technique of B+ tree is employed to accelerate the access method and give more reliability to the package. A commercial language (COBOL) is used in order to permit the implementation of this system with little changes, in a large range of computers.

Vânia Maria Ponte VIDAL. "Projeto de banco de dados através de integração de visões". M.Sc. Diss. Presentation: 25/03/82 124 p. Advisor: Marco Antonio Casanova

Abstract: This work approaches a data base project methodology where a global data base description is obtained by integrating several user views. First, a set of concepts that can represent the usual situations occurring in database design is informally presented. These concepts are formalized using the relational model, extended with connections between relations that explicitly indicate the effect an update operation on a relation produces on the others. Procedures that eliminate some difficulties of the integration process, such as the integration of views with different structure and the detection of transitive relationships, are presented. Optimization techniques are also proposed to eliminate redundancies and to minimize the interrelation restrictions.

Waldeck Pinto de ARAÚJO JUNIOR. "Considerações sobre especificação e implementação de um protocolo de entrada". M.Sc. Diss. Presentation: 05/10/82 205 p. Advisor: Daniel Alberto Menascé

Abstract: The characteristics of packet-switched networks and their protocols are analyzed, with more detail in the CCITT's recommendation X.25. After general considerations about transport protocols, is presented a specification in natural language, but sufficiently detailed, comprising interfaces and procedures. Any aspects of how to implement the transport protocol are studied, for a medium capacity computation systems or above.

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Acir Ferreira MARTINS. "Projeto de um compilador transportável para a linguagem EDISON e implementação dos módulos de análise semântica". M.Sc. Diss. Presentation: 27/05/83 134 p. Advisor: Michael Anthony Stanton

Abstract: The installation of computer industry in Brazil and the availability of microprocessors demands the development of base software. This paper presents the design and implementation of an EDISON compiler, a high-level language to be used for base software development. The compiler was designed to be portable and the implementation divided into modules. This paper presents the semantic analysis modules.

Ana Regina Cavalcanti da ROCHA. "Um modelo para avaliação da qualidade de especificações". Ph.D. Thesis Presentation: 27/06/83 260 p. Advisor: Arndt von Staa

Abstract: The majority of errors in software are due to ambiguous, incorrect and inadequate specifications. Thus, the quality of software is directly related to the specification quality. To produce specification with the desired quality, it is necessary to work in an organized manner towards it. Even more, specifications are produced with methodologies and specification languages. Thus, specification quality depends on the quality of these methodologies and languages. This thesis defines a model for evaluating and predicting specification quality and methodologies and specification languages quality. Based on this model and the study of current methodologies and specification languages, we define the requirement specification for a network of specification languages.

Armando Mercio Barros CARDOSO. "Projeto modular de banco de dados". M.Sc. Diss. Presentation: 01/03/83 121 p. Advisor: Marco Antonio Casanova

Abstract: A data base conceptual schema description is usually lengthy and complex task. Therefore, there is a great interest in developing techniques that structure information in a way that permits implementing data bases in a gradative fashion. To achieve this goal, we develop a modular design technique, based on the concepts of module and module generator mechanism. A module can be taken as the basic cell of conceptual schema. A module generator mechanism is a set of rules that captures natural abstractions of the types generalization, aggregation,....etc. The technique is bottom up in nature and begins with what we have called start modules. These are the basis of the schema. At the end of the generation process, the redundant modules are eliminated. A module is called redundant when it can be generated from others only by mapping their information. The modules that are not eliminated after that process will define the conceptual schema.

Célio da Silva PEREIRA. "Sistema de intercomunicação de uma rede distribuída de microprocessadores aplicada a um sistema de simulação em tempo real". M.Sc. Diss. Presentation: 30/11/83 315 p. Advisor: Daniel Schwabe

Abstract: Distributed microprocessor networks have been used extensively in recent years to support distributed processing, mainly because of advances in computer technology and the falling cost of hardware, particularly microprocessors. Intrinsic advantages of distributed networks such as high reliability and high throughput make these architectures suited for most real time applications. The performance of these distributed systems depends on the performance of the Intercommunication System (IS), which interconnects the various stations that compose the network. This dissertation formally specifies the Communication Protocol for a IS applied to a real time simulation system. This specification uses a language adequate for protocol specification, APSL, and is based on the definition of the requirements of the IS and its proposed hardware architecture. The Structural Documentation of the software that implements the Protocol functions is elaborated using a methodology previously developed. This documentation includes the functional description of the diverse modules that constitute the Protocol, their structural diagrams, the description of the data structures and the codification of the modules.

Claudio Mucio de Oliveira MOURA. "Procedimentos de decisão para dependência de dados". M.Sc. Diss. Presentation: 20/07/83 71 p. Advisor: Marco Antonio Casanova

Abstract: A constraint definition language, that provides a uniform notation for data dependencies commonly used, is proposed. In this language a logical implication or inference operator is introduced for, given a set Σ of data dependencies to determine whether Σ logically implies a new dependency σ, that is, $\Sigma \models \sigma$. The decision problem for certain classes of data dependencies is analyzed through the use of the method of the tableaux defined by Aho, Sagiv and Ullman and through the use of the analytical tableau method from the first order logic. This problem presents a special interest due to some practical utilization of decision procedures in the project phase of relational databases.

Crediné Silva de MENEZES. "Simulador de micromaquinas: requisito, especificação funcional, projetos e implementação". M.Sc. Diss. Presentation: 23/03/83 158 p. Advisor: Arndt von Staa

Abstract: A micro-machine simulator is described. This system allows specification and simulation of computers at the bitslice level. By means of a machine description language a wide variety of micro-machines may be simulated. The system is used to simulate the behavior of micro-programs to be executed on described machines. The evolution of the micro-program may be monitored by means of a control language. The project was developed using a set of software engineering disciplines and tools. This set showed to be adequate, as it allowed the system construction within quality constraints and schedule previously defined.

Henrique Manoel Guedes de AGUIAR. "Projeto de um compilador transportável para a linguagem EDISON e implementação dos módulos de análise léxica e sintática". M.Sc. Diss. Presentation: 27/05/83 110 p. Advisor: Michael Anthony Stanton

Abstract: The installation of computer industry in Brazil and the availability of microprocessors demands the development of base software. This paper presents the design and implementation of an EDISON compiler, a high-level language to be used for base software development. The compiler was designed to be portable and the implementation divided into modules. This paper presents the syntax analysis modules.

Hugo BORQUEZ LEGASA. "Implementação de um método de otimização para processamento de consultas multirelacionais". M.Sc. Diss. Presentation: 01/03/83 171 p. Advisor: Marco Antonio Casanova

Abstract: The relational model of data allowed the development of high level languages in which users specify only the desired results in the query, without worrying about the internal organization. A language with a great acceptation in the non-programmer community is Query-by-Example (QBE). A subset of QBE called SUBQBE was defined, accepting only conjunctive type queries. Queries formulated in these kind of languages, don't specify access paths to the stored data, which implies that there must exist interfaces that find efficient paths, optimizing automatically the access to these data. A strategy for query optimization was proposed by WONG and YOUSSEFI (1976). This strategy is called "decomposition" and the general procedure is to decompose the query into a sequence of one-variable queries by alternating between reduction and substitution. The objective of this work, is the implementation of an interpreter of queries formulated in SUBQBE, and the implementation of the decomposition algorithm, adapted to support queries in the form of a query graph.

João Carlos SILVA. "Um processador de consultas sobre uma relação". M.Sc. Diss. Presentation: 06/06/83 113 p. Advisor: Marco Antonio Casanova

Abstract: This thesis presents a detailed description of a processor for one-variable queries. Initially, a brief description of high-level query language is given and a global view of strategies for query processing is presented. Then, the main characteristics of the storage support system, the formulas used to estimate costs, the method used to select access paths to data and its internal representation. A brief description of the Hydes database management system is also presented. Finally, the implementation of the main components of the processor is described. Such processor is the basis for the implementation of

interpreters for relational query languages based on decomposition, which is a strategy developed to minimize the processing costs of queries that involve several relations through the reduction of such queries to a sequence of one-variable subqueries.

Juan Carlos CORDERO PEÑA. "Um estudo comparativo de modelo de dados semânticos". M.Sc. Diss. Presentation: 26/09/83 89 p. Advisor: Rubens Nascimento Melo

Abstract: Semantic data models are analyzed from the viewpoint of structures, operations and constrains utilized as modeling concepts. Considering the specific characteristic of the models analyzed, several criteria for evaluating and comparing models are deduced. From these criterium the work presents a comparative frame of the models analyzed, attempting to extract the fundamental characteristics of a good semantic data model.

Juan COCKBAINE OJEDA. "Controle das restrições de integridade em sistemas tipo CODASYL". M.Sc. Diss. Presentation: 18/02/83 178 p. Advisor: Rubens Nascimento Melo

Abstract: The integrity constraints specification play a very important role in a Data Base project. Although this specification is initially made in a conceptual level, the control of those constraints must be implemented in terms of the facilities of the DBMS used. In CODASYL systems the great part of this control is in general under responsibility of ADB, who must implant a lot of additional procedures for each project. In this work, we propose that the same system has facilities for the automatic monitoring of integrity constraints. This for, are specified a DDL and a DML CODASYL like extended for a better constraints treatment. Besides this the work includes a detailed project of a preprocessor that implement the integrity constraints control described at the schema.

Luis Ricardo CONTRERAS ARRIAGADA. "Integração entre especificação e projeto de programas: um modelo de implementação". M.Sc. Diss. Presentation: 22/07/83 250 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work is aimed to project a tool that allows the user a rigorous (although not formal) specification, in the stage of software development that play the role of interface between a specification for 'programming-in-the-large' and a specification for 'programming-in-the-small'. The development of such tool, must allow a coherent supervision in systems construction, interacting in a strong way with specifications tools for 'programming-in-the-small' (PREPROG specifically). Interesting features of the proposed systems are, the documents generation through the different levels of the specification process, consistence verification and completeness testing. The goal of constructing such a system is to form, with PREPROG, a software environment to increase the possibilities of obtaining reliable software products.

Luiz Fernando Gomes SOARES. "Síntese de protocolos para redes locais de computadores". Ph.D. Thesis Presentation: 16/10/83 196 p. Advisor: Daniel Alberto Menascé

Abstract: Local area computer networks have been receiving increasing attention in the context of distributed systems research. Efficient resource sharing and the design of highly reliable and high performance systems are among the main motivations for building such networks. Communication protocols for local networks should take advantage of its characteristics, and are generally complex. Therefore, a methodology for their design is required. This thesis presents a contribution towards the definition of a methodology for the design of communication protocols. The methodology was applied to the design of a token passing based access protocol for a global bus local area network. The protocol was formally specified using Time Petri and Temporal Logic. The hardware and software implementation of the protocol is also discussed.

Luiz TUCHERMAN. "Avaliação de uma estratégia de encapsulamento para projeto de aplicações de banco de dados". M.Sc. Diss. Presentation: 20/07/83 113 p. Advisor: Antonio Luz Furtado

Abstract: This paper presents an evaluation of the encapsulation strategy for data base application design. This evaluation, done over a case study, consists of: (1) the study of the update operations propagation on a conceptual model, represented by an entity-relationship diagram: (2) the implementation of these operations using an encapsulation technique, in order to guarantee the integrity constraints and (3) the cost measurement of these verifications.

Paulo José ERLICH. "Um pequeno pacote de álgebra linear voltado para mini-computadores". M.Sc. Diss. Presentation: 28/12/83 87 p. Advisor: Therezinha Costa Ferreira Chaves

Abstract: The greatest problem we find when we want to make Programs in Numerical Methods in Linear Algebra is the length of the Data and the Program Areas necessary for the implementation. Nowadays this problem has grown with the Mini-Computers, because their Memory size is very strong and limiting factor. On this paper we use the Matrix Partition Theory to improve Subroutines that solve Systems of Linear Simultaneous Equations and to Invert Matrices, trying to show the viability of the use of Mini-Computers to solve problems in Linear Algebra.

Paulo Roberto Pinheiro TORRES FILHO. "Um sistema semi-automático para apoio à indexação de documentos técnicos". M.Sc. Diss. Presentation: 07/06/83 81 p. Advisor: Arndt von Staa

Abstract: We discuss the problem of technical document indexes generation. We define what we understand as indexing automatization (mechanization) and we approach some difficulties. We define the objectives of the proposed system and the type of solution adopted to the developed prototype. We make some considerations about the terminology and we present some basic concepts used in the implementation of the prototype. We describe the most relevant algorithm within this implementation. We present the results we have observed and a plan for a future work.

Ricardo Soares BIGIO. "Um sistema de agendas distribuído para uma rede local". M.Sc. Diss. Presentation: 25/10/83 170 p. Advisor: Daniel Alberto Menascé

Abstract: This dissertation describes the project and implementation of a distributed Calendar System, where each station is a microprocessor with local direct access auxiliary memory availability and CP/M operating system, and is connected to the other stations via an existent local network.

Roberto de Souza GOUVEIA. "Métodos de estruturação de dados em linguagens de programação". M.Sc. Diss. Presentation: 08/06/83 139 p. Advisor: Paulo Augusto Silva Veloso

Abstract: Methods and techniques using abstract data types for the construction of reliable software are presented. Some considerations on the stepwise refinements of programs, and on the Floyd-Hoare method for the verification of programs, are initially presented. These are followed by considerations on the Hoare-Wirth mechanism for data structuring, and by an examination of the use of abstract data types in the structuring and verification of programs. The transition from an abstract data structure to a concrete data structure is exemplified in the programming languages Pascal, CLU, Euclid and Ada.

Roberto Velasco KOPP JUNIOR. "Um gerador de sistemas de apoio à decisão". M.Sc. Diss. Presentation: 20/07/83 131 p. Advisor: Antonio Luz Furtado

Abstract: This paper describes the experience of joining the main roles in a Decision Support System (DSS), the Designer, the Builder and the Decision Maker as well as develop a Decision Support System Generator.

Rômulo José Valença CORRÊA. "Utilização de arquivos diferenciais em banco de dados". M.Sc. Diss. Presentation: 02/12/83 116 p. Advisor: Rubens Nascimento Melo

Abstract: This work's main goal is to analyze various applications of the differential file technique and their importance for Database online systems. Initially, we show how to utilize and implement the

differential files in a systematic way. After that, we make a detailed study of the Bloom filter, investigating new procedures for utilization and implementation. Finally, we describe a technique's implementation at a large company's pilot project with our participation.

Sheila Regina Viola de MELLO. "Uma facilidade de verificação de sistemas para o SDDPUC". M.Sc. Diss. Presentation: 18/04/83 96 p. Advisor: Rubens Nascimento Melo

Abstract: The main objective of this work is the development of a verification facility for the SDDDPUC specifications. Initially the main verification and specification methodologies, and the SDDPUC's features and functions are briefly introduced. Next the work describes the specification and implementation of the AUDIT system, which allows the auditing of system description made with SDDPUC. The AUDIT system receives auditing rules defined in a language similar to SDDPUC. These rules validate the specification of a system in the SDDPUC data base.

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Alfredo Braga FURTADO. "Gerência de desenvolvimento de software". M.Sc. Diss. Presentation: 15/03/84 174 p. Advisor: Arndt von Staa

Abstract: In this dissertation several aspects referring to software development management are discussed. Work Breakdown Structures are shown to be a basic instrument to software development planning, assuring precision to cost and time estimation process. They also assure visibility to the intermediate components of each of the development. Several techniques and methods of project planning and control are also discussed. Finally, a specification of an automated system to supporting the software project management is sketched.

Aloísio de Oliveira REIS. "Projeto hardware e software de um conversor X.25". MSc. Diss. Presentation: 01/11/84 242 p. Advisor: Daniel Schwabe

Abstract: A Packet Switching Network can be linked to an equipment in several ways. We give special attention to two of them: by using a PAD (Packet Assembler Dissembler) or through a Conversor, if the equipment to be linked is a computer. This thesis gives the hardware and software specifications of a X.25 Conversor that implements the X.25 protocol in such way to permit the link of a Computer or Terminal equipment to a Packet Switching Network. This is done by adding to the Conversor most of the PAD functions. The software specified is composed of concurrent processes communicating by message switching, and a kernel supporting facilities for them. The methodology used in the specification showed very appropriated for this situation. The Conversor hardware is based on the INTEL 8088 microprocessor and on the INTEL 8273 line controller.

Aluizio ARCELA JUNIOR. "As árvores de tempos e a configuração genética dos intervalos musicais" Ph. D Thesis. Presentation: 08/06/84 180 p. Advisor: Roberto Lins de Carvalho

Abstract: The nature of informations living in the musical interval, seen as a physical phenomenon modeled by the composition of periodical motions, is investigated. The occurrence-order law and the spatial-distribution law related to the self-intersection points on the trajectory are infered from this model. With the analysis of the duration sequences then produced, one can see that such informations are structered as number trees which can be generated by means of computable functions. Since these functions do not depend on the phenomenon itself or on the model, a representation by functions is described as well. It's finally shown that the intervalar tree overall organization reflects the existence of natural scores inside the very interval.

Christina Fraga Esteves Maciel WAGA. "Métodos de resolução de problemas". M.Sc. Diss. Presentation: 30/05/84 80 p. Advisor: Paulo Augusto Silva Veloso

Abstract: Problems have been seen as questions of a general character to be answered, employing all the available knowledge. This work aim at increasing the understanding about problems, showing formal descriptions of some strategies to solve them. The main chapters describe some methods using abstract data types together with some examples. The methods are: Reduction, Divide-and-Conquer (Decomposition), Greedy, Dynamic Programming and Backtracking. This work is a contribution towards a better understanding of these methods, their applicability and limitations.

Claudia de Campos ALVARENGA. "Um estudo de técnicas de mapeamento de textura". M.Sc. Diss. Presentation: 11/12/84 71 p. Advisor: Rubens Nascimento Melo

Abstract: The realism in the production of 3D synthetic images is one of the objectives of the application of Raster Graphics techniques. Texture Mapping techniques simulate real surface textures. Since Edwin Catmull's work that introduced this idea in 1974, various Texture Mapping techniques have been proposed. This present work contains an individual and a comparative study of the Texture Mapping techniques available in the literature. The specific issues of the texturing process are identified in the individual study. A classification is then derived from the analysis of the texturing techniques.

Claudio D'IPOLITTO. "Um sistema de autoria brasileira". M.Sc. Diss. Presentation: 03/10/84 180 p. Advisor: Carlos José Pereira de Lucena

Abstract: The Authoring System concerns one of the applications of Informatics in Education. We are dealing with a tool that will help any professional in Teaching and Training (the author) to generate a computer program with instructional means ("a courseware", an instructional material or simply a Lesson). This work suggests a pattern to the problem of specification of instructional material basing itself on the premises of (i) a viewing from general to particular in authoring ("Topdown" approach), the elimination of the explicit need of programming, (iii) the possibility of following the material's evolution under development. Basing itself on this modeling, it presents the SAB Project - Brazilian Authoring System - and describes the implementation of a simplified prototype in a 8-bit microcomputer, which is expected to offer support to future work in the area of Computer Application in Teaching and Training Activities in the country.

Claudio Mendes de OLIVEIRA. "Requisitos de um centro de informações estatísticas". M.Sc. Diss. Presentation: 26/03/84 103 p. Advisor: Marco Antonio Casanova

Abstract: It is made a survey of basic requirements for the development of a statistical data basis with a conventional type attendance into an information center, and it is also suggested characteristics of a data dictionary, a master tool in such development process.

Ernesto Rocha TORRES. "Um gerador automático de analisadores sintáticos com recuperação automática de erros". M.Sc. Diss. Presentation: 30/05/84 63 p. Advisor: Michael Anthony Stanton

Abstract: Not provided.

Hermes José Loyola COSTA. "Ferramenta para automatização do método de transformadores de dados". M.Sc. Diss. Presentation: 03/05/84 160 p. Advisor: Carlos José Pereira de Lucena

Abstract: The present work describes the conception and implementation of a tool designed to allow the automation of the Data Transform Method concerning the general idea of automizing the processes of software development. This Method is an extension of the Jackson Basic Method and solves problems of backtracking and structural clashes in an homogeneous way.

Hugo FUKS. "Sistema de gerência da interface do usuário". M.Sc. Diss. Presentation: 17/05/84 88 p. Advisor: Rubens Nascimento Melo

Abstract: The subject of this thesis is the study of the man-machine-relationship. User Interface Management Systems (UIMS) are defined and exemplified. An UIMS is a programming environment that allows the development of the user interface concurrently with the application's development. The creation of good user interfaces, aims towards a change in the philosophy of interactions; the user is not seen any more as an I/O device, becoming the controller of the application. The work also shows a preliminary project of an UIMS to be developed at DI–PUC.

Ilka Dias de CASTRO. "Uma caracterização uniforme para representação de sistemas formais: lógica matemática subjacente à teoria da computação." Ph. D. Thesis. Presentation: 31/04/84 275 p. Advisor: Roberto Lins de Carvalho

Abstract: The purpose of this work is to present some contribution to the understanding of the concept of formalization having in view the foundation of the theory of Computation. For that the concept of an Elementary Characteristic (E-characteristic) is presented, which embodies the concept of a formal system, often presented I different ways and aspects in the theory of Computation, and another notion called an Elementary Smullyan Characteristic (ES-characteristic) is introduced. It is shown that generators, acceptors and transducers are ES-characteristic and that the input of such automata are

postulates that are explicitly described in the theory itself. In this construction it is always possible to indicate, in a natural way that for instance, words generated by a generator *G* are accepted as an input by a transducer *T*. Starting from statements that are true in finite domains, characterized through descriptive theories and their extensions, certain E-characteristic that formalize finite or potentially denumerable domains are developed. And from that formal treatment of the concepts of Herbrand Universe and Herbrand Base are developed.

João Bosco Schuman CUNHA. "Banco de dados para informações acadêmicas e de produção científica". M.Sc. Diss. Presentation: 14/03/84 [irr.] p. Advisor: Antonio Luz Furtado

Abstract: This dissertation presents the specification design of a Data Base to be used in Academic and Scientific Information Systems. The aim of this work was to develop a useful Data Base System to the Brazilian Universities, possible to implement in any available DBMS. An implementation of the System in the Escola Federal de Engenharia de Itajubá - EFEI is also presented.

José Carlos Pereira das NEVES. "Projeto de um compilador transportável para a linguagem EDISON e de implementação do módulo de geração de código". M.Sc. Diss. Presentation: 19/10/84 p. Advisor: Michael Anthony Stanton

Note: Not available.

José Danilo Silvestre FERNANDES. "Especificação de uma arquitetura em camadas de controle para um SGBD e implementação de um mecanismo de controle de concorrência". M.Sc. Diss. Presentation: 27/12/84 166 p. Advisor: Daniel Alberto Menascé

Abstract: The design of distributed database management systems requires that several aspects of resource coordination such as concurrency control, crash recovery and distributed query processing be adequately treated. This dissertation proposes a layered architecture definition for a distributed database management system giving special emphasis to the mechanism for concurrency control. An implementation of concurrency mechanism control in the context of the proposed architecture is also given.

José Elias TALA. "Implementação de tipos abstratos de dados como interpretação de teorias". M.Sc. Diss. Presentation: 10/10/84 75 p. Advisor: Paulo Augusto Silva Veloso

Abstract: Motivated by abstract data types (ADT's) the usual first order logic is generalized to one in which vectors and vector-valued functions are expressible. The notion of implementation of ADT's as interpretation between theories is generalized to this new context, where the greater expressiveness enables dealing with vector entities instead of their components, without resorting to the metalanguage. A constructive procedure for translating well-formed formulas from a theory to another is shown. To illustrate the formalism developed a detailed example of implementation of ADT's is presented, using this generalized notion of interpretation.

José Roberto Lopes de CARVALHO. "Suporte de execução para um compilador transportável para a linguagem EDISON em ambiente de CP/M-86". M.Sc. Diss. Presentation: 28/08/84 p. Advisor: Michael Anthony Stanton

Note: Not available.

Luciana Ferraz THOMÉ. "Sistemas interativos de banco de dados". M.Sc. Diss. Presentation: 23/05/84 107 p. Advisor: Rubens Nascimento Melo

Abstract: The subject of this thesis is the Interactive Database Systems. In this context the two main interfaces: User-Application and Application-BD are analyzed. Both interfaces are studied considering both the modeling and implementation aspects. The work also presents a case study as an application of

this approach. On this case study an Interactive Query System (SICON) was developed and one Interactive Application System (SICAP) for controlling teaching projects in more than 400 Brazilian localities.

Marcelo Corrêa NORBERTO. "Uma contribuição em gerência de sistemas de informação". M.Sc. Diss. Presentation: 03/10/84 161 p. Advisor: Rubens Nascimento Melo

Abstract: The central theme of this thesis is the presentation of a method to give support to the information Management in complex organizations. Using this method, an Information Management prototype was developed aiming the company by the TOP-DOWN/BOTTOM-UP process, in order to offer conditions for information modeling, support to the system analysis phase validation and recording of the organizational behavior in its levels. The prototype validation was tested in a Planning System.

Margarida Maria Berreta PION. "O problema de decisão da lógica temporal estendida". Ph.D. Thesis Presentation: 26/03/84 181 p. Advisor: Marco Antonio Casanova

Advisor: Variations of Temporal Logic have been used both as a specification and as a verification tool for concurrent programs, communication protocols and database integrity constraints. In this thesis a family of Temporal Languages sufficiently flexible to the specification and verification of concurrent programs will be present. The expressive power of these languages is a consequence of the utilization of new modalities defined via grammars. Chomsky's hierarchy then naturally induces a classification of these languages. Initially it is shown that the validity problem for right-linear propositional temporal languages is decidable but the validity problem for context-free temporal languages is not even partially decidable. A sequence of results about the expressiveness of these languages is also presented. Next, a decision procedure for the simultaneous satisfiability problem, for right-linear propositional temporal languages, that is, the problem of determining if two sets are simultaneously satisfiable is presented. Finally a decision procedure for a class of properties of communicating finite-states machines is described. The procedure uses a single data structure, the reduced tableaux, to represent both information about models of wffs, and information about executions of a communication finite-state machines.

Maria Augusta BRANDÃO. "Redes de Petri estendidas através de tipos abstratos de dados: definição e análise". M.Sc. Diss. Presentation: 19/09/84 80 p. Advisor: Daniel Schwabe

Abstract: This dissertation investigates the modeling of concurrent systems, using Petri Nets extended with state variables. This extended Petri Nets is described as abstract data type. In order to analyze these extended nets, a system was designed and implemented which allows the specification and proof of properties of algebraically specified abstract data types.

Mário André GUIMARÃES. "Especificação e implementação de um sistema de pastas eletrônicas". M.Sc. Diss. Presentation: 18/05/84 115 p. Advisor: Daniel Alberto Menascé

Abstract: The low productivity of office workers compared to that of industry workers, the increasing amount of information, the decline in the cost of electronic equipment and the advance in telecommunication are causing radical chances in office operations. This dissertation describes the design and implementation of an Electronic Folder System. The user interface, as well as the access methods developed to support the implementation of electronic folders are also described.

Marisol MENESES ROJAS. "Especificação de uma arquitetura em camadas para um SGBD e implementação dos mecanismos de recuperação de falhas". M.Sc. Diss. Presentation: 27/07/84 129 p. Advisor: Daniel Alberto Menascé

Abstract: The design of distributed database management systems requires that several aspects of resource coordination such as concurrency control, crash recovery and distributed query processing be adequately treated. This dissertation proposes a layered architecture definition for a distributed database

management system giving special emphasis to the mechanisms for crash recovery. An implementation of crash recovery mechanisms in the context of the proposed architecture is also given.

Nadia Abrahão HIJJAR. "Avaliação da performance do projeto físico de banco de dados: um estudo de caso". M.Sc. Diss. Presentation: 05/10/84 131 p. Advisor: Rubens Nascimento Melo

Abstract: The physical design determines the file structure and the access method for data base. Although several methods of automatic selection have been proposed in this area, in practice, the analyst develops some alternatives based on the analysis of the data base applications. Generally, the choice of the alternative that gives the best performance is not obvious, then an important step in the design is the performance estimate for physical data base. This work presents two methods of performance estimate for physical data bases and a case study where the data base system for "Diretoria de Pessoal Militar da Aeronáutica", is designed and implemented. Real measure of the estimated values during the implementation of the selected alternative of the physical data base was also included in this work.

Olivaldo Rezende de CASTRO. "Auditoria de aplicações computarizadas". M.Sc. Diss. Presentation: 12/06/84 215 p. Advisor: Arndt von Staa

Abstract: Not provided.

Orivaldo de Lira TAVARES. "Protocolos de transferência de arquivos para redes de computadores". M.Sc. Diss. Presentation: 31/05/84 184 p. Advisor: Daniel Schwabe

Abstract: This dissertation discusses file transfer protocols in the context of computer networks. In suite, it presents the specification and shows the implementation of a file transfer protocol of general use, allowing for file system independence and with an automatic transfer restart option. This protocol is situated above the transport layer, that is, in the session, presentation and application layers within the Open Systems Interconnected architecture proposed by ISO.

Patrício Armando ZUÑIGA de SPIRITO. "Protocolo de acesso a uma rede local de computadores". M.Sc. Diss. Presentation: 27/07/84 100 p. Advisor: Daniel Schwabe

Abstract: This dissertation presents a description of the first four layers of the REDPUC LAN architecture, and the implementation of kernel of the transport layer, the transport layer itself, and the internetwork layer simulator of REDPUC. For each procedure, a description of its use, its interfaces and internal implementation is given. The appendix includes implementations considerations and a description of the modifications to the network kernel necessary for ROM installation. The modifications to the transport layer necessary to install a communication interrupt scheme, are also presented.

Pedro Isaac Candel CAMPELO. "PUCLOG, uma versão do PROLOG". M.Sc. Diss. Presentation: 30/07/84 115 p. Advisor: Roberto Lins de Carvalho

Abstract: A PROLOG's version, called PUCLOG, is presented. We discuss its syntax and semantics in detail. We include a description of design and implementation and considerations for future expansions and other implementations. A brief discussion of PROLOG, with its actual solutions, and implemented examples are included.

Raul Cesar Baptista MARTINS. "Método dos transformadores de dados". Ph.D. Thesis Presentation: 03/02/84 174 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work presents a new programming method, called the data transform programming method. In particular, we present a specialization of data transform programming to deal with file processing applications. Direct comparison is made with Jackson's approach by the presentation of uniform solutions to problems that cannot be solved through has basic method. The next method consists

of the application of data transformations to the abstract problem statement, following the formal notions of problem reduction and problem decomposition. Data transformations are expressed in programming terms through a basic set of data type constructors. The method reduces the original problem to a set of sub-problems that can be solved through the direct application of Jackson's method. It produces a solution which is correct by construction.

Valeria Esther NIGRI. "Uma interface de tipos abstratos para banco de dados para CAD". M.Sc. Diss. Presentation: 20/06/84 131 p. Advisor: Rubens Nascimento Melo

Abstract: Databases for CAD (Computer Aided Design) have several requisites and characteristics that differ fundamentally from the conventional commercial databases. Particularly, the use of Interactive Computer Graphics techniques and methods of engineering require a variety of complex data types and a more dynamic database schema. This work first presents an overview of the programming language and database techniques to solve this problem and then an Abstract Data Type System (STAD) as an interface for relational databases is proposed as a proper solution.

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Adelia Cecília Gonçalves NUNES. "Modelagem de sistemas de E/S". M.Sc. Diss. Presentation: 25/02/85 [irr.] p. Advisor: Daniel Alberto Menascé

Abstract: New analytic modeling techniques have been recently developed in order to evaluate the performance of complex input/output systems. This dissertation describes a set of techniques which are used to model the following I/O systems: single path I/O systems involving channels, RPS and/or NON-RPS disks; single path I/O systems involving channels, RPS disks and controllers; single path or multipath I/O systems involving channels, RPS disks, controllers and head-of-strings. Those techniques have been implemented with execution speed and main space saving concerns in mind.

Álvaro Cesar P. BARBOSA. "Facilidades de banco de dados relacional para aplicações não convencionais". M.Sc. Diss. Presentation: 13/12/85 [irr.] p. Advisor: Raul Cesar Baptista Martins (IBM)

Abstract: An environment for the development of new applications of Database has basically three subsystems: A UIMS (user interface management system), a MBMS (method base management system) and a DBMS (database management system). This work contributes to such an environment adding to it database facilities of two kinds: A relational database interface for general use and the (partial) implementation of an Abstract Data Type System oriented to new application of database.

Antonio Carlos Pereira MAIA. "Estudo e implementação de técnicas de compressão de dados". M.Sc. Diss. Presentation: 18/01/85 [irr.] p. Advisor: Antonio Luz Furtado

Abstract: This work s main goal was the study and implementation of data compression techniques, in a Brazilian minicomputer (COBRA-530). Initially, we show a survey of the techniques presented in the literature. Through the application of the semantic independent techniques to a set of files, a data analysis was done. This work was used as a tool in the analysis of the benefits and constraints associated with the use of each technique, and, may be useful in the choice of the most indicated technique to a given application.

Bruno DUPIRE. "Problemas variacionais, sua aproximação e formulações Mixtas". Ph.D. Thesis Presentation: 26/06/85 132 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: This work presents a unified approach to Linear Variational Problems. We give an answer to some mathematical questions and we develop a general theory of approximation, which contributes to clarify numerical problems arising in the computer solution of partial differential equations.

Carlos Eddy Esaguy NEHAB. "Por uma nova teoria geral dos algoritmos". M.Sc. Diss. Presentation: 28/02/85 p. Advisor: Roberto Lins de Carvalho

Note: Not available.

Diógenes Carvalho AQUINO. "Projeto e implementação de um tradutor léxico para a linguagem modula-2". M.Sc. Diss. Presentation: 14/03/85 [irr.] p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The growth of Computer Science in Brazil has fostered increasing requests for basic software, such as operating systems, compilers, etc. This dissertation presents the specification and the implementation of a Lexical Translator for MODULA-2. The translator transforms a source program in a sequence of tokens, besides building and maintaining a Symbol Table for the program. The translator was totally implemented and is reusable.

Fares Franc Abinader RODRIGUES. "Especificação e implementação de um sistema interativo para tratamento de gramáticas". M.Sc. Diss. Presentation: 15/08/85 75 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: For the development of programming language compilers, interpreters, and/or translators, studies and evaluations in grammars are needed. In the dissertation several operations which can be applied to grammars are discussed: for example, the elimination of left-recursivity, left-factoring, the finding of the first and follow sets, and the elimination of useless nonterminals. A system offering facilities for the storing, recovery, modification and presentation of grammars has been implemented. The system is interactive, and was developed as a microcomputer tool.

Jeferson Ferreira SOARES. "Uma ferramenta de programação em lógica para construção de protótipos de sistemas a partir de suas especificações funcionais". M.Sc. Diss. Presentation: 05/07/85 189 p. Advisor: Raul Cesar Baptista Martins (IBM)

Abstract: This work presents an interactive software tool to be used in the systems design activity. Functional specifications are treated as systems executable prototypes by this tool, whose basic idea is testing and evaluating the correctness of those specifications under three major points of view: a)The observation of the syntactic rules to be followed in the building of diagrams that represent systems specs according to a specific structured analysis methodology. b) The application of the heuristics of use proposed by the same systems development methodology. The consistency of the hierarchical functional partitioning of those specs. With a logic programming language, the PROLOG, used in the implementation of the software tool, a logic model of the mentioned systems design methodology was built. This model is used in the performing of the symbolic executions through which the tests and evaluations are made.

José Laédio MEDEIROS. "Especificação e implementação de um servidor de nomes para uma rede local". M.Sc. Diss. Presentation: 28/02/85 198 p. Advisor: Daniel Alberto Menascé

Abstract: The problem of naming and placement of objects in a Local Area Network environment is discussed in this work. Individual objects such as terminals, file servers, persons or processes, as well as group of objects, such as a user access control list are considered here. This dissertation presents a complete and detailed specification of a Name Server (NS), along with a description of its implementation in the local area network REDPUC. The main functions of this NS are: the establishment of the dynamic mapping between process names and transport level ports as well as the management of the process name space.

Josefino Cabral de Melo LIMA. "DBTGinho/CAD: um sistema de gerência de banco de dados para aplicações não convencionais". M.Sc. Diss. Presentation: 23/12/85 233 p. Advisor: Rubens Nascimento Melo

Abstract: A Database Management System (DBMS) oriented to CAD applications differs in several points from a traditional DBMS. This work first presents the main characteristics of such DBMS and then shows the specification and implementation of DTGinho/CAD, CAD oriented extension of a conventional DBMS called DBTGinho.

Leonardo Lellis Pereira LEITE. "Projeto e avaliação de desempenho de redes locais isoladas e interligadas". Ph.D. Thesis Presentation: 25/10/85 225 p. Advisor: Daniel Alberto Menascé

Abstract: The interconnection of workstations through local area networks has been a subject of great interest in the past few years. This thesis deals with the problem of performance evaluation of isolated and interconnected local area networks. Approximate results for the average packet delay are obtained for the case of token bus local networks. Upper and lower bounds for the average delay are also obtained for the latter type of networks. Results for the average end-to-end packet delay for a set of interconnected are derived. This analysis takes into account the internetwork topology, as well as the external traffic matrix. A comparative analysis between the exhaustive and non-exhaustive service discipline in a set of token bus interconnected networks is shown. Finally, the thesis focuses the problem

of optimal allocation of workstations to a set of interconnected networks. Efficient heuristic solutions are presented.

Luiz Geraldo Rocha CARVALHO. "Um servidor de telex para redes locais de computadores". M.Sc. Diss. Presentation: 20/02/85 140 p. Advisor: Daniel Alberto Menascé

Abstract: This dissertation presents the specification and implementation of a local area network telex server, especially for REDPUC. The telex server provides the local area network workstations with the facilities typically available for teletypes connected to the public telex network, besides additional services, such as: online message retrieval, message redialing and selective message routing.

Luiz Julião BRAGA FILHO. "O *SAFO* e a visão do usuário". M.Sc. Diss. Presentation: 06/09/85 p. Advisor: Roberto Lins de Carvalho

Note: Not available.

Marcos Mota do Carmo COSTA. "Descrição e implementação de um tradutor Pascal para código executável sob a forma de cláusulas". M.Sc. Diss. Presentation: 26/02/85 108 p. Advisor: Roberto Lins de Carvalho

Abstract: The need for reliable software and the search for more knowledge on programming has motivated researches to develop techniques on proving facts about programs, and, in particular, their correction. The possibility of using techniques such as symbolic execution and controlled execution of parts of programs, through its representation in clause forms and the resolution principle, constitutes an important contribution for studies in this area. This dissertation presents a specification and an implementation of a PASCAL translator. Such translator changes a source program - using a syntactic parser SLR and semantic actions specified by attribute grammar - into clauses of first order, which main goal is the program analysis.

Marcus Vinitius da Silva BAFFA. "Uma interface relacional com otimização do processamento da consulta". M.Sc. Diss. Presentation: 11/03/85 139 p. Advisor: Rubens Nascimento Melo

Abstract: One of the existing problems concerned with the construction of a Relational Interface is the query optimization. With this purpose several optimization techniques have been sugested. This work presents a specification and a partial implementation of a Relational Interface that optimizes the coordinating sort orders in temporary relations. A description of Smith and Chang optimization method and the design of a Relational Interface with details of the data structures and algorithms are presented. A representative graph that encodes the queries makes the Relational Interface independent from the query language.

Mario Roberto Folhadela BENEVIDES. "Uma implementação de protocolo multienlace em um computador COBRA 540". M.Sc. Diss. Presentation: 11/03/85 99 p. Advisor: Daniel Alberto Menascé

Abstract: The multi-link protocol was standardized by CCITT in a X.25 Recommendation. Its objective is to multiplex virtual circuits (level 3) in one or more links (level 2), making possible the exchange of information by multiple links in parallel. The objective of this dissertation is to present an implementation of the multi-link protocol for COBRA - 540 with two synchronous links, propose some modifications in COBRA'S X.25 implementation and to test this protocol.

Mario Cesar Marques RODRIGUES. "Implementação do protocolo de transporte, classe 4, para o COBRA-450". M.Sc. Diss. Presentation: 19/08/85 122 p. Advisor: Daniel Alberto Menascé

Abstract: The Transport Layer is of great importance in The Open Systems Interconnection Reference Model. A standard for The Transport Layer Protocol is being considered by several international

organizations. Class 4 of The Transport Layer Protocol has error detection and recovery mechanisms, and is used when high confidence in data transport required. This dissertation is an implementation of the Transport Layer Protocol Class 4 for a COBRA- 540 System, using the "Sistema Operacional de Disco" (SOD).

Marli de Freitas Gomes HERNANDEZ. "Estudo experimental dos efeitos da mudança de passo na estabilidade de métodos *Adams-Mouton-Nordsieck"*. M.Sc. Diss. Presentation: 12/03/85 107 p. Advisor: Therezinha Costa Ferreira Chaves

Abstract: In this work we present computational results of an experimental study on the stability of the Adams-Moulton Methods in the form of Nordsieck with steps k = 3,4 and 5, and orders p = 4,5 and 6 respectively with random step changing frequencies γ and random step changing factor α (γ defines the number of approximations calculated with the same size of step (αh)).

Nelson Lopes DUARTE FILHO. "Especificação e implementação de um servidor de arquivo para redes locais". M.Sc. Diss. Presentation: 26/07/85 p. Advisor: Daniel Schwabe

Note: Not available.

Oswaldo Kazuo TAKEDA. "Estudo de metodologias e análise experimental de uma ferramenta para o projeto de sistemas de controle distribuído". M.Sc. Diss. Presentation: 05/08/85 242 p. Advisor: Carlos José Pereira de Lucena

Abstract: Distributed Control Systems constitute new class of systems, which substitute with advantages the centralized systems, specially when the controlled equipment are physically distributed. A workstation can be located close to the equipment being controlled, and a communications network can be used to enable the stations to communicate in order to co-ordinate their actions. For that to be accomplished the software must be carefully designed to exploit the advantages of distribution. In this work the emphasis has been placed on the evaluation of CONIC system. The CONIC system is a set of techniques and tools for the design, implementation and management of distributed control systems.

Otavio Pêcego COELHO. "Especificação e implementação de um *gateway* entre uma rede local - e uma rede pública - RENPAC". M.Sc. Diss. Presentation: 20/05/85 138 p. Advisor: Daniel Alberto Menascé

Abstract: In this thesis the interconnection of networks is discussed, with special emphasis on the connection between the local are network REDPUC and the public network RENPAC. The architectures of the internetwork and the gateway REDPUC-RENPAC are described, as well as the architecture of X.25 protocol software implemented in the gateway.

Pablo Javier de La Quintana BRUGGEMANN. "Descrição da implementação e nova proposta para o sistema SAFO". M.Sc. Diss. Presentation: 25/02/85 154 p. Advisor: Roberto Lins de Carvalho

Abstract: Software that use inference had been very used in last few years and are the main part of an expert system. This work introduces the basic concepts used in building an inference system. The inference machine of a system called SAFO (which permits to build expert systems prototypes) is described. SAFO's language, features of that system, comments about design decisions and there consequences are also described.

Paulo Fernando Almeida dos SANTOS. "Um sistema gráfico independente de dispositivo e interativo". M.Sc. Diss. Presentation: 01/03/85 p. Advisor: Rubens Nascimento Melo

Abstract: In computer graphics environments with a great variety of devices, the programs portability among them is a problem. In this work, the efforts to achieve device independence and the implementation of graphic software, according to CORE standards, are presented.

Paulo Rogério FOINA. "Sistema formal para especificação de arquiteturas de computadores". Ph.D. Thesis Presentation: 13/03/85 145 p. Advisor: Roberto Lins de Carvalho

Abstract: This paper explores new ways of specifying computer architecture projects. We have sought solutions in a new framework, allowing the synthesis and the systematization of new projects. A new algorithm description language (LINDA) is presented. Examples are given at the end where traditional and modern architectures, such as von-Neumann, data flow and computers networks, are described.

Paulo Roma CAVALCANTI. "Ferramentas para modelagem geométrica e edição gráfica". M.Sc. Diss. Presentation: 27/08/85 126 p. Advisor: Rubens Nascimento Melo

Abstract: The aim of this work is to establish conditions for the construction of a basic graphic processing environment. It is composed of three main parts: The design and implementation of a CORE like graphics system; a survey and analysis of some known graphic editors, using a proposed Terminology; the design and implementation of a graphic editor. A geometric modeling oriented interface is also implemented.

Roberto IERUSALIMSCHY. "Interface de barra microprogramada para a rede local REDPUC". M.Sc. Diss. Presentation: 05/12/85 61 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Not provided.

Sidney Dias da SILVA. "Uma ferramenta para especificação de sistemas interativos". M.Sc. Diss. Presentation: 02/08/85 193 p. Advisor: Rubens Nascimento Melo

Abstract: This work presents ESPEDI - a tool for specification of interactive systems. The basic characteristic of User Interface Management Systems (UIMS) are reviewed, positioning the problem of modeling the man-machine from a user-centered perspective. A specification language is proposed, and examined the main characteristics of the tool that implements it. ESPEDI is part of the UIMS-PUC, being developed in the DI/PUC-RJ.

Walter Anibal TELLO ECHEGARAY. "Um modelo de controle de qualidade para o projeto lógico de banco de dados". M.Sc. Diss. Presentation: 08/04/85 p. Advisor: Arndt von Staa

Note: Not available.

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Anílton Joaquim da SILVA. “A construção de erro e o seu efeito no erro global - resultados experimentais para alguns métodos lineares M-cíclicos”. M.Sc. Diss. Presentation: 05/09/86 58 p. Advisor: Therezinha da Costa Ferreira Chaves

Abstract: In this work, the error constants of some linear M-cyclic methods are computed, the performance of these methods is studied by applying them to some ordinary differential equations with initial condition.

Antonio Cláudio FERREIRA. “Doutor - um sistema especialista de auxílio ao diagnóstico”. M.Sc. Diss. Presentation: 28/02/86 132 p. Advisor: Daniel Schwabe

Abstract: The Doutor system - an expert system to aid medical diagnosis - works, originally, in the area of Pneumatology. It has been developed with Artificial Intelligence techniques and uses knowledge acquired from expert physicians. Some components of early versions of the Safo system (a software tool for the development of expert systems) have been used as Doutor's inference engine. The system is expected to contribute to the gathering of experience in the area of knowledge engineering and in the actual use by medicine students, general practitioners and expert physicians.

Áurea Guerreiro dos SANTOS. “Sistema de gerência de interface do usuário: especificação e interpretação de diálogos”. M.Sc. Diss. Presentation: 25/08/86 85 p. Advisor: Rubens Nascimento Melo

Abstract: The recent increase in the use of computers in our society has brought the end user to interact directly with the machine. Interactive Systems are user interface oriented systems and need special tools and techniques and a different approach to system design. This work contributes to a project of an Interactive Graphics Systems development Environment showing how to extract and interpret the dialog part from the system global specification.

Carlos Roberto WAGNER. “Teste de programas: integração de dois métodos”. M.Sc. Diss. Presentation: 18/12/86 110 p. Advisor: Arndt von Staa

Abstract: The objective of this dissertation has been to select complementary software test methods and to propose an integration among them in order to reduce the amount of work in test runs. An automatic structural test case generator has been implemented and the feasibility automation of program testing has been analyzed.

Celso NISKIER. “Prisma: utilização de paradigmas complementares para a aquisição de especificação de software”. M.Sc. Diss. Presentation: 24/11/86 169 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work presents a study about software specification acquisition process based on the utilization of three representations - Data Flow Diagrams, Entity Relationship Models and Petri Nets - these representations are seen as complementary "views" or paradigms combined in order to capture more widely the knowledge about the specification. PRISMA can be regarded from different angles: as formalization of heuristics for structuring, validating and testing the complemantarity of the three representations; as a multiparadigmatic environment for software specification acquisition; and finally as a "test jig" for the above mentioned ideas.

Davidson CURY. “Uma estrutura eficiente de armazenamento e recuperação de informação para ambientes de desenvolvimento de programa”. M.Sc. Diss. Presentation: 18/12/86 236 p. Advisor: Arndt von Staa

Abstract: The subject of this dissertation is the Software Base of a wider project, MOSAICO, a CASE system for supporting program development. MOSAICO'S Software Base constitutes the database of all

technical information about the project of a program developed within MOSAICO'S environment. Here are defined the objectives, the specifications, the architecture, the logical design, and the implementation of the Software Base. It is also found here, a evaluation of the database available in the market. Those databases are analyzed from the point of view of MOSAICO'S constraints and needs. Finally is carried out a critical evaluation of the model implemented.

Edward Hermann HAEUSLER. "Procedimentos para tradução de resolução em dedução natural". M.Sc. Diss. Presentation: 24/04/86 191 p. Advisor: Paulo Augusto Silva Veloso

Abstract: The resolution method to generate proofs by machine is widely used because it is a quick way to check whether a formula is a theorem. But the proofs it provides are hard to read. We set out criteria for readability of proofs, and then present a function which translates resolution proofs into Natural Deduction proofs. The latter will satisfy the criteria. Besides, this work tries to provide a characterization for the intuitionisticaly provable formulae.

Emiko HIRAGA. "Implementação de um interpretador do código M". M.Sc. Diss. Presentation: 29/10/86 105 p. Advisor: Michael Anthony Stanton

Abstract: The implementation of an M-code interpreter forms part of a project whose main purpose is the implementation of Modula-2 on locally manufactured 8-bit microcomputers. M-code is the object code of a virtual machine architecture particularly suited to execute Modula-2 programs. After a brief description of the evolution of programming language, the evolution of abstract machines for languages of the Pascal family is also presented. The M-machine is described in detail, and an specification in C of the interpreter is given in an appendix. Finally, the phases of the above mentioned project are described.

Francisco Castro SIMPLICIO FILHO. "Um método de análise por protótipos baseados em representação de conhecimentos". M.Sc. Diss. Presentation: 22/08/86 127 p. Advisor: Carlos José Pereira de Lucena

Abstract: Formal representation of the knowledge acquired from software specification activities has been of great interest both in the fields of software engineering and artificial intelligence. This paper presents a systems analysis method - MAPCon - which borrows concepts from techniques available in those fields. Systems analysis is considered to be based upon an irregular, but incremental, knowledge-acquisition process of observing and modeling reality. Such a process admits tries and recoveries as healthy means for acquiring knowledge. MAPCon is both a method and a tool to support the systems analysis task in acquiring and representing knowledge about the functioning of an applicative, whether it already exists or is still a project. The end product of MAPCon is a set of formal functional specifications that explicitly represent the functional knowledge acquired throughout the analysis task. These specifications can indeed be executed and mechanically handled, thus, MAPCon makes use of them to set up a development environment that provides facilities to simulate the applicative's expected behavior (in a prototype fashion) and to reuse at least part of the efforts made to analyze and to implement the software.

Gustavo do Rosário BATISTA. "Uma metodologia para o projeto de diálogos em sistemas gráficos interativos". M.Sc. Diss. Presentation: 21/01/86 109 p. Advisor: Rubens Nascimento Melo

Abstract: The design of interactive computer graphics based systems is studied in this work having as a starting point issues related to the man-machine interaction. The dialogue design is a specialized task if we want to reach functional requirements and allow the user to operate the system with good performance. The proposed form of application development looks for systems that run under an UIMS (User Interface Management System), although it is general enough to be used in any software environment. At the same time we are searching for dialogues adequately oriented to user skills and knowledge, we obtain, as a byproduct, the application decomposition into functional modules.

José Augusto Raposo ALENTEJANO. "Modelo básico de sistema para estudo de linguagens de programação". M.Sc. Diss. Presentation: 14/08/86 206 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: In order to assist designers in developing new programming languages, and users in learning them, a prototype has been developed for a system capable of displaying on a screen each step taken during the execution of a program. Development milestones are describes, as are the alternatives chosen. The routines that display program execution are described in depth. The subset of PASCAL used in carrying out the basic programming language mechanisms is also described.

José Gonçalves PEREIRA FILHO. "Projeto de um sistema operacional em tempo real para aplicação de controle de processos". M.Sc. Diss. Presentation: 31/03/86 139 p. Advisor: Albrecht Karl von Plehwe

Abstract: Most of the operating systems based on Intel 8080 processor and used in process control applications have been designed to small machines, without much RAM memory capacity and with programs stored in ROM memory. Due to the reduction of costs of hardware, machines with large RAM memory areas, address mapping mechanisms and equipped with flexible and even hard disk devices are now frequently found. In lack of control process systems to this kind of machine is at the basis of the objectives of this work. First a comparison of four Real Time Operating Systems used in control process applications is presented. All of them are bound to small microcomputers with the Intel 8080 processor. Follows the proposal of a Real Time Operating System to more powerful machines.

Lucy Vidal SILVA. "Modelos de implementação para o paralelismo em ADA e RED". M.Sc. Diss. Presentation: 14/08/86 2 vols. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The languages Ada and RED, recently created for the development of large software systems, include modern facilities for concurrent programming. In this dissertation an implementation model supporting parallelism in both languages is designed and formally defined. Also presented are algorithms which, executing on that model, define the semantics of concurrent programming in both languages.

Luiz Alberto A. Medeiros MARTINHO. "Servidor teletex para rede local de computadores". M.Sc. Diss. Presentation: 02/04/86 148 p. Advisor: Daniel Schwabe

Abstract: Teletex is a communication service which enables text correspondence to be sent and received automatically and which respects both the content and the layout of the text. Teletex, as defined, is an important step towards office automation, because it offers the opportunity to combine word processing and text transmission that today is transmitted by mail, messengers, telex or facsimile. Local area network (LAN) has been used as support for office automation application. This thesis proposes the adoption of a system using a teletex server to be shared by all users of LAN, instead of implementing a teletex protocol in each workstation.

Luiz Eugênio BRAVO SOZA. "Um ambiente de programação para uma linguagem de ícones". M.Sc. Diss. Presentation: 05/09/86 110 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work presents a programming environment for an iconic/textual language oriented towards the learning of programming. The language uses graphical representations permitting the student to formulate and resolve problems in an easier way. The system supports a visual interface for creating, deleting and running programs in an animated and visual fashion. A SMALLTALK version has been chosen for the implementation of the language.

Maria Luiza Dias MARTINS. "Definição e especificação de um protocolo de transporte padronizado para rede local COBRA". M.Sc. Diss. Presentation: 29/07/86 202 p. Advisor: Daniel Schwabe

Abstract: The research present in this thesis concerns the use of standard protocols for local area networks. The main goal is the choice of an adequate class of transport protocol to be used in a

homogeneous and reliable environment, to which the Cobra local area network is targeted. The thesis discusses also the of formal description techniques for protocols, presenting a specification of the chosen protocol using ISO's proposed language Estelle.

Mariza Carpenter Fraga LOURENÇO. "Simulação de um algoritmo de defecção e correlação de impasses em redes de computadores". M.Sc. Diss. Presentation: 17/03/86 100 p. Advisor: Daniel Alberto Menascé

Abstract: The buffer deadlock is a problem that limits and restricts the design of computer networks on the basis of store-and-forward communication. This dissertation implements, simulates and analyses the performance of a detection and removal algorithm of deadlocks in store-and-forward networks. Measures are collected to indicate the necessary amount of time to detect and remove a deadlock in a computer network depending on the number of nodes involved and on the number of buffers in the nodes.

Maurício Roma CAVALCANTI. "Realização de um sistema interativo para estudo de linguagens de programação". M.Sc. Diss. Presentation: 14/08/86 176 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work deals with the definition and the implementation of an environment aimed at teaching and aiding programming language design. The different approaches that were adopted, together with their underlying problems, are described. Moreover some techniques for accompanying program runs and a language containing high level mechanisms such as parallel processing were included in the resulting system.

Noemi de La Roque RODRIGUEZ. "Um sistema operacional dedicado a MODULA-2 para um microcomputador". M.Sc. Diss. Presentation: 24/04/86 147 p. Advisor: Michael Anthony Stanton

Abstract: Not provided.

Paulo William Cardoso MACIEL. "Desenvolvimento de dicionários de dados inteligentes". M.Sc. Diss. Presentation: 12/03/86 111 p. Advisor: Antonio Luz Furtado

Abstract: In this work, the prototype of a computerized tool to aid in the interactive conceptual design of databases, based on the Entity-Relationship model is described. The functions of this tool are a subset of those of a conventional data dictionary system, however they differ in the way it is structured. The expert knowledge about design/redesign of data conceptual "views", was embedded in a knowledge base, and has as objective the consistent creation/maintenance of the conceptual schema. For the creation of conceptual views, design requirements are established. For the schema redesign, update propagation rules are stored in the knowledge base.

Sérgio GENARO. "Construção de sistemas epecialistas usando o SAFO". M.Sc. Diss. Presentation: 16/04/86 2 vols. Advisor: Roberto Lins de Carvalho

Abstract: Expert Systems are actually the most important artificial intelligence application area for the near ten years, mainly after the Fifth Generation Japanese project. This text is a didatic approach about the subject for aids other people concerned in the matter. The core idea is the development environment supplied for the SAFO inference machine, building in PUC/RJ for Brazilian searchers. This text justify the resolution refutation method - borrowed of automatic theorem proving - used by SAFO and present sights of its state of art giving the international publication. Finally are showed some application examples.

Silvesneto Abreu GONÇALVES. "Teste sistemático de programas: experimento e análise". M.Sc. Diss. Presentation: 30/05/86 222 p. Advisor: Arndt von Staa

Abstract: The main goal of the present work has been to search, select, and practice existing methodologies that, based on requirements of completeness, validity, and reliability, generate program test cases for programs considered to be complex (large size). Further this work has intended to carry out viability analysis on the chosen methodologies in terms of costs x quality and value x quality relationships. The methodologies and the concrete results of the experimental evaluation are presented in details. Automation possibilities were also pointed out and some were partly implemented.

Solon Benayon da SILVA. "Uma experiência em validação de protocolos aplicada a redes locais". M.Sc. Diss. Presentation: 15/04/86 119 p. Advisor: Daniel Alberto Menascé

Abstract: Several research groups around the world are dedicated to protocol validation and verification. IBM Zurich Laboratory has done significant work in this direction and as a result a complete line of prototype tools for automatic protocol validation was developed. Each one of these tools was primarily defined for specific types of protocols. On the other hand, PUC/RJ has a local network project, REDPUC, which includes a communication protocol that has an special characteristic and specific definition. The main objective of this thesis is to verify how adequate the tools developed in IBM Zurich Laboratory are to validate the REDPUC protocol. In addition, we intend to make these tools available here so we can gain experience in the field of protocol validation.

Sonia Limoeiro MONTEIRO. "Análise lógica de dialetos do português". Ph.D. Thesis Presentation: 10/12/86 138 p. Advisor: Roberto Lins de Carvalho

Abstract: Discussions about the grammaticality of natural languages can be traced back to Chomsky's work, and to more than 2.000 years the dedication of philosopher to the Meaning Theory. By putting together two paradigms of the Computer Science, namely, First Order Language (FOL) and the use of Regular Grammars as descriptions of subset of Formalizable Languages, a better understanding of the existent relations between sintax and semantic of PORTUGUESE Formalizable Dialects can be achieved. From a syntactic point of view, the emphasis is given to the construction of noun phrases of PORTUGUESE, in such a way that the parser can be process them in real time. From a semantic point of view, the emphasis is given to the "definite descriptions". For this purpose, the construction of a First Order Applied Language (LPOA) is proposed, which is a FOL extended to functors. LPOA is an intermediate language between PORTUGUESE Dialects and a FOL, in such a way that the "deep structure" of the Dialect sentences can be captured and represented on it.

Theonilla Estelitta C. PESSOA. "Projeto de programas assistido por computador: um sistema especialista para o método de Jackson". M.Sc. Diss. Presentation: 13/03/86 128 p. Advisors: Raul Cesar Baptista Martins (IBM) and Daniel Schwabe

Abstract: This paper reports our research into the construction of an expert system for software development. We have been investigating both the programming-in-the-Large and the programming-in-the-small problems, but the Later has a greater number of methodologies that aim at its solutions (1, 2, 3). In particular, the Jackson Program Development Methodology (JSP) has been used to solve sequential file processing problems with considerable success. However, its presentation, with two exceptions (4, 5), has always been through case studies, indicating the use of a number of heuristics for its adequate use. We have undertaken the design and implementation of an expert that aids the inexperienced programmer in the use of JSP. The system uses as inputs the Jackson diagrams describing the input and the output of the program; the functional description of the elements of the of the output file and the physical description of the input file. The output produced is the complete Jackson diagram of the program. In order to construct this system, we have been able to precisely characterize what type of information must be extracted from the statement of the problem, as well as disambiguating number of concepts in the definition of the methodology. We have been able to define a knowledge base of "well known building blocks" that can be used in the solutions of common problems. A prototype exists that is able to solve "balance line, multiple break, counting batches" types of problems. It is implemented using logic programming, at the moment micro-Prolog.

Vanilde MANFREDI. "Sistemas de apoio à decisão: um estudo de caso". M.Sc. Diss. Presentation: 28/02/86 99 p. Advisor: Rubens Nascimento Melo

Abstract: This work presents a study of Decision Support Systems (DSS). The main concepts, characteristics and components of a DSS are described. Some techniques for DSS design and implementation suggested in the literature are analyzed and the design of a DSS for resource allocation in civil engineering projects is also presented.

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Alexandre Ibrahim DIRENE. "Uma ferramenta para mapeamento de esquemas de bancos de dados em estruturas físicas". M.Sc. Diss. Presentation: 17/02/87 122 p. Advisor: Antonio Luz Furtado

Abstract: The development of software tools to aid data base systems design is largely scattered among the different areas of application in the last few years. This paper presents the analysis and the building of a tool for mapping logical modular data base schemas into data files structures and their application programs.

Carla Abreu PORTILHO. "Uma ferramenta para apoio da utilização de lógica no ensino". M.Sc. Diss. Presentation: 31/07/87 80 p. Advisor: Carlos José Pereira de Lucena

Abstract: The report of positive results obtained through the use of logic programming, in particular PROLOG, at English schools (the continuation of a project started at the Computing Department of Imperial College) has provided the motivation for this work. After using PROLOG in a simple and direct way, software environments were developed for the language (ex: MITSI) which started to be used mostly to simplify the user interface. This dissertation describes the design and implementation of a software environment to assist on the use of logic for the preparation of educational software. The environment we have produced manages to remove many of the weak characteristics identified in tools evaluated by teachers in England. Geography and Portuguese Grammar were the areas chosen for the development of test cases for the system.

Carlos Alberto M. PIETROBON. "Visualização tridimensional em sistemas gráficos segundo a proposta GKS-3D". M.Sc. Diss. Presentation: 23/03/87 204 p. Advisor: Rubens Nascimento Melo

Abstract: In the recent years, the graphics systems standards have developed greatly and today there are a lot of proposals for graphics standards in development. This work introduces the GKS-3D with emphasis on the study of the three-dimensional visualization process and graphics output primitives. A brief graphics systems standardization historical will be shown, along with the GKS's philosophy and functionality. A comparison between GKS-3D and two other systems (CORE and PHIGS) is also supplied. Finally, a conclusion and examples of the use are presented.

Cesar Luís Sovat ALLEVATO. "Um sistema de controle de E/S para uma rede local de microcomputadores da linha Itautec I-7000". M.Sc. Diss. Presentation: 31/08/87 195 p. Advisor: Albrecht Karl von Plehwe

Abstract: This dissertation develops and implements an input/output system as a portion of programming of a local network for microcomputers Itautec I-7000. The system is composed by set of modules, one for each device supported, where each module is composed by one set of subroutines. Reentrance problems are resolved with the attendance of a developed multiprogramming nucleus, implemented through binary semaphores for mutual exclusion among the several process.

Claudia FERLIN. "Um sistema especialista para auxílio na interpretação de testes projetivos na área de psicologia". M.Sc. Diss. Presentation: 27/03/87 118 p. Advisor: Daniel Schwabe

Abstract: This dissertation presents a prototype of expert systems for supporting the interpretation of psychological projective tests, exemplified by the Rorschach Test. It specifies and implements a generic way for representing the knowledge in such domain class. Finally, the features needed for definition of a methodology for acquisition of imprecise knowledge are presented.

Cristina MARINS. "Interfaces inteligentes". M.Sc. Diss. Presentation: 15/09/87 105 p. Advisor: Rubens Nascimento Melo

Abstract: The subject of this thesis is the study of man-machine relationship, aiming at a natural and friendly user interface. The evolution of traditional systems to interactive ones, the emergence of new techniques for system project and development and the increasing need of intelligent user-system interfaces are expounded. Intelligent interface concepts and actual subject research are described. In particular, this work intends to contribute to EITIS (Environment of Integrated Tools for Interactive Systems) project, being developed at PUC, by introducing some Intelligent Interfaces techniques.

Eliseu Monteiro CHAVES FILHO. "Sistema de comunicação de dados para interligação de microcomputadores - hardware e software". M.Sc. Diss. Presentation: 27/03/87 53 p. Advisor: Albrecht Karl von Plehwe

Abstract: This dissertation describes the development of a local network for microcomputers. The aim is to obtain a simple, low cost system with adequate characteristics for applications such as access to file and printer servers. The network has a multi-connected double ring topology, called Forward Loop Backward Hop, which presents better reliability and performance compared to the other simpler types of ring topologies. For data transport a packet switching technique is used. The communication medium is the twisted pair, and the transfer rate is 800 kbps. The access to the network is through a microprocessor-based interface. Two microcomputers can be connected to each interface using RS-232 compatible connections, and two others using parallel connections. The interface software controls the data transfer and also keeps information about the network conditions. This information is used for packet routing and to bypass malfunctioning interfaces.

Galeno José de SENA. "Implementação de protótipo de ferramenta para projeto/reprojeto de banco de dados". M.Sc. Diss. Presentation: 26/08/87 313 p. Advisor: Antonio Luz Furtado

Abstract: A modularization discipline that helps in the design and maintenance of complex database schemas is first described. The discipline incorporates both a strategy for enforcing integrity constraints and a systematic for the organization of large sets of database structures, constraints and operations. Plan-formation systems can aid in the specification, usage and maintenance of data-based information systems. A simple prototype for plans generation is shown. An expert tool is then described that supports the modularization discipline and integrates the design/redesign method with that which concerns plans generation. The expert tool aids in the development and maintenance of database schemas modularized in conformity to the discipline and this is implemented in PROLOG. Examples of using the expert tool at the design/redesign phases of a modular schema are exhibited.

Glória Maria E. Acquadro QUACCHIA. "Resolução computacional de um problema de viscoelasticidade plana incompreensível via elementos finitos mistos". M.Sc. Diss. Presentation: 02/09/87 p. Advisor: Vitoriano Ruas de Barros Santos

Note: Not available.

Helio Bruck ROTENBERG. "Programação orientada a objetos: um enfoque de engenharia de software". M.Sc. Diss. Presentation: 07/05/87 149 p. Advisor: Arndt von Staa

Abstract: Object-Oriented Programming is discussed using a Software Engineering point of view. In its first part, the particular style of programming peculiar to OOP is presented, and its characteristics are discussed. In its second part, a model for the programming system development process is proposed, exploring the advantages of OOP and discussing the activities involved.

João Francisco GUIMARÃES. "Um sistema de submissão remota de tarefas". M.Sc. Diss. Presentation: 31/03/87 243 p. Advisor: Daniel Schwabe

Abstract: Remote Task Submission (RTS) adds distributed and interchanged results facilities to the advantages usually found in VM/CMS environment remote job entry (RJE). This paper explore layered protocols concepts to specify RTS application; in the implementation phase, take advantages of Kermit protocol for file transfer.

Jumar PIZOL. "Especificação do mapeamento de esquemas de bancos de dados em estruturas físicas". M.Sc. Diss. Presentation: 17/02/87 70 p. Advisor: Antonio Luz Furtado

Abstract: In the past few years, there has been considerable debate on the research of software tools for the automatization of the different phases of databases design. This work provides support to the development of a tool for mapping logical modular specifications of data systems into files structures and their application programs.

Luiz Antonio Moraes PEREIRA. "Síntese de imagens realistas por rastreamento de dados". M.Sc. Diss. Presentation: 23/12/87 187 p. Advisor: Rubens Nascimento Melo

Abstract: This work deals with the main feature of the Ray Tracing Method, one of methods for the production, in raster devices, of images in perspective of three-dimensional objects. We present the basic characteristics of the hardware involved, the most well known method used in the modeling of solids, the mathematical expressions for calculating the intersections of visual rays with some modeling elements (primitives) and the Cook-Torrance method for modeling the light behavior, which allows the representation of the image to be very close to reality. We also deal with aspects of color vision as well as we extend our model to the point that we can represent illuminated colored objects by means of sources of colorful lights. Finally, we present some results of the implementation of the method in a 16 bit microcomputer.

Luiza Maria Fonseca CARNEIRO. "Um editor formatador com importação de gráficos". M.Sc. Diss. Presentation: 17/12/87 174 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This dissertation describes a text editor and formatter which, besides the traditional functions attributed to text formatters, includes graphics imports. For the construction of this tool, the Smalltalk environment was used. In this environment, it is possible to edit text and graphics.

Marcos Moraes LABRUNIE. "SAICOR - um sistema especialista para indicação de estudo emodinâmico da insuficiência coronariana". M.Sc. Diss. Presentation: 07/10/87 141 p. Advisor: Daniel Schwabe

Abstract: A Medical application of Artificial Intelligence concepts, through the development of an Expert System in Cardiology. Definition of an heuristical Decision Model for coronary arteriography indication. Definition of the knowledge base representation method. Testing with medical clinic cases.

Markus ENDLER. "O método da redução e a decomposição de problemas: alguns aspectos". M.Sc. Diss. Presentation: 16/06/87 192 p. Advisor: Paulo Augusto Silva Veloso

Abstract: In the context of the Mathematical Theory of Problems we study the method of reduction and its application aiming at decomposing problems. First, we investigate some conditions for the existence of a reduction between general problems and see how the solution-transformation of such reduction depends on the link between problems. Next, we examine some characteristics of problems composed of more elementary ones, e.g. the Cartesian-product problem, the union problem and the composition problem, and search for conditions for the existence of a reduction to such problems. Finally, we investigate the process of specifying real problems, which generates a precise formulation for them in our general-problem structure. We also identify some relations between the aspect of the logical formula expressing the problem condition and the possibility of representing the problem as a composite one.

Nelson Alves da SILVA FILHO. "Protocolo de chamada remota de procedimento". M.Sc. Diss. Presentation: 19/08/87 82 p. Advisor: Michael Anthony Stanton

Abstract: This dissertation examines the remote procedure call approach for communication between processes in a distributed system environment. It presents an implementation, in Modula-2, of a multiprogramming kernel, a remote procedure call protocol and specifies its interfaces.

Nelson Luís Saldanha da FONSECA. "Uma ferramenta portátil para a atividade de planejamento de capacidade". M.Sc. Diss. Presentation: 28/08/87 288 p. Advisor: Daniel Alberto Menascé

Abstract: The increasing dependence of most company on Data Processing services requires a systematic methodology for the adjustment between the computer system and the workload. The capacity planning analyst task of modeling the complex dynamics between computer and the workload may be extremely simplified by the use of appropriate tools. This dissertation describes a capacity planning software called Sistema de Planejamento de Capacidade as well as presents the underlying mathematical models.

Newton José VIEIRA. "Máquinas de inferência para sistemas baseados em conhecimento". Ph.D. Thesis Presentation: 09/10/87 211 p. Advisor: Roberto Lins de Carvalho

Abstract: The problem we approach here is the problem of specification and development of inference machines particularly appropriate for knowledge based systems, assuming as premise the use of first order logic as paradigm for knowledge expression. Without imposing previous restrictions as to the used logic we make a proposal of inference machines which admits an efficient implementation model. We consider it is fundamental the possibility of application of heuristics based in the application domain. Consistently, we admit one more level for application of heuristics than related systems as, for example, model elimination. The realization of existential quantifiers may be made without any additional processing load. We present several models for answer explanation with emphasis in the easy of understanding for the layman.

Oliver Barreira PONTE. "Geração de código para a linguagem nova". M.Sc. Diss. Presentation: 24/03/87 170 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: This work presents a code generation model for the programming language NOVA from the abstract syntax tree used as intermediate language. The code generation implementation is described and specified in detail. The run time support with its functions, the language statements flow of control and the space allocation have been specified, programmed and tested. Many situations where optimization applies are presented and implemented or suggested for next compiler versions. Some of the code generation techniques discussed here are independent of the choice of target processor (Intel 8086), some other are essentially interconnected with specific machine instructions.

Paula Ypiranga dos GUARANYS. "IN-Edito - Interface inteligente para um editor de texto". M.Sc. Diss. Presentation: 09/03/87 76 p. Advisor: Carlos José Pereira de Lucena

Abstract: IN -edito, Intelligent Interface for a text editor, is an experimental software tool to help the user make an efficient use of the text editor for which it has been implemented. The interface consists of three modules: help, explanation and inference (an intelligent module). The help module is an interactive "manual" displayed in the form of superi-posed windows that carry different levels of detail. An explanation is provided upon request and describes a command and its corresponding action. The intelligent module monitors the utilization of the software by the user and interferes in the session whenever the interface can show how to make a better use of the system. The dissertation concludes by proposing a methodology through which the design of the interface can be extended to other application software.

Paulo Cesar T. Mello VAZ. "Algoritmos Branch-and-Bound: uma implementação distribuída". M.Sc. Diss. Presentation: 12/03/87 103 p. Advisor: Daniel Schwabe

Abstract: This work report on the design and implementation of an hybrid Branch-and-Bound algorithm enhanced with disjunctive cutting planes B(5) for a personal computer local area network system.

Paulo Eduardo L. BUCHSBAUM. "Especificação semântica de nova e seu *Front-End*". M.Sc. Diss. Presentation: 27/08/87 127 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: This work describes a new programming language of general use, named NOVA, and its front-end's implementation. The main goal is the language's use as base to build a programming integrated environment. The front-end, besides to do a complete semantical analysis of a source program written in NOVA, builds a intermediary representation as a tree in a suitable way to a posterior code generation/optimization. Moreover, the dissertation contains a description of language's main features, that include specific facilities to modular programming, exception handling, pattern matching and data base programming.

Paulo Roberto RIVERO. "A formação de recursos humanos em informática: o estudo de um caso em engenharia de software". M.Sc. Diss. Presentation: 17/08/87 318 p. Advisor: Carlos José Pereira de Lucena

Abstract: The work has three different approaches. The first one presents software and software engineering, what they are, how they evolved, what is being researched and what are its trends. The second is characterized by a survey of the international and Brazilian state of art in computer science, especially in software engineering, in the technical and educational areas. Finally, the third one presents an experience in teaching software engineering, conducted jointly by PUC/RJ and SERPRO, which lead us to proposals related from the experience itself, to a model for technical development of human resources and to a discussion of alternatives concerning University-Industry interactions.

Ricardo de Saboya Pinheiro SOUZA. "Um protocolo de transporte distribuído". M.Sc. Diss. Presentation: 10/04/87 p. Advisor: Daniel Schwabe

Note: Not available.

Ricardo VIEGAS. "VM/CC: Uma ferramenta para caracterização de cargas em ambientes VM". M.Sc. Diss. Presentation: 31/03/87 p. Advisor: Daniel Alberto Menascé

Note: Not available.

Simone Cordeiro VIEIRA. "Ambiente de ensino por análise/recomendação de estratégia". M.Sc.Diss. Presentation: 03/12/87 149 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: Through the use of Artificial Intelligence techniques some new perspectives begin to introduce computers in education. In this paper the author presents one of these possibilities using teaching system like "Coach" which is able to criticize and advise about strategies used by the student in learning environments based in games. A prototype called PEÃO (Teaching Program through analysis and guidelines for action), was developed intending to teach chess final strategies through different modes.

Valter Araújo DINIZ. "Rede de dados com satélite". M.Sc.Diss. Presentation: 23/03/87 2 vols. Advisor: Daniel Alberto Menascé

Abstract: This dissertation provide the basic elements that will be respected in the project of a data communication system by satellite. It present options to choose the protocols appropriate in the networking subscriber to system, showing the performance of principles protocols and finally it presents some applications and services.

Werther Jacques da Silva VERVLOET. "Análise de software fonte: uma alternativa para medição de qualidade de programas". M.Sc. Diss. Presentation: 02/04/87 65 p. Advisor: Daniel Schwabe

Abstract: Automatic measuring of Software Quality in large Data Processing Bureau has been a dream to almost all DP - Managers. This dissertation proposes a way of Quality Measuring through Modular and Structured Programming paradigms. It also shows the implementation of a tool that figures out some of the most relevant aspects that have major influence in good or bad Software Quality.

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Aldenice Brito PEREIRA. “Estabilidade na presença de mudança do passo e métodos STIFF - estáveis a mudanças”. Ph.D. Thesis Presentation: 27/07/88 130 p. Advisor: Peter Albrecht

Abstract: The purpose of this dissertation is to study the numerical stability of integration processes of ODE's, which allow order and step changing and utilizes linear multistep methods in the solution of initial value problems, stiff or not. Integration with BDF methods are considered and strategies for step changing are elaborated. The integration processes defined by them are analyzed in relation to their efficiency and stability when changes occur. Stiff-stable cyclic methods, which are insensible to step changes, are also obtained.

Aline Maria Santos ANDRADE. “Um interpretador para regras de produção”. M.Sc. Diss. Presentation: 01/03/88 129 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work proposes an inference system for knowledge bases using production rules with a strategy that prefers rules leading to shorter deduction sequences, and avoiding recursive inference. The user can interfere in the control of the inference through the specification of meta-rules.

Andrea SILVA. “Fundamentos de programação em cláusulas genéricas e defaults por eliminação de modelos”. M.Sc. Diss. Presentation: 04/11/88 119 p. Advisors: Marco Antonio Casanova (IBM) and Tarcísio Haroldo Cavalcanti Pequeno

Abstract: This dissertation presents a theoretical foundation for logic programming systems based on general clauses and defaults. A procedural semantics for computing answers, based on weak model elimination, is first proposed. The proof of the soundness and completeness of this method is discussed in detail. Then, the basic method is extended to deal with defaults along the lines of Reiter's default logic. Finally, a logic programming language is defined, including extra-logical facilities.

Anelise Pacheco BRAGA. “Mapeamento de esquemas conceituais relacionais”. M.Sc. Diss. Presentation: 16/09/88 120 p. Advisors: Marco Antonio Casanova (IBM) and Antonio Luz Furtado

Abstract: This thesis discusses the mapping of Extended Entity-Relationship schemas into relational schemas. Initially, a data definition language following the Entity-Relationship Model and incorporating certain extensions is described along with a data definition language following the language SQL and also incorporating some new features. Then, the mapping is described in detail and its syntactic and semantic correctness is discussed. Finally, a methodology, called Successive Trivialization, to optimize the relational scheme obtained from the mapping is described.

Arthur Ronald de Vallauris BUCHSBAUM. “Um método automático de prova para a lógica paraconsistente”. M.Sc. Diss. Presentation: 27/09/88 161 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: The paraconsistent logic is suitable for working with automated reasoning systems that present contradictions. We have developed an automated proof method for the prepositional calculus C1 and for the quantificational calculus C1*, based on tableaux. We have shown that this proof method is sound and complete with respect to the semantics of these calculi. We have constructed a rule system to implementation, we have validated this system with respect to the original proof method and from it we have made a prototype to C1*.

Celso Escobar PINHEIRO. “Sistemas especialistas em legislação - um estudo de caso”. M.Sc. Diss. Presentation: 22/03/88 132 p. Advisor: Daniel Schwabe

Abstract: A description of an Expert System based on the Brazilian Social Welfare Benefits legislation is given, analyzing in detail the methodology employed on its development, the problems involved in

knowledge acquisition, the main aspects of its representation and its explanation mechanisms. The practical use of temporal logic and event calculus is examined, looking for a set of predicates specified in Prolog which can support the handling of concepts involving time periods commonly found in legal texts. An extension of the explanation mechanism is presented in order to allow an interactive consultation about the system deduction steps, so as to supply planning suggestions to conform to the legislation conditions.

Daniel M. PERPIGNAN. "Tradutor automático ASN.1/X.409 - aplicação em sistemas de tratamento de mensagens X.400". M.Sc. Diss. Presentation: 29/02/88 156 p. Advisor: Arndt von Staa

Abstract: One of the fundamental problems in data communication is to deal with the diverse formats used to represent information in different computational systems. In the ISO Reference Model for Open Systems Interconnection, the presentation layer is charged with the task of resolving the different ways of data representation (syntax) so that the application layer can process the correct interpretation of their semantics. For that, it is necessary some mechanism for describing the data in a representation independent way (Abstract Syntax) and, ensure a consistent, mutually acceptable set of codification rules for transmission of the application information (Transfer Syntax). The "Abstract Syntax Notation One" - (ASN.1) and the "Basic Encoding Rules" - (BER) defined in the international standards ISO DIS8824, ISODIS8825 and CCITT X.409 provide such mechanism. To pass from ASN.1 data specification to the Transfer Syntax codification (BER), an automatic translator has been developed, using techniques of compiler design and the specifications of the OSI Reference Model, more specifically for the application in the Message Handling Systems that conforms to CCITT X.400 series recommendations.

Djenane Cordeiro PAMPLONA. "Análise do comportamento e instabilidade de membranas anulares planas sob a ação de cargas de bordo axissimétricas". Ph.D. Thesis Presentation: 23/05/88 116 p. Advisors: Luiz Bevilacqua (COPPE/UFRJ) and Therezinha Souza da Costa

Abstract: Finite deformations of homogeneous, isotropic, incompressible initially flat, unstressed membranes under vertical and moment loads are studied. The general equilibrium equations and boundary conditions were established throughout the principle of stationary potential energy. Axiasymmetric examples are studied and the coupled non-linear differential equations solved analytically and numerically, to obtain the angle of twist, the deflection and the radial deformation at every point of the membrane. Two strain energy densities are considered: Neo-Hookean, for which is possible to obtain an approximate analytical solution, and Mooney-Rivlin. An estimate of the results was obtained experimentally and the results are compared and presented in non dimensional form in a number of figures.

Enio Emanuel Ramos RUSSO. "Um sistema de interpretação de diálogos gráficos". M.Sc. Diss. Presentation: 18/03/88 223 p. Advisor: Rubens Nascimento Melo

Abstract: The purpose of this work is the construction of a dialog interpretation system that uses graphic resources, ever more prevalent in present computers. To achieve this, concepts and techniques to the project of a good user interface are defined, studies of how the User Interface Management Systems (UIMS) can be utilized in the construction of interfaces are made, and many logical models of dialog representation are studied and analyzed. The main existing UIMSs are also described and analyzed. Based on these studies, a proposal of a UIMS to EITIS - Environment of Integrated Tools for Interactive Systems - , a project being developed by DI-PUC-RJ., is made. This proposal specifies a graphic dialog interpreter that is implemented with the dialogs represented as a data base structure of type DBTG-CODASYL (network model).

Fernando Soares de LIMA. "Sobre a construção de funções de Green e caracterização". Ph.D. Thesis Presentation: /10/88 p. Advisor: Vitoriano Ruas de Barros Santos

Note: Not available.

Florentino de Aguiar MELO. “Programação por objetos como ferramenta de desenvolvimento: uma proposta”. M.Sc. Diss. Presentation: /03/88 p. Advisor: Raul Cesar Baptista Martins (IBM)

Note: Not available.

Francisco de San Tiago Dantas B. QUENTAL. “Modelagem dinâmica de sistemas interativos”. M.Sc. Diss. Presentation: 26/01/88 p. Advisor: Carlos José Pereira de Lucena

Abstract: A technique is proposed for the modeling of interactive non-concurrent systems, which incorporates dynamics (time dependent behavior) from the early steps of the development process. State Transmission Diagram, adapted to the case of non-concurrent systems, is used as the representation language. The proposed technique links the control representation to the system's functional decomposition, yielding consistency rules for each separate level as well as for the whole hierarchy of levels. The transformation of the control hierarchy (represented by a set of state transition diagrams) into a program outline (written in a programming language) is discussed, using PASCAL as an example. The modeling of a system dynamics is presented as part of a broader set of development techniques and tools, inspired by two complementary insights: systems development viewed as model building and as a message transmission process.

George BERLINER. “CRON - Um sistema especialista para planejamento de atividades”. M.Sc. Diss. Presentation: 10/03/88 115 p. Advisor: Daniel Schwabe

Abstract: This dissertation presents an application of Artificial Intelligence concepts in the planning area through the development of an Expert System that will propitiate a knowledge based environment for the programming and planning of enterprises in several areas of interest. An example in the area of civil engineering is described.

João Batista da Conceição JARDIM. “Projeto e implementação das operações de visualização do projeto MOSAICO”. M.Sc. Diss. Presentation: /04/88 p. Advisor: Arndt von Staa

Note: Not available.

Laira Vieira TOSCANI. “Métodos e desenvolvimento de algoritmos: especificação formal, análise comparativa e de complexidade”. Ph.D. Thesis Presentation: 21/10/88 174 p. Advisor: Paulo Augusto Silva Veloso

Abstract: Through a frequent use of an algorithm design method, the designer may acquire an intuitive knowledge of the method properties. Often the designer does not know if the properties are generally applied or may be only applied to a small class of problems. In many cases he is not confident on certain properties. The work presented here demonstrates that it is possible to formalize algorithm design methods (adm's) so to study their properties and to compare adm's regarding to both generality and complexity of the algorithms generated by the methods. The work also shows that it is possible to formalize and demonstrate those intuitive ideas acquired by the adm user and thus to take advantage of it so to increase the knowledge and clarity of the method.

Leila Nocchi KOBAYASHI. “Um método de elementos finitos do tipo hermite para solução do problema de Stokes em formulação potencial vetor”. Ph.D. Thesis Presentation: 29/09/88 85 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: This dissertation deals with the numerical solution of the 3D Stokes problem in vector potential formulation. Due to the boundary conditions of the Cartesian components of the vector field occurs. A decoupling method is described in details and for its implementation a escalator solver is necessary. For this purpose a Finite Elements Method based upon Hermit's polynomials is studied and implemented for rectangular domains.

Leonel A. ALBUQUERQUE. "Um sistema especialista para a identificação e quantificação das modalidades de intercâmbio de energia elétrica". M.Sc. Diss. Presentation: 29/12/88 132 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: Many problems related to the energetic operation planning of electric power system are difficult to solve computationally because they need complex or still inexistent mathematical models or they deal with methodologies that change frequently. In this paper we try to study one of these problems by the highly experienced professionals point of view and to use the expert system technique to develop an efficient tool to solve it. We study the energy interchanges modalities identification and quantification problem of the Brazilian electric power system and we describe the expert system developed.

Leônidas Conceição BARROSO. "Métodos cíclicos tipo ADAMS estáveis com mudanças do passo de integração". Ph.D. Thesis Presentation: 01/06/88 61 p. Advisor: Therezinha Souza da Costa

Abstract: We show how to derive Adams type - cyclic methods for Initial Value Problems that maintain their stability properties when using step change procedures. To reach this aim we use Albrecht's theory of A-Methods as theoretical tool. As examples we derive 3 - Cyclic 3 - Step methods of convergence orders 3,4 and 5. And 2-Cyclic 2-Step methods of order 2 and 3. The methods of order up to 4 are A-stable while the one of order 5 is stiffly-stable.

Manoel MARQUES. "Sistema interativo de auxílio ao desenvolvimento e validação de programas em turbo Pascal". M.Sc. Diss. Presentation: 24/03/88 76 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work presents a system that helps integration, structure and testing of programs developed in Turbo Pascal. All the concepts involved and the previous study for this work are described. From the analysis of some environments, we have built one based on the modularity theory to provide structured, documented and tested programs. It was projected to complement the utilization of Turbo Pascal, using in a intelligent way its available resources. Much can be improved and other facilities can be added. We intend to present a system that is a bridge for the viability analysis of building similar environments that won't be a collection of tools, but a system that helps the complete development of a program.

Marco Antonio Mortari REZENDE. "Um sistema de armazenamento para banco de dados orientado a aplicações não convencionais". M.Sc. Diss. Presentation: 02/11/88 138 p. Advisor: Rubens Nascimento Melo

Abstract: This work describes the design and implementation of SSAE, the storage subsystem of OMS-EITIS. It aims to support the development of relational DBMSs extended for nonconventional applications. The new requirements and some proposals under development are studied and SSAE is put in relation with them. The storage structures are detailed; they support the introduction of new sorts of attributes - divisible and virtual. The interface of SSAE is presented. It comprises data definition and manipulation primitives that allow physical schema definition, realization of sequential and direct access to the stored records, manipulation of divisible fields through the use of partial handlers and, at last, efficient sorting by a specific sort component.

Marco Aurélio Ferreira ROZO. "Ambiente integrado para sistemas interativos: criação de sistemas de apoio à discussão". M.Sc. Diss. Presentation: /03/88 p. Advisor: Rubens Nascimento Melo

Note: Not available.

Orlando Alcino MENDES. "Resolução numérica do problema de Stokes em formulação potencial vetor por um método de elementos finitos parametrado". M.Sc. Diss. Presentation: 29/09/88 106 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: The subject of this thesis is the numerical solution of the Stokes problem in vector potential formulation. The components of the vector potential which are coupled due to boundary conditions are

treated separately by using the method of the influence matrix. A non conforming tetrahedral finite element method is used for the solution of this resulting scalar biharmonic equations in R3.

Paulo Carlos ROCHA. "Um tipo de dado chamado planilha - projeto e implementação". M.Sc. Diss. Presentation: 19/12/88 192 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Project and implementation's proposal that joins the advantages of interactivity and prototyping, intrinsic features from the interpreted environments (particularly the Electronic Spreadsheet), with the acquired efficiency in programming languages through the encapsulation of data structure and fundamental operations, that characterize the SPREADSHEET DATA TYPE.

Ricardo BOSIGNOLI. "Análise do acesso aleatório em sistemas de comunicação". M.Sc. Diss. Presentation: 20/04/88 111 p. Advisors: Luiz Felipe de Moraes (IME) and Luiz Fernando Gomes Soares

Abstract: This work proposes and analyses the use of Data Communications Satellite-based Systems in which a great number of users, generating low intensity traffic, shares, in accordance with a random algorithm and CDMA, the same communications channel. After the initial characterization of the multiple access methods used in satellite communications and the basic characteristics of systems applying these methods, it is introduced the concept of bursty traffic and proposed the use of CDMA. Thus, after modeling and analyzing the CDMA system, producing average message delay by system load curves, it is analyzed, for the same conditions, the performance

Simone de Lima MARTINS. "Especificação de serviços de voz e dados integrados em uma rede local de computadores". M.Sc. Diss. Presentation: 21/01/88 2 vols. Advisor: Luiz Fernando Gomes Soares

Abstract: In the past few years, the computer local area networks, which interconnect computers within a small area such as a building or a campus have greatly increased in use. These networks support a great number of applications such as electronic mail and file transfer and also allows the shared use of large computers and expensive peripherals. Nowadays, various studies are being made in order to investigate the utilization of these networks to voice transmission. In this work, it is presented the specification of services that a voice and data integrated local area network can offer, such as selected attendance, automatic redial, subscriber following procedure, message sending and receiving and others. The functions that each level of a protocol for voice transmission should have are also shown.

Tarcísio de Souza LIMA. "Interface generalizada com o usuário para estações de trabalho: aspecto gráfico na abordagem de objetos". M.Sc. Diss. Presentation: 23/09/88 192 p. Advisor: Carlos José Pereira de Lucena

Abstract: A general view of a workstation is shown, situating the context of the Generalized User Interface (IGU is the achronym). The standard interface, a conceptual framework, is presented and discussed. The IGU is focused on the graphical aspect. The design and construction of the IGU leave to object oriented programming (OOP). The cases generated by an assayed study implement the principal functions, leading to some conclusions no how the use of OOP reflects on the generalized interface design. A follow-up of activities is presented in the conclusion.

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Crediné Silva de MENEZES. "Ambientes para processamento de conhecimento". PhD.Thesis. Port. Presentation: 01/09/89 139 p. Advisor: Roberto Lins de Carvalho

Abstract: In the present work, knowledge processing is treated within multilevel environments. We shall emphasize the study of two of those levels by discussing them in greater depth. The first level, called the declarative level is bound to the description of the possible configurations of the universe of a given application. The second, called the procedural level, is appropriate for fenomena description. The declarative level, as we propose it, is based upon First Order Logic. For the procedural level we propose a language syntacaly resembling the Prolog programming language. The integration of the two levels is established through precise semantics. The procedural language programs are composed of procedures which perform actions. The access to declarative knowledge is done through primitives what we conventionally call knowledge level. We also present the SAFO system, an interactive environment for knowledge processing, which was built upon the ideas currently discussed. Presently, there is a Modula-2 implementation of SAFO, available for microcomputers.

Elvira Jacques da Silva VERVLOET. "Sistemas de autoria para CD-ROM: uma proposta de arquitetura". M.Sc. Diss. Presentation: 12/04/89 102 p. Advisor: Daniel Alberto Menascé

Abstract: The optical disk drives, especially the CD-ROM - Compact Disk Read Only Memory -, are arousing considerable interest because of their large storage capacity and their multimedia characteristics. Authoring Systems are hardware and software tools that allows the creation of the CD-ROM in an interactive way. This dissertation describes the steps of the CD-ROM generation, presents a data structure and the concept of objects for multimedia environments, and proposes an architecture for CD-ROM Authoring System.

Fernando Elyas Nóbrega NASSER. "Em busca de um metabanco de objetos para o OMS-EITIS". M.Sc. Diss. Presentation: 15/12/89 242 p. Advisor: Rubens Nascimento Melo

Abstract: EITIS (Environment of Integrated Tools for Interactive Systems) is an (adjustable) environment used to specify, design and execute Interactive Systems. A search for elements that can help to set the configuration of an EITIS environment for the construction of Expert Systems is the main subject of the present work. Software Engineering aspects related to the development of these systems are examined. A prototype of an Expert System for Planning the expansion of power transmission networks is used as an example. Methods for designing User Interfaces, specially graphical, are studied. A graphical User Interface to the Expert System mentioned is developed. Considerations about EITIS environments for Expert Systems and suggestions for further research conclude this work.

Glauce da Costa Lins RELVAS. "Um assistente especialista para projeto de software". M.Sc. Diss. Presentation: 01/89 p. Advisor: Daniel Schwabe

Note: Not available.

Hugo Enrique HERNANDEZ FIGUEROA. "Resolução por elementos finitos com funções base otimizadas, do problema de autovalores associado à equação de Helmholtz 2-D, proveniente do problema físico de propagação eletromagnética em guias cilíndricos". M.Sc. Diss. Presentation: 30/03/89 71 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: It is the purpose of this dissertation to study the performance of the Optimized Basis Functions Method, for application into the electromagnetic propagation problem. This method was recently formulated (1987) and consists, essentially, in minimizing the discretization error of the Finite Element Method when applied into eigenvalue problems, where the Rayleigh-Ritz Principle is available. In this sense, it was introduced, for the first time in the literature, two sets of modified basis functions (MBF) for P1 finite element. The other finite element here used, the Q1 kind, was tested by using one set of

MBF previously introduced in the literature. The computational experiments showed a good performance of one of the two sets of MBF here introduced, as well as of the previously known set. These results confirmed the potentiality of the method at issue.

João Luiz Carvalho de Queiroz FERREIRA. "O compilador para CLU: um modelo de geração de códigos para arquitetura 8086/88". M.Sc. Diss. Presentation: 11/08/89 188 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work presents a code generator model for the programming language CLU from the three address code shown in [AHO 87] , used as the Intermediate Language. The object code is Assembly language and the code generator's implementation is described in detail. A fraction of the Run Time Support have been implemented, and the space allocation has been specified. Possible optimizations are shown, and another ones are suggested for the next versions. This part of the CLU Compiler Project in this Department.

José Riverson Araújo Cysne RIOS. "Raciocinando por jogos semânticos". M.Sc. Diss. Presentation: 04/10/89 127 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: Haeusler and Pequeno developed a theorem proving method based on the semantic games introduced by Hintikka. This work describes the program ProGame, which implements the method, accentuating its description and the heuristic rules developed. Among the outstanding features offered is the mechanism that permits the creation of user-defined strategies, thereby providing an excellent tool for the prototyping of new specialized control regimes. The method was extended in order to allow for answer extraction.

Kátia VELMOVITSKY. "Em busca de um meta-banco de objetos para o OMS-EITIS". M.Sc.Diss. Port. Presentation: 21/12/89 183 p. Advisor: Rubens Nascimento Melo

Abstract: OMS-EITIS is a fundamental component of EITIS (Environment of Integrated Tools for Interactive Systems). The EITIS project aims the creation of a dynamic environment composed by tools for specification, design and implementation of interactive systems. The Object Management System - OMS - is an important part of it, and is responsible for the storing and management of EITIS' typical objects, such as dialog specifications, modules and drawings and therefore must be based on an object model more expressive than the traditional data models. This work first presents an overview of some OMS's in the literature in order to capture the main features of an object oriented data model and then proposes an Object-oriented Meta Database as a component of OMS-EITIS.

Leonardo Cruz da COSTA. "Um compilador CLU: análise léxica e tratamento de tabelas". M.Sc. Diss. Presentation: 11/08/89 148 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Models are described for a prototype of CLU compiler. This prototype will be used for future studies mainly on oriented-objects language projects. Furthermore, the semantic behavior of some aspects of CLU is discussed. It also characterizes a context of execution that implies a lexical analyzer and a symbol table manager.

Luís Cesar Chehab LASMAR. "GRAFTEX: um tradutor para textos gráficos". M.Sc. Diss. Presentation: 10/03/89 341 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work presents a handler for texts and graphics and is oriented for edition of long texts which are organized in items and subitems, with the inclusion of internally generated graphics or imported graphics from other editors. The used environment for the construction of this handler was Turbo Pascal 4.0.

Luiz Antonio Francisco de SOUZA. "Sistemas especialistas aplicados à escolha de produtos". M.Sc. Diss. Presentation: 17/03/89 310 p. Advisor: Daniel Schwabe

Abstract: In this dissertation, the application of Expert Systems in the domain of Product Selection is investigated. Product Selection is defined here as a process which is part of the Capital Goods and Technical Services selling activity. This process requires both specific knowledge and experience of consultants who work with product providers to help customers make good choices. Based upon this investigation, illustrated through the analysis of many Expert Systems now operating in Europe and North America, a methodology for Product Selection Expert Systems development and implementation is recommended. This methodology, based upon the experience and contributions of standing authors, takes into consideration both technical aspects and strategic, organizational and psycho-social issues, all very important steps towards an adequate integration of Expert Systems in the product provider marketing environment. The methodology is exercised in a practical problem, the selection of RENPAC services. RENPAC services are switched data communications services provided by EMBRATEL - Empresa Brasileira de Telecomunicações, a Brazilian telecommunications carrier and services company, through RENPAC - Rede Nacional de Comutação de Pacotes, the public Packet Switching Network in Brazil. From the evaluation of the exercises in the selection of RENPAC services domain, similar problems are also explored as to the adequacy of the referred methodology. Conclusions and comments are presented, addressing Brazilian companies that are now studying whether and how to make use of the strategic power of Expert Systems in business.

Luiz TUCHERMAN. "Uma disciplina para projeto modular de bancos de dados". Ph.D. Thesis Presentation: 23/06/89 135 p. Advisor: Antonio Luz Furtado

Abstract: A modularization discipline for database schemas is first described. The discipline incorporates both a strategy for enforcing integrity constraints and a tactic for organizing large sets of database structures, integrity constraints and operations. Then, a systematic way for verifying the design requirements, as defined by the discipline, that guarantees the correctness of modular schemas during the design and maintenance phase is presented. More precisely, two problems are addressed: how to test for the requirements and when to apply such tests. Finally, a software tool that helps the development and maintenance of database schemas modularized according to the discipline is presented. It offers a user-friendly interface that guides the designer through the various stages of the creation of a new module or through the process of changing objects of existing modules. The tool incorporates, in a declarative style, a description of the design and redesign rules behind the modularization discipline, hence facilitating the incremental addition of new expertise about database design.

Marcos Veloso PEIXOTO. "Especificação algébrica de tipos abstratos de dados via seqüência de sistemas de reescrita". M.Sc. Diss. Presentation: 29/03/89 108 p. Advisor: Paulo Augusto Silva Veloso

Abstract: English abstract not provided.

Mauro BACCAR. "Um sistema de controle de versões de software". M.Sc. Diss. Presentation: 21/04/89 142 p. Advisor: Albrecht Karl von Plehwe

Abstract: Microcomputer software development environments usually do not have tools to control programs' source code versions. To fill this gap, a tool is proposed which has the characteristics of those existing for main frame computers. A prototype of this tool is used to evaluate the adequacy of the proposed storage method. Storage based on difference files (also called deltas) was found to be competitive to file compression. As an additional information, a listing of the programs used is included. Two of them implement good comparison algorithms and can be used to compare two text files.

Nizam OMAR. "Paralelismo em programação lógica com partição binária". Ph.D. Thesis Presentation: 27/02/89 142 p. Advisor: Roberto Lins de Carvalho

Abstract: A deduction system, with dynamic problem partition, for parallel processing on message based communication computer networks or multiprocessors is presented. The deduction can be made with any number of available processors. The communication is done using Communication Predicates as

communication channels without direction restriction. A formal definition of a system with binary and automatic problem partition is presented and its completeness and consistency are proved.

Pedro Mendes GUALANDI. “Manutenção de dependências de inclusão em bancos de dados”. M.Sc. Diss. Presentation: 03/03/89 155 p. Advisors: Marco Antonio Casanova (IBM) and Antonio Luz Furtado

Abstract: This thesis presents a method that enforces inclusion dependencies in relational databases. This method is based on a constraint enforcement pre-compiler that accepts a user's program and produces a new program that has the same basic behavior as the old program and preserves the consistency of the database when executed. Additional remarks concerning the enforcement of assertions and trigger processing are also included.

Reinaldo Antonio VALLEJOS CAMPOS. “Aplicação de métodos numéricos na Avaliação de Políticas de Manutenção Periódica, em sistemas de computação”. M.Sc. Diss. Presentation: 07/12/89 91 p. Advisors: Edmundo Souza e Silva (COPPE/UFRJ) and Daniel Alberto Menascé

Abstract: In this work was implemented an efficient software tool for availability measures in computer systems submitted to periodic maintenance. This tool is based on models 2 and 3 of [5]. It was analyzed the optimization of the following measures: Availability, Maintenance Cost and a tradeoff between this measures. It was considered different types of Cost-Availability functions and normalization alternatives for them. Using the developed software tool, availability measures for different systems was obtained. Some conclusions based on the realized experiences was extracted. This conclusions may help the analyst in the establishment of hypothesis that permit the development of simple and precise models.

Roberto Velasco KOPP JUNIOR. “Sistemas especialista de segunda geração: algoritmos, métodos e técnicas para sistemas de diagnósticos”. Ph.D. Thesis Presentation: 29/09/89 274 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The Expert Systems technology had a huge development in the last decades, but notwithstanding, researches such as Hubert Dreyfus and Luc Steels show us some fallacious results and failures of several kinds, even among the most well known and famous systems. The Fifth Generation Computer Project has also ended, after several years of research and investments of billions of dollars. Very important results have been achieved, but insufficient to pursue the goals of current applications, which we define as Second Generation Expert Systems. Nowadays, huge efforts are being directed through the Sixth Generation Computer Project, which synthesizes advances in many areas. This thesis addresses the investigation of the application of those emergent technologies, such as Conexionist Models, Semi-Automatic Generation of Knowledge Bases, Object Oriented Expert Systems and Genetic Algorithm in the construction of new systems. To allow experimentation over algorithms, methods, techniques and heuristics, we developed an environment which is being held in an academic scope, originating several sub-projects of research.

Valeria de Albuquerque KERSTENETZKY. “Estudo para implementação de um gerenciamento de memória virtual no MINIX-CYGNUS”. M.Sc. Diss. Presentation: 21/04/89 99 p. Advisor: Albrecht Karl von Plehwe

Abstract: This dissertation presents the paged virtual memory management to be incorporated into the MINIX system for the CYGNUS machine at the Computer Systems Engineering Laboratory at PUC-RJ. This implementation consists of the following functions: logical mapping, physical mapping and page archiving ("swapping"). The concepts of virtual memory based upon paging, some techniques for core page substitution and the virtual memory management routines are described.

Yanira D'Arcanchy Nóbrega NASSER. “Gerência de janelas no ambiente EITIS”. M.Sc. Diss. Presentation: 02/05/89 175 p. Advisor: Rubens Nascimento Melo

Abstract: This dissertation deals with the problem of window management in user interface management systems. Initially, it is made a general analysis on user interfaces, where the most important issues are presented. Then, two examples of user interface systems are studied: the "Presentation Manager" (OS/2) and "X Window"(UNIX). Finally, two proposals for window managers are presented. The former, for the present implementation of the EITIS environment, uses the graphics standard GKS with an extension for accepting virtual workstations (GKS-VW) under DOS. The latter, for the future implementation of the EITIS environment, uses the X Window System under UNIX.

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Aloysio Salles XAVIER. “Modelagem de modelos de apoio à decisão: uma abordagem prática”. M.Sc. Diss. Presentation: 09/03/90 147 p. Advisor: Rubens Nascimento Melo

Abstract: The main objective of this work is the study of the Decision Support Models creation and its practical application in fourth generation environments available in the software market. The concepts of MMAD - Model to Modeling Decision Support Systems, proposed in Maria Helena Braz's doctoral thesis presented at PUC-RJ (march/1990), are introduced together with the basic procedures for its application in a fourth generation environment. A set of rules to construct Decision Support Systems based on the elements of MMAD and on the resources offered by the employed environment are presented. This work is intended to contribute for the Decision Support Systems study in three basic aspects: in the practice of the methodology already mentioned, giving inputs to its improvement; in the evaluation of the Decision Support Models implementation mechanisms available in the used environment; in the proposition of a set of rules to guide the Decision Support Systems construct based on the concepts of MMAD.

Ana Maria Martins MOREIRA. “Um tradutor de Prolog para Pascal Leme”. M.Sc. Diss. Presentation: 20/02/90 93 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: This work presents a PROLOG to PASCAL translation technique and describes the implementation of a translator following this technique. The main characteristic of this translator is the use of continuation procedures, which, in association with the use of domains and modes declarations, makes it possible to generate a readable and easily optimizable PASCAL code.

Andrea Reis RIBEIRO. “Banco de dados multimídia em CD-ROM: primitivas de acesso a objetos multimídia”. M.Sc. Diss. Presentation: 15/02/90 131 p. Advisor: Daniel Alberto Menascé

Abstract: The availability of large capacity optical disks, has made possible the implementation of applications which manage multimedia objects, i.e., objects composed of text, sound and images dimensions. The purpose of this dissertation is to define and implement a set of access primitives to multimedia objects that extend the conventional DBMS ARCO-IRIS in order to allow for the easy implementation of multimedia applications. As a case study, several applications based on a database about the Brazilian painter Candido Portinari were implemented using the multimedia access primitives.

Daniel Raul ARANY. “REXXMOD, um pseudo-compilador RFXX: análise e implementação”. M.Sc. Diss. Presentation: 14/03/90 104 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Rexx is a command language for IBM's VM/CMS operating system. Because it is also a high-level character-string processing language which is interpreted, it has been used in other areas such as prototyping, macro programming and personal computing. This function will be enhanced through compiled execution - greater efficiency and portability, and new interfaces to other languages. Rexx, though, is hard to translate because of its interpreted-oriented attributes. In the present work we analyze this problem and present as one possible solution the interpreted execution of pseudo-compiled object decks.

Eduardo Edison MIZUTANI. “Recuperação inteligente de informações: um estudo de caso”. M.Sc. Diss. Presentation: 21/02/90 102 p. Advisor: Daniel Schwabe

Abstract: Information retrieval through indexing has its critical point stemming from the differences between the indexer's and retriever's views of the associations between domain concepts and documents. A good representation of the domain is important to reduce these differences and, thus, artificial intelligence techniques for knowledge representations, such as semantic network and frames, can be useful in this task. Besides, these techniques suggest query tools with features as browsing and investigation of domain concepts, adapted to the user's level of knowledge. Although it is typically a

task of retrieving documents in a library, this problem can also be found in information retrieval from generic databases related to a certain domain of knowledge. The objective of this thesis is to describe several indexing and retrieval approaches, emphasizing knowledge-based techniques. As a case study, a system called AS which assists the user in accessing a statistical database called SINTESE, on the Brazilian Social Welfare system is described.

Eduardo Robson Tardin COSTA. "MVS/CC - uma ferramenta para caracterização de carga no MVS/XA". M.Sc. Diss. Presentation: 02/03/90 237 p. Advisor: Daniel Alberto Menascé

Abstract: Obtaining the parameters required by a queuing network model of a large computing system is a very demanding job, which strongly recommends the use of a software tool that automates it. This dissertation describes the MVS/CC, a tool developed with this purpose for IBM mainframes using the operating system MVS/XA. An overview of MVS/XA and analytic models of computing systems is presented. The MVS/CC user's interface is described and the algorithms used to obtain the parameters from the data generated by the MVS/XA monitors. SMF and RMF, are indicated. Validation results are also presented.

Edward Hermann HAEUSLER. "Prova automática de teoremas em dedução natural: uma abordagem abstrata". Ph.D. Thesis Presentation: 20/12/90 136 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: In this work we present a formal method for building Natural Deduction (ND) theorem provers. The logics for which the method can be applied are those specified on a computable generalization of ND systems defined here for this purpose. The first-order rules have a special treatment, however the method works uniformly on them. Abstract Completeness and Soundness for the theorem provers are shown. The completeness is shown with the use of the Normal Form Theorem for the ND system considered. We conclude the work by applying the method to the Minimal, intuitionistic classical, S4 and GL (both modal logics). Some remarks are considered when we extended the method in order to deal with S5, Linear Logic, Intuitionistic Type Theory and the paraconsistent logic Cw.

Eliane Bezerra Soares de CARVALHO. "Generalização de gramáticas de determinação para consultas a bases de dados em linguagem natural". M.Sc. Diss. Presentation: 07/08/90 200 p. Advisor: Clarisse Sieckenius de Souza

Abstract: The present dissertation investigates computational aspects of Determination Grammars (DG's), so as to identify the degree of generality achieved by the principles on which they are based. The main goal is to automate some steps of their development and, consequently, to improve their portability. Determination Grammars are a methodological tool to support the development of semantic grammars to be used in Natural Language Interfaces to Conventional Database querying. They're based on the identification of existing determination relations among the components of the DB. Automating semantic grammars is a difficult task due to their domain dependence. However, since the determination principle can be taken as a syntactic counterpart of the relationships dealt with in DB models, the present investigation centers around automation from data models. This study shows that domain dependence can be kept inside the boundaries of syntactic classification of lexical items. The grammar, thus, remains unchanged across domains. In order to achieve portability, two processes have been automated: the mapping between data model and determination syntax and the development of a basic domain independent grammar.

Floriano Saad MAZINI. "Banco de dados multimídia em CD-ROM: um ambiente de manipulação de textos". M.Sc. Diss. Presentation: 15/02/90 169 p. Advisor: Daniel Alberto Menascé

Abstract: This work deals with an extension of a conventional data base management system for applications that access multimedia data (unstructured data) like sound, image and text in an optical media (Compact Disc Read Only Memory - CD ROM). A prototype was defined and implemented using a Multimedia Database Architecture defined here. This architecture, divided in two environments, conventional and non-conventional, has a particular process of data preparation due to read only feature of a CD-ROM. A set of programs for data preparation, text editing and indexing was specified and implemented. Also, a set of primitives for text retrieval from the optical media were also implemented.

Graciela H. MATICH. “Modelagem de uma extensão da linguagem CLU para orientação a objetos”. M.Sc. Diss. Presentation: 21/02/90 184 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: In its first stage this project researches and discusses basic principles in object oriented languages (OOLs). The CLU programming language is characterized in general, and then analyzed from the perspective of OOLs, in order to discover coincident and missing points. We conclude that "inheritance" is the main notion to be included in a possible extension. A model to add subtyping inheritance to CLU, intending to preserve the original language's spirit, is elaborated and introduced. Finally some considerations about binding, to find more flexible ways either in the original CLU language and in the extension model, are presented.

Iara Regina de Azevedo FERNANDES. “Um editor de documentos para um sistema cooperativo com serviços integrados de voz e dados”. M.Sc. Diss. Presentation: 04/90 p. Advisor: Luiz Fernando Gomes Soares

Note: Not available.

Isa Haro MARTINS. “O perfil da comunicação homem-máquina em linguagem natural para sistemas com bases de conhecimento”. M.Sc. Diss. Presentation: 10/12/90 117 p. Advisor: Clarisse Sieckenius de Souza

Abstract: In view of the increasing demand for natural language (NL) interfaces, this dissertation aims at optimizing the implementation of menu-oriented NL interfaces, to be used for the communication with knowledge-based Systems. The research is based on Searle's Speech Acts Theory, because it deals with the intentionality which exists in human communication and which is to be assimilated to human-machine communication, when it is processed through NL. The analysis of what effectively happens in human-machine communication allows for the definition of the actual profile of this kind of communication. From the analysis results were proposed: (a) a NL sub-domain, with a communication capability equivalent to that of the functional capability of the system - this provides for the elaboration of the menu-oriented interface; (b) a proper methodology for dealing with intentionality, as distinct from semantic meaning thus eliminating "ad hoc" treatments and permitting the interface future expansions.

João Bosco Gomes de Oliveira AZEVEDO. “Modelagem dos aspectos sócio-técnicos de um sistema de transporte - um estudo de caso”. M.Sc. Diss. Presentation: 12/12/90 3 vols. Advisor: Bruno Maffeo

Abstract: The construction of information systems for modern organizations whose requirements should be accomplished has been a permanent concern of Software Engineering. A computational system case study, based on real requirements for a large company, was modeled and implemented with the objective of perform evaluation, synthesis and refinement of the structured techniques and tools. A structure of models and modeling languages are introduced and the development of information systems as a process of construction of models with different abstraction levels, as long as a process of delivering messages among people are evaluated. A modeling technique for large systems is presented. Its application intends to control the representation complexity for large systems by a consistent treatment for embedded human-sub-systems. A new component for the modeling structure, the Operational Schema, is specified and its application to design conversational interfaces is tested and analyzed.

José Luis BRAGA. “Episteme - Um sistema semi-automático para estruturação de conhecimento”. Ph.D. Thesis Presentation: 25/09/90 133 p. Advisor: Roberto Lins de Carvalho

Abstract: The task of building Knowledge Based Systems might, in principle, be preceded by a thorough phase of acquisition and organization of the knowledge about the portion of the world being focused. Only after that should an Inference Engine suitable to its processing be built. By now this analysis phase is not carefully carried out, mainly because of lack of a method to systematize the modeling activities. A prototype is built as soon as possible, that is put to work experimentally in the environment to which it is driven. By observing the behavior of the prototype, knowledge engineers tune the Knowledge Base, by

adding new knowledge and by eliminating bugs, until its performance is considered adequate. This thesis, starting with a Theory for Scientific Knowledge Structuring proposed by the logical positivist philosopher Rudolf Carnap, proposes as enhancement to it in order to shape it to the particular case of analysis and structuring Specialized Knowledge, namely, knowledge produced and used by experts in domains of human knowledge. Our proposal, named Theory of Planes of Knowledge, embodies a method for the systematic Acquisition, Analysis and Structuring of Specialized Knowledge whose final product is a Structured Knowledge Base. A system that realizes part of the proposed theory , named Episteme, was implemented using SAFO to show that it is possible to automatize the whole proposed theory.

Laura Sanchez GARCIA. "Requisitos para a integração de elementos do discurso e diálogo às interfaces de linguagem natural orientadas por menus". M.Sc. Diss. Presentation: 07/90 175 p. Advisor: Clarisse Sieckenius de Souza

Abstract: In the context of cooperativity, as proposed by Grice (75), for conversational environments, theories of discourse have contributed for the elaboration of adequate responses. Because they adopt such theories, almost exclusively, as their linguistic foundation, extant natural language interfaces still lack in efficiency because they do not take considerations some specific characteristics of dialogue dynamics. Starting from the computational contribution by Grosz and Sidner (86) about the structure of discourse, and from the proposals by Ferrari and Reilly (86) and by Wachtel (86) on dialogue modeling, the present work tries to meet some of the needs of a specific environment. Having as its starting-point a menu-driven natural language interface, and as it aims the extension of that interface for the treatment of references between queries, this research proposes a new frame of analysis for the development of this kind of interpreter.

Marcelo Peçanha de Albuquerque MARANHÃO. "GKS-W: estudo de uma implementação no ambiente SunOS/SunView". M.Sc. Diss. Presentation: 09/03/90 124 p. Advisor: Rubens Nascimento Melo

Abstract: The aim of this work is to evaluate the extension of the GKS graphics standard, in order to allow it to use some of the features of a windowing environment. Special attention is given to user and application program interfaces. An overview of windowing systems, its origin and goal, necessary resources, operation methods, among other issues, are also included, without going into details.

Maria Helena Lima Batista BRAZ. "MMAD - um modelo para modelagem em sistema de apoio à decisão". Ph.D. Thesis Presentation: 27/03/90 187 p. Advisor: Rubens Nascimento Melo

Abstract: Model Management Systems (MMS) are fundamental tools for supporting the development of Decision Support Systems (DSS). In order to contribute towards the solution of some open issues in this field, an overview of Model Management is presented and a model called MMAD is proposed for modeling in DSS. The formalization of MMAD concepts in terms of annotated Petri Nets is also presented. A MMS called SIGMAD, based on MMAD, is proposed and its implementation using an object oriented Database Management System is discussed.

Orivaldo de Lira TAVARES. "Uma linguagem para modelagem de objeto de interação". Ph.D. Thesis Presentation: 26/09/90 95 p. Advisor: Roberto Lins de Carvalho

Abstract: The modeling of the knowledge about the user interaction is one of the most important aspects in an environment for knowledge processing. This thesis presents a language for modeling this knowledge - the Moldes language. The knowledge about the user interaction is distributed in three planes which are: presentation, procedural and declarative planes. The presentation plane contains the knowledge about the way the communication objects are presented or asked to the users, i.e., this plane contains the knowledge about the hardware and the software used in the presentation. The procedural plane defines the dynamic of the interaction by specifying how the interaction must behave along the time, throughout the sequence of actions that compose the interaction. The declarative plane defines the knowledge that supports the interaction. This knowledge describes the structure of the interaction and the syntax of the language to be used at each interaction point. The dynamic and the structure of the interaction, and the syntax of the language to be used at each interaction point are described by the

primitive objects of the Moldes language, called respectively dynamic of the interaction, structured molde and syntactic molde.

Paulo Savio da Silva COSTA. "Um gerador automático de geradores de código". M.Sc. Diss. Presentation: 22/02/90 202 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: The emergence in the last twenty years of numerous programming languages, as well as several functionally contrasting machine architectures, has stimulated the development of software tools to assist the automation of compiler production. The first successful achievements happened in the field of lexical and syntactical analysis. Tools to support code generation, however, have only recently begun to appear, due in a certain degree to the difficult formalization of such a machine dependent process. This dissertation describes AutoCode , a code generator production system. The code generators are based on a pattern matching algorithm and driven by tables automatically created from a formal machine description.

Ramiro Affonso de Tadeu GUERREIRO. "Semântica inicial e métodos abstratos de refutação para cláusulas genéricas". Ph.D. Thesis Presentation: 27/12/90 127 p. Advisor: Marco Antonio Casanova

Abstract: In this thesis we introduce a new abstract way to consider the problem of automated theorem proving and computation of answers, instances and definite answers. We first define a new semantics for generic clause programs. This semantics has most of the "nice" properties that are found in Herbrand semantics for definite clause programs, including the existence of minimum model, which is an initial object in a category of models and also the least fix point of an operator on a lattice. Another nice property of this new semantics is its equivalence to the classical semantics. The rest of this work we are concerned with separating what is essential from what is contingent with respect to soundness and completeness results for refutation methods. We have found that some properties of such methods are central issues. We believe to have opened a new path of investigation in automated theorem proving and computation of answers, instances and definite answers.

Roberto IERUSALIMSCHY. "O=M: Uma linguagem orientada a objetos para desenvolvimento rigoroso de programas". Ph.D. Thesis Presentation: 25/09/90 130 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work intends to achieve compatibility between Object-Oriented Languages and formal methods for software development. We investigate the main properties of Object-Oriented Languages, as well as their qualities and pitfalls. We propose a formal method for software development with the concepts of Specification Inheritance and Nesting. Based on this method we propose the programming language O=M. The main features of O=M are a complete identification between the Module and the Object concepts, separate hierarchies for specification and implementation and a high degree of polymorphism. A formal description of this language, in denotational semantics, is presented in the appendix.

Rosa Maria Leão Rust CARMO. "Especificação de uma ferramenta para simulação distribuída de algoritmos de roteamento". M.Sc. Diss. Presentation: 24/04/90 201 p. Advisors: Edmundo A. de Souza e Silva (IM/UFRJ) and Daniel Alberto Menascé

Abstract: Not provided.

Rosana de Saldanha da Gama LANZELOTTE. "OPUS - Um otimizador extensível para SGBD's não convencionais". Ph.D. Thesis Presentation: 07/08/90 46 p. Advisor: Rubens Nascimento Melo

Abstract: Query optimization in Database Management Systems is still a challenge. One of the greatest achievements of the relational database technology has been to propose algorithms for solving the problem. The appearance of object-oriented and deductive database systems raises new difficulties. New query representation formalisms are needed and non-exhaustive search strategies must be used. Query optimizers should be extensible to cope with environment modifications. Some recent works have

addressed the problem of extensible query optimization. However, the proposed solutions do not apply to object oriented data models. Furthermore, most extensible query optimizers are not able to implement new combinatorial search strategies, such as simulated annealing. In this work we propose an extensible OPtimizer for Up-to-date database Systems (OPUS). Its extensibility relies on two main aspects: a formal study of the query optimization problem; an object oriented approach for design and implementation. An object-oriented approach has been adopted for the design and implementation of OPUS. The optimization problem is first studied from the point of view of a generic search problem. The objects used in the implementation of search strategies are, thus, designed prior to their use in a specific application. On the other side, the usual objects of a query optimizer and their properties are studied, which provides the basis for applying the generic framework of a search system to the query optimization problem. Doing so, the main aspects of a query optimizer, i.e., its search strategy and cost model, can be independently specified and extended. The object oriented design of OPUS is one of the key issues for improving its extensibility. The appropriate modeling of the optimization objects provides an implementation framework where several search strategies can be easily prototyped. The extensibility of OPUS is demonstrated by prototyping three different search strategies: Iterative Improvement, Simulated Annealing and that of System R optimizer. Also, case studies concerning changes on the physical model are discussed.

Sebastião Pereira MARTINS. "A ortogonalidade nas condições de ordem dos métodos de Runge - Kutta e as condições simplificadoras". Ph.D. Thesis Presentation: 21/11/90 88 p. Advisor: Peter Albrecht

Abstract: The purpose of this thesis is to explore the orthogonality relation that exists between vectors that compose the order conditions of Ringe-Kutta methods, using the theory of A-methods, developed by Albrecht. The exploration of orthogonality conducted us to: a) the results developed by Butcher and b) news simplification conditions to the order conditions. Simplification conditions for explicit Runge-Kutta methods of order four, five and six are given.

Werther Galvão KRAUSE. "Representação de conhecimento normativo em engenharia integrando hipertexto com múltiplos paradigmas". M.Sc. Diss. Presentation: 25/05/90 172 p. Advisor: Bruno Feijó

Abstract: This work presents a model of normative knowledge representation in engineering that integrates Hypertext - an emerging field in Information Technology - with AND/OR Graphs and Horn Clauses. A prototype in the domain of design codes in Mechanical Engineering is implemented in Hypertalk. This system has a number of new characteristics such as: views representing high-level interpretations of a norm, anchors supporting the navigation process, automatic navigation oriented by views, and a sub-system of glossary/index integrated into the navigation process. Also in this work, the nature of the normative knowledge is investigated and the incorporation of the proposed model into Intelligent CAD Systems is discussed.

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Adélia Cecília Gonçalves NUNES. "Uma arquitetura multicache com controle integrado de coerência e concorrência." Ph.D. Thesis Presentation: 29/05/91 373 p. Advisor: Daniel Alberto Menascé

Abstract: In cache-based multiprocessor, each processor has an associated private cache memory, where data from global memory is stored. The introduction of local cache memories creates the problem of managing the access to shared data. Two types of control mechanisms are required in order to manage access to shared in multicache multiprocessors: coherence control and concurrency control. Cache coherence is usually maintained by hardware, while concurrency control is usually left to the programmer or to the compiler. Motivated by the fact that a better performance may be achieved if those two controls are implemented together, we propose in this work a cache-based multiprocessor architecture with an integrated mechanism for cache coherence and concurrency control. The proposed architecture may be expanded, in a modular fashion, through a hierarchy of buses and caches. A simulator was developed to compute performance-wise the proposed architecture with an architecture with independent coherence and concurrency control mechanisms.

Adriana Lopez DIAZ. "Uma experiência de computação distribuída em rede de computadores PC-XT". M.Sc. Diss. Presentation: 29/05/91 171 p. Advisor: Albrecht Karl von Plehwe

Abstract: This work presents a system to accomplish distributed computations in PC-XT computer network acquired and releasing machines dynamically. The machines of the network are acquired by a centralizing machine under its control. The system makes a clear separation between the mechanism of distributed execution and the application programs for which it aims at providing a comfortable and simple environment.

Alexandre Antonio Bruno da SILVA. "Sistema de biblioteca para orientação a objetos". M.Sc. Diss. Presentation: 22/08/91 142 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work presents the object-oriented programming paradigm as a bases to code reutilization. Based on this paradigm a Library System of components is proposed. The objective of this system is to facilitate the reutilization so that the production costs can be reduced. On the system, a special emphasis is given on the mechanisms of representation, classification, recovering and components reutilization metrics. Finally, a comparative study is made between the library systems for conventional procedures published in [PRIETO-DIAZ-87] and [TEIXEIRA-89] and the tool implemented on this work.

Antonio Gil Coquillard AYRES. "Sistema PIC: uma experiência na geração automática de programas para reprodução de imagens". M.Sc. Diss. Presentation: 25/07/91 244 p. Advisor: Carlos José Pereira de Lucena

Abstract: This work presents the specification of an experimental CASE tool, containing a graphic editor capable of simulating available resources in certain programmable image reproducing devices, and with an additional module to generate the source program which produces each image in the simulated device. Therefore this system operates as a translator of images into source programs, accelerating the process of creation or modification of images, with the assurance of syntactic and semantic correctness of the programs which will produce them later.

Antonio Pepe VARELA. "ALETHEA - Uma linguagem exata para a especificação de sistemas". M.Sc. Diss. Presentation: 31/07/91 238 p. Advisor: Arndt von Staa

Abstract: This work presents a system specification language which can be used for function and control modeling in all phases of the life cycle of a system, so that parallelisms and synchronization points which are present in the reality being modeled may be preserved from the conceptual model to its implementation. Since the language is not ambiguous, it generates code right from the system specifications, which allows a considerable reduction of time and cost of development and maintenance.

A prototype of this language is implemented and an example of its use is provided to exhibit the products it obtains.

Armando Martín HAEBERER. "Fundamentos para um metamodelo descritivo e prescritivo do processo de desenvolvimento de software". Ph.D. Thesis Presentation: /03/91 227 p. Advisor: Paulo Augusto Silva Veloso

Abstract: This work is embedded into an encompassing research program whose goal is the development of a meta-model of the Software development Process. This meta-model should be not simply descriptive but also prescriptive. Paraphrasing classical sciences, such meta-models are general theories which, given a specific empirical basis, provide a Weltanschauung and a formalism, both coherent and unifying. Such Weltanschauung and formalism allow explication and prediction over the empirical basis, both by means of their own tools and by allowing the incorporation of particular models and theories. Our Weltanschauung is provided by Carnap-Hempel's statement view of scientific theories extended by Nagel-Hesse iconic models. Then our meta-model consists of four planes: a linguistic one (first order logic); the plane of its natural iconic model (the n-ary relations plane); the plane of denotations of first-order formulas as input-output binary relations (which provides an iconic abstraction of the observational level encompassing applications and machines); and finally, the plane of calculus of partial binary relations (which allows the construction of programs by means of input-output relations instead of by means of linguistic objects). The interrelations among the 4 planes should constitute a commutative diagram. This involved solving the then open problem of constructing a finitary relational algebra of first-order logic. The commutation of this diagram allows the explication and modeling of software development methods, be they based on linguistic notions (such as transformation ones), or based on the notion of iconic model (such as prototyping), or some combination of them. This commutation, together with the expressive power of first-order logic, provides the desired coherence to our meta-model. Finally, it is shown that the definition of the correctness relation between programs and specifications in the plane of input-output relations involves a counterfactual conditional. It is argued that the subjunctive character of this conditional permeates the whole Software Development Process. It is also suggested that the logic underlying the models of this process including validation obligations, is a conditional logic.

Armindo Luís Menezes Felippe de SOUZA. "AIRES - ambiente integrado de re-engenharia de software". M.Sc. Diss. Presentation: 05/02/91 336 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Software maintenance is the software development activity that concentrates most of the expenditures on the software life cycle. The focus we used is the software re-engineering approach. The definition of the concepts associated to this activity are given, and proposed classification is discussed. Quality evaluation criterions are presented in such a way to give a view of the current state in software maintenance. Techniques and tools are presented in order to support activities in areas such as re-documentation, design recovery, maintenance quality control, depuration, regression test, software configuration management and change management A system (SARES), which integrates the activities related with the reconstruction of data processing systems, is proposed. The system encompasses techniques and tools of software re-engineering, in order to obtain quality and productivity in the activities of software maintenance. An experiment in the area of software re-engineering was conducted in order to recover design from source code programs developed in the COBOL language. The results of this experiment are presented as well as a brief analysis.

Carmen Maria Costa de CARVALHO. "Um sistema de arquivos para um sistema operacional de controle de processos". M.Sc. Diss. Presentation: 29/04/91 154 p. Advisor: Albrecht Karl von Plehwe

Abstract: This work describes a file system for a process-control operating system (SCP), which is being developed for PC/XT microcomputers. This file system uses a development system, the DOS from Microsoft and is partially compatible with the DOS file system, allowing transportation of files between both. This master's thesis presents the global description of the SCP operating system and of file systems in general, describing in detail the one developed for DOS. Special emphasis is given to the detailing of the structure of the proposed file system.

Daniel Anibal MAZZUCA. "Profundidade de campo e motion Blur no método de Ray tracing distribuído". M.Sc. Diss. Presentation: /09/91 82 p. Advisor: Bruno Feijó

Abstract: The current work discusses a powerful technique for the synthesis of realistic images generated by computer, called Distributed Ray Tracing. By applying stochastic sampling, Distributed Ray Tracing enhances the treatment of the alias effect and, at the same time, introduces the treatment of other special effects, such as depth of field and motion blur, and guarantees the same simplicity of the conventional ray tracing algorithm. These effects turn the algorithm into an adequate tool for computer animation. Also the incorporation of other effects into the Distributed Ray Tracing algorithm, such as gloss, translucency and penumbrae, is discussed.

Eduardo Castello Branco BION. "Uma metodologia para integração automática de redes de Petri estocástica generalizada e redes de filas". M.Sc. Diss. Presentation: /06/91 117 p. Advisor: Daniel Alberto Menascé

Abstract: A Generalized Stochastic Petri Net (GSPN) is a powerful tool to model systems which exhibit instances for parallelism, synchronization, blocking and simultaneous resource possession. For large systems, however its resolution may be computationally unfeasible due to the combinatorial growth of the state space. A Queueing Network (QN) is a modeling tool which has efficient solution algorithms if certain systems features such as synchronization, blocking, parallelism and simultaneous resource possession are not present. In this case the QN is called Product Form Queueing Network (PFQN). This work presents a methodology by which large GSPN's can be efficiently solved by the automatic detection of this subnetworks which are equivalent to PFQN's . Subnetworks with only one input place and only output transition are replaced in the original GSPN by Flow-Equivalent Servers (FES's). Each FES is composed of a place/transition pair with marking dependent transition rates. The marking dependent transition rates of each FES are obtained by the resolution of the corresponding subnetwork, using the efficient solution algorithms of PFQN's. The reduced (high-level) GSPN's obtained in this way have much less states than the original one and their performance metrics match those obtained from the original one with great accuracy. Algorithms which implement the methodology were specified in this dissertation and implemented in a computer program. Also, a theorem which states a necessary condition for a GSPN to be equivalent to a PFQN is given in this dissertation.

Flávio Miguel VAREJÃO. "ALBA: um ambiente para classificadores Bayesianos por aglomeração". M.Sc. Diss. Presentation: 24/05/91 135 p. Advisor: Ruy Luiz Milidiú

Abstract: Many of existing expert systems were developed to solve differential classification problems. The Bayes' Theorem has been frequently used with the assumption of conditional independence of attributes to solve such problems. However, the interactions between attributes must be considered in difficult discrimination problems. The Sparse Attribute Cluster Model is a flexible and powerful discrimination procedure that can be applied in these circumstances. This Model allows to obtain high classification rates. This dissertation presents the ALBA: an expert system shell using the Sparse Attribute Cluster Model as knowledge representation technique. The main capabilities of this environment are: probabilistic reasoning, supervised learning and intermittent consultations. Additionally, three new attribute clustering techniques were incorporated to the Sparse Model. Experiments were performed in three medical diagnostic problem domains: coronary disease, renal disease and pulmonary diseases.

Gledson Elias da SILVEIRA. "Modelagem de aplicações paralelas em multiprocessadores fracamente acoplados". M.Sc. Diss. Presentation: 17/07/91 229 p. Advisor: Daniel Alberto Menascé

Abstract: The exploration of parallelism in multiprocessors imposes that parallel applications should be partitioned into several cooperating processes, which exchange information during their execution. The distribution of these processes over the processors must take into account the characteristics of the architecture in order to minimize the contention on shared resources. The goal of this work is the development of a generalized methodology for obtaining estimated execution times of parallel applications, executed on Loosely Coupled Multiprocessors. This methodology is based in the construction of a two level hierarchical model. The applications structure is modeled with a Generalized

Stochastic Petri Net and the architecture of the multiprocessor is modeled with Queueing Networks. As a case study, the methodology was applied to the ACD II multiprocessor. Simulation results obtained with the RESQ package showed that the model is extremely accurate even in heavy load conditions.

Guido Lemos de SOUZA FILHO. "Um editor de voz para sistemas hipermídia". M.Sc. Diss. Presentation: 13/08/91 129 p. Advisor: Luiz Fernando Gomes Soares

Abstract: This work describes the development of a voice editor under UNIX environment, with an interface to a multimedia hiperdocument management system. A multimedia hiperdocument can be characterized by a set of nodes (text, voice, image, etc.) interconnected by links. In addition to the usual edition operations, this editor optionally compresses the voice nodes using the detection and removal of silence intervals. The voice signal is displayed to the user through its waveform. In this representation the anchors are displayed and accessed, enabling the navigation through the hiperdocument.

Helio NIGRI. "Uma solução híbrida para síntese de imagens realistas combinando o método da radiosidade com o Ray Tracing". M.Sc. Diss. Presentation: 04/07/91 97 p. Advisor: Rubens Nascimento Melo

Abstract: The present work tackles the global illumination problem in order to achieve photo-elastic computer generated images. The adopted solution to compute the propagation of light on diffuse and specular surfaces is a radiosity/ray tracing hybrid model implemented in a system called Radioray. It is proposed a new technique for the calculation of the radiosity, named Progressive Technique with Fixed Number of Steps, which allows arbitrary geometric to be used in the scene description. This technique is an extension to the Progressive Refinement Solution [COHE88] that only deals with polygonal surfaces. It makes use of a sampling method, based upon the ray tracing method, to evaluate the form factors. The shading calculation becomes independent of the geometric representation and thus eases the Radioray interface with geometric modeling systems.

Jair Cavalcanti LEITE. "A interação entre usuários e sistemas de computadores em linguagem natural orientada por menus". M.Sc. Diss. Presentation: 20/09/91 107 p. Advisor: Clarisse Sieckenius de Souza

Abstract: The interaction between Users and Computer Systems is becoming more and more complex and people ask about the use of Natural Language. In this work we present the theoretical foundations to justify the need of a dialog centered interface design, to discuss and to show how the interaction is language dependent and how it's strongly related with the representation of a conceptual model of an application. We use a menu-driven natural language as a feasible way to study the interaction in a natural language. We also present a conceptual meta-model of systematic domains representation and a methodology for the implementation of a prototype of a menu-driven natural language interface.

José Henrique Carneiro de ARAÚJO. "Métodos de elementos finitos otimizados para o sistema de Stokes associado a problemas de viscoelasticidade". Ph.D. Thesis Presentation: 25/11/91 170 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: The Stokes system expressed in terms of three fields, namely, velocity, pressure and extra stress tensor, is generally acknowledge as a basic problem associated with the system describing the motion of a viscoelastic liquid. In particular, in the framework of a finite element simulation of this kind of flows, many specialists so far searched for classes of methods that are able to produce fine approximations of the three variables in the case of Stokes system. In this work, two new elements for the approximation of this problem following similar ideas are presented. However thanks to convenient choices of bubble tensors lead to a significant reduction of the number of degrees of freedom needed to define element spaces for the extra stresses, suitable for the solution of viscoelastic flow problems is attained. Some computer tests illustrate the potentialities of the new methods.

José Júlio Martins TORRES. "Abordagem de ferramentas e técnicas da área de métodos estruturados sob a perspectiva do método Warnier - ORR". M.Sc. Diss. Presentation: 29/04/91 201 p. Advisor: Bruno Maffeo

Abstract: A method for system's development is proposed by joining two existent methods. The system development process is done by construction of models (Essential Model, Implementation Model and Automation Model) based on the method of system's modeling initially proposed by Stephen M. McMenamin and John F. Palmer for the Essential Systems Analysis. In the construction of these models, we have the Warnier/Orr Method, instead of tools and techniques used in the area of Structured Methods. The use of models permits the team involved in the system's development a better control of the system's complexity. The use of the Warnier/Orr Method for the modeling allows the use of the same representation language by the user, analyst, designer and programmer. It also forces the system's designer to employ a systemic thinking and to document the system during the system's development project. The work is oriented to modeling of socio-technical systems more commonly used in business area.

Lauro Eduardo KOZOVITS. "Otimização da técnicas de Ray Tracing no sistema ASAP". M.Sc. Diss. Presentation: 26/02/91 141p. Advisor: Rubens Nascimento Melo

Abstract: Realistic image synthesis is an area of great interest in Computer Graphics. The current thesis presents the basis of the ASAP System, an environment for research development in the area of realistic image synthesis, in the Computer Science Department of PUC-Rio. The kernel of the system is based upon the ray tracing method due to its high quality images and its simplicity, which naturally makes the code modular and easily extensible. The high computational cost associated with the ray tracing technique has motivated the development of an optimized algorithm.

Lucia Lea Gondar Dias de OLIVEIRA. "Um realizador para o gerador automático de texto descritivo do gema". M.Sc. Diss. Presentation: 16/09/91 115 p. Advisor: Clarisse Sieckenius de Souza

Abstract: Most of the literature concerning automatic text generation are not directed towards Portuguese language. The main purpose of this work is to provide the automatic generation of text in Portuguese language. The description of abstract data objects, in natural language, should contain a considerable amount of information, so that users can construct an adequate mental model of the objects being described. The Conciliatory Planning [Scott,1990] proposition is to generate texts which are longer than those produced by other language generation systems. The present work studies the proposal's possibility of implementation for the Natural Language Syntax Generation of GEMA system, and suggest an appropriate architecture.

Luís Antonio Pereira de ARAÚJO. "Suporte inteligente à seleção de métodos especiais de recuperação de petróleo". M.Sc. Diss. Presentation: 28/02/91 331p. Advisor: Ruy Milidiú

Abstract: The scope of this work is to introduce a proposal of a Decision Support Environment for Enhanced Oil Recovery. This environment intends to support all the stages of the decision process. It provides automatic tools for the selection of technically viable alternatives, inference of missing data, prediction of the behavior during production, forecast of future oil prices, study of the necessary resources for the implementation of the project and, finally, the study of economic viability. To project this environment some concepts of Decision Support Systems and Multi-Models Expert Systems were used. The modules of this environment use, in an homogenous and integrated way, many knowledge representing tools, like frames, production and semantic networks. Classic tools like mathematical simulators and relations, procedural routines and data bases are used. The concepts of Fuzzy Sets are used to represent the heterogeneity and uncertainty due to the oil reservoirs. It was necessary to give a Fuzzy version to some knowledge representation and classic tools. Special care was taken with the quality of the man-machine interfaces, as well as with the project of tools that would permit decision scenario creation and sensibility analysis, a required Decision Support System characteristic. Some conventional systems projects and development supporting tools had been used, like Data Flow Diagram, Entity-Relationship Model and Modular Structure Diagram, the last being used in an adapted way. In the study of the Decision Process, it has been used with success the Influence Diagram. It had been developed a prototype for the environment, using PROLOG.

Luís Carlos TREVELIN. "Uma metodologia para avaliação de desempenho de aplicações de tempo real em arquiteturas paralelas". Ph.D. Thesis Presentation: 30/04/91 191 p. Advisor: Daniel Alberto Menascé

Abstract: Performance Debugging has fundamental importance in the project of Real Time Distributed Systems Applications, where time is the determinant factor. The performance characteristic of the applications cover from the organization of the tasks they are made of, through the mapping of their tasks to the processors, to the characteristics of the architecture where they will be processed. The modeling attempts of computational systems are, generally, based on some theory that depends on the analyst working area. The differences among these theories rely on the mathematical theories used in their construction and resolution. And these are the reason why they are so difficult to be used, making the application designers of an analyst who understands these tools. This work presents a methodology for performance modeling of real time distributed applications to multiprocessor environment. This methodology is based on a simple language for the application representation, and on the use of Generalized Stochastic Petri Nets (GSPNs) in the modeling process. It is also discussed an application project support tool for the automatic models generation and solution.

Luiz Fernando de Barros Falcão VERGARA. "Coleta de dados para modelos de planejamento de capacidade em ambientes VAX/VMS". M.Sc. Diss. Presentation: 10/03/91 117 p. Advisor: Daniel Alberto Menascé

Abstract: Analytical models describing the performance of computer systems were developed and are available to support Capacity Planning activities. Some Data Collectors are supplied to provide information about the use of resources of computer systems; such collectors do not always obtain the data needed for the construction of the analytical models. This work, particularly, proposes practical strategies to obtain data to feed analytical models representing VAX/VMS systems, from the Data Collectors available for these machines. This work provides as raw material a critical vision of the Data Collectors for VAX/VMS systems under the focus of Capacity Planning purposes and raises the problems involved in building of analytical models for VAX/VMS systems.

Luiz Fernando Diniz Junqueira BARBOSA. "Um prototipador e gerador de interfaces por manipulação direta: um modelo baseado em eventos". M.Sc. Diss. Presentation: 10/12/91 205 p. Advisor: Carlos José Pereira de Lucena

Abstract: Software developers have come to realize that the user interface paradigm is itself a kind of specification notation that expresses the user's intent and desires in terms of images, as opposed to words. The user interface implicitly defines most of the functional requirements, i.e., specifying the user interface often suffices to obtain an almost complete system specification. An environment is proposed to support this goal, using an event-based methodology to specify the asynchronous dialogues that exist in an environment that uses direct manipulation with rapid prototyping. To test the environment an interface prototype and generator system was constructed using direct manipulation based in events.

Luiz Felipe Catanhede DONATO. "Implementação de protocolos RPC/XDR/NFS em microcomputadores da linha IBM- PC". M.Sc. Diss. Presentation: 24/06/91 110 p. Advisor: Michael Anthony Stanton

Abstract: This dissertation describes a client implementation of the protocols Sun-RPC (Remote Procedure Call), XDR (External Data Representation) and NFS (Network File System) for the MS-DOS operational system, one of accessing services that are implemented over RPC/XDR platform on equipment with the UNIX operational system. For each protocol, a presentation is made of its characteristics, relationship with the OSI Reference Model, relationship with other protocols and the procedures implemented.

Marcelo Pereira MELO. "Previsão de preços de derivados de petróleo no mercado internacional utilizando redes neurais artificiais". M.Sc. Diss. Presentation: 02/07/91 209 p. Advisor: Ruy Luiz Milidiú

Abstract: Neural Networks research has proven its applicability for time series modeling. In the efforts of several researchers the most used method has been backpropagation and its variants. We investigate the applicability of the backpropagation method for predicting the price of oil products in the international market. Aspects of project, difficulties and suggestions are discussed. In short-term prediction we verified a performance better than that obtained by the experts. We also suggest a simple way to combine forecasts and do analysis of scenarios.

Maria Beatriz Machado do AMARAL. "Um estudo sobre depuração em aplicações de controle de processos". M.Sc. Diss. Presentation: 29/04/91 178 p. Advisor: Albrecht Karl von Plehwe

Abstract: This work presents a debugging tool for programs developed to a process control system called SCP. This system is designed for PC/XT type microcomputers and its main component is the multitasking Kernel. The new debugger - DSCP - allows the programmer to analyze the system control structures, as well as, to follow dynamically the extension of concurrent task and mechanisms offered by the Kernel.

Maria das Graças Volpe NUNES. "A Geração de respostas cooperativas em sistemas baseados em lógica". Ph.D. Thesis Presentation: /03/91 197 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: This work discusses the potentiality of reasoning systems based on Logic in achieving cooperative interaction. Taking into account strictly structural information, our approach proposes a basic interaction strategy for general purpose. The discussion is divided in two parts: the generation of cooperative responses and the generation of explanations. The first of these tasks is based on the analysis of questions represented as logical formulae which, together with other kinds of information, suggests the best of various possible responses. The second task, on the other hand, is based on transformations on a Natural Deduction proof tree and on the use of rhetorical information for the construction of a text plan.

Marina Teresa Pires VIEIRA. "Um modelo de objetos para um sistema de gerência de objetos em ambientes de desenvolvimento de sistemas interativos". Ph.D. Thesis Presentation: 25/04/91 181 p. Advisor: Rubens Nascimento Melo

Abstract: It is proposed an Object Model with suitable features to modeling objects of non conventional applications and especially user interface objects. It is shown an specification of user interface objects, by means of the concepts of the proposed model. In this specifications the behavior of this objects express the functions of a User Interface Management System, which was implemented as a prototype using the O2 Objects Oriented Database System.

Mauro José Fridman Ferreira PINTO. "Gerência de Transações e Controle de Concorrência em Servidores de Banco de Dados em Redes Locais". M.Sc. Diss. Presentation: 25/06/91 244 p. Advisor: Daniel Alberto Menascé

Abstract: A multi-user database management system, based on the client/server architecture, has been specified in order to build an environment for on-line transactions, using appropriate techniques of concurrency control and fail recovery. The implemented prototype used, as the system kernel, the SBD/Ts database management developed by Tecnosoft Tecnologia de Software. The design proposed in this dissertation is intended to present an environment as secure as those found in mainframe systems and in addition much more user-friendly and at lower cost.

Nelson Lopes DUARTE FILHO. "Raciocínio evidencial e aquisição automática de conhecimento em sistemas especialistas: uma abordagem Bayesiana". Ph.D. Thesis Presentation: 16/10/91 208 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: A resolution to the problem of evidential reasoning is presented, applied to the elaboration of diagnosis, considering it as an inference of the occurring probabilities of the possible diagnostic hypotheses, conditioned to the observed evidences. It is proposed that knowledge should be represented under the subjective point of view of the Probability Theory, in a way that the inferred probabilities be coherent to the existing beliefs about domain in question. As such beliefs should be represented under the form of a bayesian network, codifying a joint probabilities distribution, it is possible that difficulties be find in obtaining them. It is suggested, thus, that they be acquired automatically, as a first contact, from representative data bases. All the proposed ideas were implemented in a prototype with the characteristics of a shell to construct Expert Systems, enlarged with the ability to acquire knowledge automatically from examples. Those ideas were tested with positive results by five experiences accomplished.

Oscar Luiz Monteiro de FARIAS. "A dinâmica do complexo eletrônico: implicações para as políticas de informática dos países em desenvolvimento". Ph.D. Thesis Presentation: 26/05/91 419 p. Advisor: Carlos José Pereira de Lucena

Abstract: The industries that comprise the Electronics Complex (EC), particularly the Informatics, are causing deep transformations in the economic activities, with the related implications in the social field. The extension of the EC impact in the society poses serious problems to developing countries like Brazil. At one side, EC strategic aspects put as a central goal the mastery of the activities concerned with the project and manufacturing of electronic products. This reasoning is in the fundamentals of industrial policies aimed at promoting or protecting national industries. At other side, electronic products, mainly computers, are inputs demanded by all the economy. So, the internal market reserve policy favoring national manufacturers may diffuse inefficiency through the Brazilian economy, by hindering the national firms the use of up-to -date equipment at more affordable prices. A cost/benefit analysis of the Informatica National Policy (INP) is then, needed. Based in the infant industry and product cycle theoretical framework, the informatics Brazilian industry is evaluated, taking as a reference the international industry. The reasons for the technological gap and price differential between Brazilians and international industries are investigated. The are presented some suggestions to the INP, based in the analysis of the Brazilian case, the successful experiences of South Korea and Japan, and the EC dynamics. These suggestions have a central parameter the search international competitiveness of the national industry, in order of not penalize the entire Brazilian society.

Paulo Jacinto PASTOR-BRAGA. "Tecnologia e organização numa empresa de informática: um estudo de caso". M.Sc. Diss. Presentation: 19/08/91 148 p. Advisors: Diana de Macedo Soares (IND) and Carlos José Pereira de Lucena

Abstract: The Brazilian computer industry is changing: the conditions that supported the strongly protectionist policy in which it blossomed do not exist any more and despite of, or because of it, local firms feel threatened in the face of the faster than expected deregulation. The conditions that would favor these firms' chances of survival, through the enhancement of their performance, have been investigated into. In particular, organizational structure in its relationship with technological options has been stressed, also because, in Brazil, this aspect has not been sufficiently taken into account as a success factor in industrial organizations. The identification of organizational options in their interaction with technological ones in a specifically Brazilian context is believed to contribute to a better management of informatics firms in the Electro-electronic sector. An organizational model for CORBA Computadores that was propounded in the scope of the first research, and that was partly implemented since with the author's intervention, is described and its first results are discussed.

Regina Elvira Machado MAIA. "Uma ferramenta para auxílio à previsão de desempenho de sistemas de software em desenvolvimento". M.Sc. Diss. Presentation: 17/07/91 154 p. Advisor: Daniel Alberto Menascé

Abstract: Software Performance Engineering arises as a complement to consecrated Software Engineering techniques. Its purpose is to guarantee that new applications will perform in accordance with predetermined goals. This can be attained with the permanent evaluation of the system performance metrics, since the initial design phase until the system "death". This dissertation proposes a methodology

for the software performance forecasting. As the design is refined, new evaluations can be done, allowing for a continuous and accurate prediction of the ultimate application performance. The methodology is supported by an integrated set of tools: a compiler for the LDA - Language for the Description of Applications, a database with information about the environment that will be used (hardware and basic software) by the application, and PC/1 PLUS, a third-party queueing network based capacity planning package. The analyst will obtain the performance metrics without the need of acquiring special expertise on systems performance models. The syntax and semantic rules of the LDA, the algorithms used on the LDA implementation - the CLDA - and the database logical design are described in detail in this work. At the end, we show a case study, utilizing the proposed methodology.

Robin R.R. Reimermendt TEIXEIRA. "Editor gráfico semântico no apoio a ambientes de desenvolvimento". M.Sc. Diss. Presentation: 26/02/91 106 p. Advisor: Rubens Nascimento Melo

Abstract: Graphic Symbols editors aim at making and modifying drawings with the aid of computers. It is usual to find specific graphic editor as part of systems development environments to support several design steps. Although these editors allow constraints to be defined on the links between symbols, they do not offer enough flexibility for the user to customize his or her specific personal environment. This work presents a graphical editor that allows a better specification of the semantics of development methodologies. This editor, named EGS (Semantical Graphic Editor), contributes to the EITIS project, under development at the Informatics Department of PUC-RJ, as a graphic tool for systems development. Its behavior is determined through specifications generated by the meta-environment. EGS also supports, through well defined rules, the conversion between representations and the generation of formatted text. The project conception was based on a user-interface, focused on the development environment. A prototype was implemented using the PHIGS graphics standard for a mainframe environment. EGS was customized to become an editor of Extended Entity-Relationship (EER) diagrams, which also generates from the graphic representation the equivalent commands in a textual DDL for the EER model.

Rolf FISCHER. "GeneSys - sistema híbrido para modelagem de sólidos". M.Sc. Diss. Presentation: 08/08/91 127 p. Advisor: Bruno Feijó

Abstract: This dissertation proposes a new methodology for the effective use of hybrid representation schemes in the development of Solid Modeling in second generation CAD (Computer-Aided Design) environments). The presentation of this method is preceded by a careful analysis of the main problems involved in the establishment of composed representation schemes and modeling processes. Following this introduction, the proposed method for obtaining hybrid architectures is presented. Basically, this method derives the hybrid scheme by unifying and structuring all transactions over the representation kernel during the modeling process. The practical viability of this is then demonstrated by means of the implementation and description of the representation scheme, architecture and modeling techniques of the hybrid system GeneSys. In addition, this work as a whole shows the importance of new criteria stated by recent research in ICAD (Intelligent Computer-Aided Design) during the development of Engineering software.

Rubens Chamtob LEVY. "Aspectos práticos da modelagem geométrica baseada em superficies paramétricas". M.Sc. Diss. Presentation: 24/07/91 153 p. Advisor: Rubens Nascimento Melo

Abstract: Geometric modeling based on spline curves and surfaces is a major topic in Computer Graphics, as it offers the most adequate solution for free-form objects representation. However, the implementation of spline modeling systems requires the analysis of various topics, like the choice of the best user interface techniques for design, the optimization of evaluation algorithms and the choice of the formulations better suited to the specific application. All these subjects are found in this work, which also investigates other utilization of splines in Computer Graphics (Computer Animation and Font Design).

Silvia BAND. "Modelagem de aspectos sócio-técnicos associados a um centro de informação: estudo de caso". M.Sc. Diss. Presentation: 10/07/91 3 vols. Advisor: Bruno Maffeo

Abstract: This work presents a set of construction model's tools and techniques and its practical application. This allows the solution's representation to real problems in a clear and intelligible way to the several distinct groups who take part of the development process of a software product. The study will be based on the project of a typical Information Center (IC) system modeled on the basis of field researches in some corporation's installations. The contribution expected in this thesis consists basically in three points: definition and modeling of a typical IC using conceptual tools and techniques of the Software Systems Structured Development Methods; demonstration of the usefulness of these modeling tools and techniques in the construction of models for socio-technical systems with emphasis on the social aspect; experimental validation of the modeling tools and techniques employed, indicating points to optimize the proposed methods.

Simone Maria Bacelar Leal FERREIRA. "Modelos de iluminação: um estudo comparativo". M.Sc. Diss. Presentation: 25/11/91 131 p. Advisor: Rubens Nascimento Melo

Abstract: Realistic image synthesis is an area of great interest in Computer Graphics. In one of its stages, an attempt is made to show to the fullest colors of all the objects under study; in order to do this, one must be aware of all the minute details involved in interactions between light and matter. This information is made available by the illumination model. Illumination models are extensively dealt with in literature, but then only theoretically. Putting them into practice is no easy matter, as there are many limitations varying from the exhibition mechanism to the very knowledge of physical properties applicable to each model. In the present work it has been studied the theory of various models and modifications in the classic ray-tracing method have been done so as to be able to incorporate other much more complex models. Thus, through analysis and experiment, we have strived to obtain funding that would enable us to make an adequate evaluation and selection of a system synthesizing images and cartoon figures. We then made a comparative analysis of the various models in use. In addition to the evaluation of processing time for each model, we have also made a visual comparison of images rendered by each of them.

Stella Cavalcanti da Silva PORTO. "Algoritmos heurísticos para escalonamento de tarefas em multiprocessadores em arquiteturas heterogêneas: construção sistemática e avaliação de desempenho". M.Sc. Diss. Presentation: 17/07/91 340 p. Advisor: Daniel Alberto Menascé

Abstract: Heterogeneous Parallel Architectures have been shown to be a promising area of research in the development of high performance computers. The scheduling of tasks in such a framework poses difficult since decisions as to which processors to allocate (and not only how many processors should be allocated) have to be taken. The present work proposes a special taxonomy and a systematic methodology for building heuristic algorithms for static task scheduling in Multiprocessors with Heterogeneous Architectures (MPHAs). Using this methodology, several algorithms are described based on the proposed taxonomy criteria. The comparison criterium is the total execution of the parallel application. A comparative performance analysis of these algorithms is developed, using numeric results obtained through simulation. The final conclusions of this provides, not only an understanding of the scheduling process in all its levels, but also synthesizes several guidelines towards the formulation of a task scheduler for systems with this type of architecture.

Wagner Teixeira da SILVA. "Algoritmos para raciocínio evidencial usando funções de crença". Ph.D. Thesis Presentation: 19/03/91 214 p. Advisor: Ruy Luiz Milidiú

Abstract: The belief Functions Theory, developed by Arthur Dempster and Glen Shafer, is gaining strong interest by the Artificial Intelligence researchers. This interest is due mainly to two factors: a) Belief Functions represent ignorance; and, b) Belief Functions work with incomplete models. However, this Theory has its utilization limited by two causes: the exponential time process of combining evidence that it generally shows: and the lack of a general decision strategy. In order to improve this theoretical tool, this thesis proposes some polynomial time algorithms for combining evidence and also proposes a methodology for decision making with a belief function. The algorithms combine a particular type of belief functions among themselves or with other types of belief functions. The proposed methodology for decision making is based on the maximization of expected utility principle, in a context of partial ignorance. This methodology incorporates the pessimistic and optimistic attitudes, and also a convex combination of pessimistic and optimistic attitudes. Some applications are also proposed here: (1)

Electoral preference with belief function; (2) Information retrieval using belief function; and (3) Non-monotonic reasoning with belief function.

Wong Hao CHI. “Esquemas abstratos”. M.Sc. Diss. Presentation: 06/11/91 138 p. Advisors: Luiz Carlos Pereira (FIL) and Paulo Augusto Silva Veloso

Abstract: Natural deduction, sequent calculus and typed lambda-calculus are formalisms related to automated theorem proving, logic programming and functional programming, respectively. In this work, abstract schemata for these formalisms are proposed and proof-theoretically studied. Abstract schemata are structures in which concrete systems can fit. The concrete systems we consider are natural deduction and sequent calculus for propositional intuitionistic logic and the Curry-Howard isomorphic typed lambda-calculus. In addition to systems of level one, we work on higher level systems, which are based upon the higher level rules proposed by Shroeder-Heister.

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Ana Paula Moreira FRANCO. "Métodos e representações para a aquisição de linguagens de aplicação". M.Sc. Diss. Presentation: 27/04/92 123 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: The Draco Paradigm, one of the new paradigms in software engineering, emphasizes the domain idea as a basis for the software development process, maximizing the reusability concept. Domain modelling requires that the modelled knowledge should be made available. The acquisition of this knowledge is recognized to be a difficult problem. Based on the domain idea and on the Draco's Languages, a special kind of language, application language was studied. An application language is a specialized language that attempts to capture the culture of a particular social environment where the application is embedded. An application language can be seen as a restricted domain language, since the main focus is the capture of observed knowledge in the application, instead of knowledge for all applications related to that area (domain). This work proposes a strategy to acquire vocabulary in the task of language elicitation. This strategy is based on a hyperdocument, the Language Extended Lexicon (LEL). This representation is used to support and validate the vocabulary of a language. To guide the elicitation of a LEL, a specific method was developed. In order to support this method, a hypertext tool was implemented. In this implementation a re-engineering process was used. A proposal for elaborating a conceptual model of the application language, based on registered information LEL, was elaborated as part of the method. This conceptual model acts as an intermediate representation to aid the language formalization process. Experimental results on the use of the LEL and the derivation of conceptual models are presented.

Antônio Francisco do PRADO. "Estratégia de re-engenharia de software orientada a domínios". Ph.D. Thesis Presentation: 25/08/92 333 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Software re-engineering is emerging as an important area within the software engineering field. Software re-engineering aims to improve the productivity and the quality of the software maintenance process. It focuses its attention in understanding the existing source code and the available documents in order to recover the software design in such way that the redesign happens in a higher level of abstraction. Program transformation is an area of research where important results towards automation of the software development process have been achieved. The DRACO paradigm for software construction is an example of such results. DRACO combines program transformations, meta-compiler techniques and computational resources in order to develop systematically software from the specification to the implementation. The DRACO paradigm base is the idea that it is possible to produce software by using high level abstractions implemented as component libraries. The paradigm has a prototype machine, also called DRACO, that partially implements the paradigm. The DRACO machine can be viewed as an application generator, that is a meta generator. DRACO produces software using a combination of domain descriptions. Each domain description is represented by four parts: the parser, the components, the transformations and the prettyprinter. This thesis presents a domain oriented software re-engineering strategy that combines the DRACO paradigm technology of software transformation with software maintenance technologies to recover, specify, redesign and reimplement an existing software system. The strategy represents the software design, used as a re-engineering object, by the parts that constitute a DRACO domain. The parser and the components are domain required parts, and the latter may be defined with semantic actions or refinements in terms of one or more domains known to DRACO. If necessary, the prettyprinter and domain transformations are also written. The DRACO machine, which partially implements the paradigm, was used for validation of the strategy. Thus several systems that compound the DRACO machine were used to validate the strategy that has four steps: design recovering, specification of changes and enhancements, redesign and reimplementation. The DRACO machine proved to be good example in order to demonstrate the strategy. DRACO is a complex piece of software with very little design level documentation, and its re-engineering DRACO-PUC, an operational system.

Clóvis Torres FERNANDES. "Modelagem taxonômica e desenvolvimento de sistemas geradores de editores". Ph.D. Thesis Presentation: 23/12/92 279 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: The purpose of this thesis is to investigate the potential of characterizing the domain of language editor generator systems by taxonomic principles, aiming at the detection, verification and

implementation of editor generators systems that reflect the state of the art. Firstly, the own domain of taxonomic models is structured and organized, resulting in a new taxonomic modeling process. As part of the taxonomic modeling, a methodology for the characterization of future elements of a domain, named secondary instantiation, is defined. As a result of the application of the taxonomic modeling and of the secondary instantiation to the domain of the editor generator systems, a characterization and a feasibility study for implementing a future element of the domain, named ELBO, is presented. ELBO - an environment for specification of language editors - presents outstanding features not usually found in language specification environment. Out of these features, one can point out the object-oriented model of editing, developed for ELBO. In this model, an object-oriented program representation and a generic editor architecture are defined. The taxonomic modeling and the secondary instantiation processes were developed specially for satisfying the thesis purpose. However, they were developed in a generic way, allowing both processes to be applied, under certain conditions, to other domains.

Denise Aboim Sande e OLIVEIRA. "Um provador de teoremas em dedução natural capaz de complementar seu conhecimento". M.Sc. Diss. Presentation: 23/04/92 175 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: In this work we develop an automatic theorem prover for Classical Logic in the Natural Deduction system, based on the formal method for construction of theorem provers in DNCA presented by E. H. Haeusler. This prover is formally defined, in view of a greater efficiency and ease of implementation, and trying to fulfill some interesting characteristics for the use in user cooperative interface systems. The completeness and consistency results with the logic are presented. The definition is then transformed in a sequential and deterministic algorithm. An already implemented prototype is briefly described. It is then presented a method for question generation and criteria for their selection, based in the prover's structure. These questions are to allow a system, of which the prover is part, to be able to gather information, through interaction with the user, that enable the finalization of the proof of a theorem, when the already possessed knowledge base is not enough.

Eugênio José Fonseca PIMENTA. "Um ambiente de objetos para geociências". M.Sc. Diss. Presentation: 11/08/92 129 p. Advisor: Rubens Nascimento Melo

Abstract: This work deals with geophysics and geology applications development techniques, for petroleum exploration, in workstations. Concepts concerned with user interfaces styles in windowing environment are analyzed, as well as, use of object-oriented paradigm. This work proposes a base of reusable objects, in order to make the development of computer-aided exploration systems more efficient, turning easier the standardization and integration among different areas.

Galeno José de SENA. "Um modelo de sistema cooperativo baseado na modificação de solicitações de consulta e de atualização". Ph.D. Thesis Presentation: 16/09/92 231 p. Advisor: Antonio Luz Furtado

Abstract: A methodology for cooperative access to knowledge bases is presented. First, a number of works in the field of cooperative systems are described. Then one discusses the model of cooperative system designed, which consists in the systematic application of request modification rules, a request being allowed to be either a query or an update. The rules are classified in "pre" rules, applicable preliminary to the execution of a request, "s_post" rules, applicable after successful execution of a request, and "f_post" rules, applicable after failure in the request execution. Orthogonally, the rules can be domain-dependent or domain-independent. In the sequel, schemes for error recovery based on the data semantics and for structuring answers to second-order queries are described. The introduced schemes are to be activated from specific request modification rules. Next, the prototype implementing the methodology is described and several examples designed to illustrate its use are included. The conclusions aim at making clear the generality aspect inherent in the rule-directed query transformation methodology.

Heitor Neves SIMÃO JUNIOR. "Ferramenta de avaliação de esforço computacional". M.Sc. Diss. Presentation: 28/08/92 79 p. Advisor: Arndt von Staa

Abstract: The use and application of software development techniques need to be measured frequently, so the product meets the standards of software quality specifications. Program instrumentalization is one of the ways to measure these techniques. This work introduces a tool which has the property of measure and store the execution time for parts of a program. The result analysis of these measurements suggests interpretations about local computational effort through out the code, identifies optimization spots as well may be used to demonstrate the usefulness of algorithms under special circumstances.

Hélio Côrtes Vieira LOPES. "Uma estrutura de dados topológica para representação de superfícies". M.Sc. Diss. Presentation: 03/04/92 63 p. Advisors: Geovan Tavares dos Santos (MAT) and Bruno Feijó

Abstract: In this work a representation for surface with or without boundary embedded in $R^n, n \geq 3$ is introduced. The main mathematical tool used is the Handlebody representation of a surface, based on the Morse theory. The associated data structure, which is called Handle-Edge is presented. And new operators, called Morse Operators, are defined such a way as to have the precedence Morse Operators $\rightarrow$ Euler Operators. The handle-Edge data structure is applied to: topological queries, geometric interrogations, implicit modeling and multi-dimensional visualization.

Jeferson Ferreira SOARES. "O desenvolvimento de software como um objeto computável: uma linguagem para a construção de modelos executáveis de processos de software". Ph.D. Thesis Presentation: 28/04/92 182 p. Advisor: Carlos José Pereira de Lucena

Abstract: The subject of this thesis research are processes. The motivation is to propose a means to represent them in a systematic way, making it possible their precise recording and the analysis of their composition, scope and behavior. The kern of the work comprises the design and experimentation of a language to be used in the construction of process executable models, as well as a proposal for a classification of process properties. The experimental domain of this research was that of work processes related to software development.

John Lemos FORMAN. "PUCLOGO: um ambiente de programação voltado para a Educação". M.Sc. Diss. Presentation: 02/04/92 139 p. Advisor: Carlos José Pereira da Lucena

Abstract: The objective of the thesis was the specification of a set of tools integrated in an educational software environment. Such an environment is highly interactive and has a set of requirements not completely known in advance. This has led to the choice of an evolutionary development. The environment is called PUCLOGO, and is composed by the following tools: a text editor, a graphics editor, a database, a spreadsheet, a file and directory manager, an hypertext, and a programming language. The programming language is based on Logo, maintaining its simplicity and offering a list of new features that enhance the power and sophistication of the environment. The user interface is one of the main components in the uniform integration of the tools in the environment.

Luciana Ferraz THOMÉ. "Ferramentas para projeto de sistemas de banco de dados: um enfoque de metasistemas". Ph.D. Thesis Presentation: 28/08/92 107 p. Advisor: Roberto Lins de Carvalho

Abstract: The subject of this thesis is the Interactive Database System. In this context the two main interfaces: User-Application and Application-BD are analyzed. Both interfaces are studied considering both the modeling and implementation aspects. The work also presents a case study as an application of this approach. On this case study an Interactive Query System (SICOM) was developed and one Interactive Application System (SICAP) for controlling teaching projects in more than 4000 Brazilian localities.

Marcelo da Silva CORRÊA. "Raciocínio automático em situação de conhecimento incompleto e inconsistente". M.Sc. Diss. Presentation: 26/08/92 225 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: Nonmonotonic reasoning is applied to situations in which the knowledge is necessarily incomplete, eventually inaccurate as well, and very often involving information giving evidence to contradictory conclusions. The system IDL/LEI (Inconsistent Default Logic and Logic of Epistemic Inconsistency) provide a formalization of this way of reasoning. We present an approach for performing automated reasoning in this situations. We design a tableaux proof method, recursive for the propositional fragment of LEI, as well, for a restricted first order version of it. With regard to the Inconsistent Default Logic, we take restrictions on theories, such that the existence of an extension is assured. We present a procedure in order to obtain one set H from given theory, such that the deductive closure of H is an extension for it.

Marco Aurélio Régis DANTAS. "X-NET, uma linguagem para três paradigmas: suporte a programação concorrente". M.Sc. Diss. Presentation: 14/12/92 228 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The language bearing the modular (conventional), object oriented and concurrent programming paradigms is presented. This work specifies the syntax and semantic of the language regarding to concurrent programming. The computational model, the run-time support and the Syntax Direct Translator are also presented.

Maria Julia Dias de LIMA. "O modelo de contextos aninhados para documentos multimídia: definição e implementação". M.Sc. Diss. Presentation: 23/04/92 p. Advisor: José Lucas Mourão. Rangel Netto

Note: Not available.

Otávio Pêcego COELHO. "COOL - uma linguagem orientada a objetos comunicantes". Ph.D. Thesis Presentation: 10/12/92 208 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work specifies an imperative, object oriented, strongly typed language directed to parallel and concurrent programming. We investigate the main coordinates guiding a language project that has the intention of putting together the object oriented paradigm with an existing concurrent programming paradigm. A set of basic needs suggested by the contemporary distributed information systems is pointed out. As a resultant from the union of both aspects, conceptual and pragmatic, the language COOL is presented as a possible solution. Besides incorporating the major desired aspects of object oriented languages COOL offers original contribution in the incorporation of similar mechanisms offered by the formal theories on concurrence. This provides simultaneously a good abstraction level and an implementation language closer to the specification language. We present at the end of this work a formal description of the important semantic aspects of COOL.

Patricia Seefelder de ASSIS. "Indexação automática por semântica imprecisa: validação de um modelo". M.Sc. Diss. Presentation: 30/04/92 104 p. Advisor: Clarisse Sieckenius de Souza

Abstract: Automatic text indexing is usually based on models that are either essentially symbolic or essentially numeric. This work investigates the effects of an approach that relies on the use of Determination Grammars on the linguistic side and Belief Function on the probabilistic side to build a hybrid indexing model that uses a thesaurus to find keywords (descriptors). A simplified prototype was implemented on SUN workstations using the C language to the analysis of Portuguese texts from the FONTE database at CNEN. The thesaurus development by CESP has been used to support the indexing.

Paulo Roma CAVALCANTI. "Criação e manutenção de subdivisões do espaço". Ph.D. Thesis Presentation: 19/03/92 133 p. Advisors: Paulo Cezar Pinto Carvalho (IMPA) and Marcelo Gattass

Abstract: Geometric Modeling is central to many CAD systems, even though the models traditionally employed do not satisfy all applications. Scientific applications need to deal with objects made of different materials, with distinct properties. Contact relationships are crucial in kinematics, assembly planning, robotic, and geology. In this context, it is necessary to model aggregates of objects (including solids with lower dimensional parts), keeping track of the adjacency relationship among these objects.

This suggests the creation of a development environment where the applications can share not only data but also algorithms that process and transform these data. The way to handle such problems is by supporting arbitrary space subdivisions, instead of the classical subdivision in three regions (interior, boundary, and exterior of a solid object). Planar subdivisions are simpler, but also important, mainly in geology and cartography. The creation of a planar subdivision differs from the creation of a spatial subdivision, specially by the interaction with the user (by the modeling process). The aim of this work is to deal with the problem of creating, combining, and maintaining, in real time, subdivisions of the two- and three-dimensional Euclidean space. The main goal is devising a methodology that permits the construction of subdivisions which are topologically and geometrically consistent. This methodology is determined by a modeling process, a mathematical model, and a representation scheme. To achieve this, some extensions were added to the concepts of selective geometric complex, creating the basis for a flexible scheme that eliminates several restrictions imposed by traditional modeling. The proposed representation scheme maintains an explicit boundary representation and allows one to add Boolean operations without any additional restriction (furthermore, it enables the implementation of efficient geometrical algorithms). This provides a powerful set of modeling tools that can be used as the base for the creation of an interactive construction language for space subdivisions. The construction of basic operations which allow the insertion of a surface patch or a curve segment in a given subdivision in linear time, is also described in detail. This means that a complete subdivision can be built in a quadratic time with the number of subdivision's elements.

Paulo Sérgio Conceição de ALENCAR. "Uma abordagem lógica para sistemas evolutivos de software". Ph.D. Thesis Presentation: 22/05/92 230 p. Advisor: Carlos José Pereira de Lucena

Abstract: In this thesis we present a logical framework for evolving software systems that can be seen as a programming-in-the-large transformation process applied to software system architectural descriptions. A generalized formal description of their architectures from the evolutive viewpoint is given. The semantics of the change process of the software configuration states (formally defined as software structure graphs) is presented through a logical approach that involves theories representing these states and their changes when affected by actions. The adopted logical formalism allows us to describe and reason about changes of the structure, the module interdependencies viewed as dependencies between the interfaces of the communicating modules (interface changes) and the functional aspects of the components of the evolving software system architectural description. A modal (action) extension of the many-sorted first-order logic is used to capture the change aspects of the high-level software descriptions. A realization of the semantics of the change process of architectural descriptions of evolving software systems is presented through a general tableau-based proof method for a variant of the proposed logic. Reasoning about functional aspects of these descriptions is achieved through the interaction of a theorem prover for the proposed metalogic formalism and a theorem prover for reasoning about sequential programs. In this approach the alterations of software descriptions, viewed as programming-in-the-large transformations, can be stated by means of the descriptive/prescriptive (deontic) features of actions.

Ricardo Caetano de MORAES. "Interfaces cooperativas para sistemas de informação: um estudo de caso". M.Sc. Diss. Presentation: 30/11/92 121 p. Advisor: Clarisse Siecknius de Souza

Abstract: Many interactive systems present difficulties to their users because of problems in design and implementation of their interfaces. These problems are specially critical in Information Systems. This work proposes a redesign of the interface of a specific Information System - the SINTESE system. Such redesign is based on cooperative principles which are included in the new interface. An adaptive user model, designed to support cooperative interaction is presented. Also, the potential benefits to users resulting from increasing cooperativity of the interface are extensively discussed.

Silvio JABLONSKI. "Uma álgebra para suportar linguagens de SGBD's orientados a objetos". M.Sc. Diss. Presentation: 29/12/92 97 p. Advisor: Rosana de Saldanha da Gama Lanzelotte

Abstract: The evolution of object-oriented DBMS has determined the discussion on formal models that could encompass all of its features, as well as the needs of declarative interfaces. Most of the research on a formal approach to object-oriented DBMS has been directed to develop models for query languages. There isn't a generic intermediate language suitable to be used at the implementation level, that could

accomplish the same role of the relational algebra. In this paper we propose an algebra to support object-oriented DBMS languages. The algebra aims the DBMS implementation layer and can be used to represent execution plans generated by the system optimizer. Our proposal is related to the OPUS Project that have as its target to offer user friendly interfaces for DBMS of new technologies. The algebra is based on a generic data model in order to support different DBMS languages. Its definition is made in two levels: a conceptual algebra independent from the physical level, and a annotated algebra aiming the specialization of the algebra to a specific storage system. The expressive power of the algebra is analyzed by mapping the IQL constructions to it. IQL is a declarative language for deductive object-oriented DBMS with well defined semantics and expressive power. An example of the annotated algebra is defined for GEODE, a storage system for complex objects available at the Computer Science Department, PUC-Rio.

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Adriana Carlos PAZ. “Um ambiente para prova automática de teoremas em dedução natural”. M.Sc. Diss. Presentation: 23/08/93 85 p. Advisor: Edward Hermann Haeusler

Abstract: The mechanization of theorem proving is mainly concerned with the development of generic proof procedures for many different types of logic, rather than with the construction of specific provers. We present a generator of automatic provers in a natural deduction, which constructs a prover from the rules of the intended logic, optionally, providing some degree of interaction with users. They can interrupt, analyze and participate in the proof's development or leave its construction completely to the prover. The prover generator has its scope delimited by those logic that can be specified in DNCA.

Alberto Henrique de Vasconcellos SARMENTO. “X-Net, uma linguagem para três paradigmas: arquitetura básica”. M.Sc. Diss. Presentation: 11/02/93 103 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Not provided.

Alexandre RIBENBOIM. “O2 CONSULT - apoiando usuários do sistema O2 na formulação de consultas”. M.Sc. Diss. Presentation: 25/10/93 71 p. Advisor: Rosana de Saldanha da Gama Lanzelotte

Abstract: Database Management Systems (DBMS) usually offer interactive graphic-based tools to formulate queries. Nowadays, facilities like these are very common in relational systems, but still absent in new Object-oriented DBMSs. This work presents the specification and implementation of a visual query language for the Object-oriented DBMS O2, called O2CONSULT. The queries are formulated by navigating through the database schema graph and by specifying an example of the expected result.

Ana Lucia Vilela GOMES. “Geração de interfaces gráficas com usuários a partir de especificações funcionais”. M.Sc. Diss. Presentation: 13/12/93 123 p. Advisor: Arndt von Staa

Abstract: Graphical user interfaces, i.e., a set of interrelated windows with which the user interacts, are specified from system specifications using information obtained from DFD's and Data Dictionaries. Given the user interface specification, the necessary code for its implementation is generated in IUP/LED producing a prototype for the system. The generated interface uses a basic set of widgets found on most GUI's. TALISMAN is used to specify the system, the interface and its windows.

Anderson de Almeida ANDRÉ. “Análise orientada a objetos - um enfoque metodológico”. M.Sc. Diss. Presentation: 21/12/93 p. Advisor: Arndt von Staa

Note: Not available.

André de Barros POTENGY. “Um modelo de design para computação distribuída”. M.Sc. Diss. Presentation: 28/12/93 76 p. Advisor: Carlos José Pereira de Lucena

Abstract: Solutions to many problems in scientific computing can be expressed as parallel computations that can be implemented on multi-processor systems or networks of powerful workstations. Design and implementations of these distributed parallel programs usually is a complex effort which requires cooperation among the participating tasks in order to ensure correct operation and consistency. This paper introduces the ADV/ROI design approach that combines Abstract Data Views (ADVs) and Remote Object Invocation (ROI) and applies this approach to the implementation of distributed parallel programs using the principles of object-oriented design. The ADV/ROI approach is applied in two steps. First, a working sequential version of a program is implemented and then this program is converted to the distributed parallel version using a well-defined procedure involving multiple inheritance. We also demonstrate that consistency of the views of the computation are maintained as the program evolves

from its conventional to distributed version. The ADV/ROI approach is then demonstrated by showing the design and implementation of a distributed parallel volumetric ray tracer.

Antonio Carlos de Azevedo RITTO. "Ambiente de desenvolvimento de soluções". Ph.D. Thesis Presentation: 20/12/93 [irr.] p. Advisor: Arndt von Staa

Abstract: A modern organization must pay attention to success criteria such as user satisfaction, availability of people able to develop new ideas and development processes, flexibility and quick adaptation to changes. Computer based technologies constitute an environment for organizational changes. However, the power of the new technologies is due much more to new ways of act and to do things, than to having existing processes performing better. Nothing is changing more rapidly than the end user's view of computing. There are more powerful means to communicate , more means to gain access to information inside and outside the organization, and sophisticated tools to retrieve effectively needed information in a timely fashion and adequate format. New technologies are shifting from centralized computing facilities to end users. They allow end users to explore new knowledge fields, new ways to solve and to analyze user problems. This power shift creates new opportunities, but also creates difficulties to the organization, such as effort dispersion, multiple and inconsistent information, and organization disruption. Several questions arise in this context. How to combine the desired autonomy of organizational units with the necessary overall integrity of this organization? How to provide computing freedom to end users without loosing control over costs, information and data consistency? How to disseminate and generalize solutions developed by a specific unit? How to maintain order and still allow a large number of problem solving alternatives each of which directed to a specific problem? Our thesis states that it is possible to establish a computing model capable to support users process evolution, to integrate and provide for autonomous units and to provide viable answers to the above questions. This model shifts power from central computing facilities to decentralized organization units and promotes the introduction of new values and means to effectively solve users problems. Furthermore, it identifies the role of the central computing facility as one of coordination and of standardization, assuring the establishment and maintenance of an organization wide infra-structure, is capable of capturing and recording new knowledge acquired in individual units and disseminating it throughout the whole organization.

Carlos Henrique LEVY. "IUP/LED: uma ferramenta portátil de interface com usuário". M.Sc. Diss. Presentation: 26/08/93 63 p. Advisor: Carlos José Pereira de Lucena

Abstract: The objective of this work is to describe and analyze the design and implementation of a portable user interface system called IUP/LED, from the point of view of portability and layout specification. The portability strategy adopted in IUP/LED allows applications the choice of whether to inherit native look-and-feel. For layouts specification IUP/LED implements an abstract model based on the boxes-and-glue paradigm of TEX.

Carlos Henrique Reis CARDOSO. "Sistema especialista baseado em regras para escalonamento de serviços em ambiente MVS". M.Sc. Diss. Presentation: 12/03/93 109 p. Advisor: Antonio Luz Furtado

Abstract: English abstract not provided.

Helena Maria GUARISCO. "Em busca de um SGIU-00 para o projeto EITIS". M.Sc. Diss. Presentation: 07/05/93 p. Advisor: Rubens Nascimento Melo

Note: Not available.

Hélio Geraldo Pacheco de MAGALHÃES. "O protótipo de um sistema de Walk-Through utilizando o método de radiosidade". M.Sc. Diss. Presentation: 27/09/93 71 p. Advisors: Marcelo Dreux (MEC/PUC) and Bruno Feijó

Abstract: This present work studies the computer modeled animation method in static environments - walk-through - and its behavior under a workstation with graphic accelerators. The radiosity global illumination method has been used to account for light reflection among surfaces. This method is independent of the observer position. The characteristics, needs and problems of a walk-through system are described and it is presented a prototype of such a system.

José Maria COELHO FILHO. "Ambiente genérico de dedução automática baseado em resolução". M.Sc. Diss. Presentation: 14/09/93 100 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: This dissertation presents a generic environment for theorem proving based on resolution method. The resolution method has been adapted to many non-classical logic. However, these methods have more differences than similarities, when compared each other. This occurs, in part, because non-classical logic have different characteristics. With the goal of presenting a resolution method that can be applied to a variety of non-classical logic in a uniform way, it was developed an environment that implements a generic method. When a given logic is used, their specific concepts are passed to the environment. Then the automatic theorem proving can be executed.

Lucia Blondet BARUQUE. "Auditoria interna assistida por computador". M.Sc. Diss. Presentation: 12/04/93 110 p. Advisor: Rubens Nascimento Melo

Abstract: The aim of this work is to contribute to the area of Computer Aided Internal Auditing. Initially the main concepts of the area are introduced and then the process of the Internal Auditing is presented in details, so that the central Data Base to all which assist the main functions of the internal auditor may be specified. Due to its intrinsic complexity and diversification, these tools range from a simple text editor to sophisticated expert systems. Besides an overview of such tools, this work also includes the design and relational implementation of the Data Base of Internal Auditing.

Luiz Paulo Alves FRANCA. "Projeto orientado a objetos: um enfoque metodológico". M.Sc. Diss. Presentation: 16/06/93 235 p. Advisor: Arndt von Staa

Abstract: This dissertation presents a proposal for Object Oriented Design, describing the activities and theirs products, emphasizing the modeling activity. Related work on Object Oriented Design is discussed. Concepts in CASE, Quality and Reutilization are examined within this approach. The application of this proposal in the development of a prototype using TOOL language is demonstrated.

Marcos Fernando Ribeiro FERRAZ. "Reconstituição de seções geológicas utilizando subdivisões planares, transformações geométricas e computação gráfica interativa". M.Sc. Diss. Presentation: 08/09/93 p. Advisors: Paulo Cezar Pinto Carvalho (IMPA) and Marcelo Gattass

Note: Not available.

Maria Claudia MERÉ. "Lógicas relevantes: formalismo e semântica". Ph.D. Thesis Presentation: 31/08/93 181 p. Advisor: Paulo Augusto Silva Veloso

Abstract: The main purpose of this thesis is to present a methodology of work in Categorical Logics that allows us to write logics in terms of categories and algebras. We present, among other, the family of relevant logics, which have been using to study computational aspects. This family is showed from the point of view of Categorical Logic. For each logic we present the syntactic systems and discuss their semantics (algebraic and categorical). Finally, we construct formal definitions for categorical and algebraic models. These definitions represent a guide for the construction of new categorical and algebraic models.

Maria Lúcia Moniz de Aragão Calomino ASTORGA. "Sequenciamento progressivo: uma aplicação a distribuição de ações de uma carteira de investimento". M.Sc. Diss. Presentation: 02/04/93 92 p. Advisor: Ruy Luiz Milidiú

Abstract: SDS - Stock Distribution System - is an expert system which distributes lots of stocks negotiated in the Stock Exchange among several portfolios administrated by a Stock Broker. This paper defines a model to represent this task, the Forward progression Model. Forward Progression splits the principal task into sub-tasks so that the execution of them in a progressive order is the same as the execution of the first one. The specification of SDS was built from this model. The preliminary results of the implementation of the system are reported. Finally, several recommendations are presented for the complete implementation of SDS.

Mario GHEINER. "X-NET - Uma linguagem para três paradigmas: interface de usuário". M.Sc. Diss. Presentation: 29/01/93 p. Advisor: Sergio Eduardo Ribeiro de Carvalho

Note: Not available.

Mario LACERDA. "LBF+ uma linguagem para banco de dados funcionais". M.Sc. Diss. Presentation: 30/06/93 121 p. Advisor: Rubens Nascimento Melo

Abstract: This work presents a data base programming language based on the DAPLEX language. It is an extension of the functional data base language called LBF, with some characteristics of the object-oriented databases systems defined by Atkinson. In this work we also point out the advantages of the functional model and, specifically, the Shipman proposal and some of the function model extension to non-standard applications are revised. The LBF + language mixes characteristics from other systems such as IRIS, PDM, EXODUS, GEMSTONE and O2. The idea of this work is to show a System with a language which allows the user, in a concise and uniform way, to create, operate and update his database and application programs.

Maurício KISCHINHEVSKY. "Modelagem e simulação numérica paralela do escoamento de fluidos com contaminantes radiativos em meios porosos naturalmente fraturados". Ph.D. Thesis Presentation: 17/08/93 113 p. Advisors: Paulo Jorge Paes Leme and Therezinha Souza da Costa

Abstract: The objective of this work is to develop an efficient numerical simulator to analyze high level radioactive waste contamination flow in fractured rock formations. It performs farfield effects studies of different scenarios of leakage occurring from a repository. We start by modeling the groundwater flow in a fractured porous medium. The concentrations of contaminants evolves by convection and diffusion within the groundwater. These concentrations are modified by decay of the contaminants into other radioactive species, as well as by their retention in the rock. We treat the flow along the whole domain in a dual porosity framework. This means that the model developed includes the interaction between the flow in the rock formation and the macroscopic fracture system. Along the matrix blocks flow, the coupling with the fracture system occurs via its boundary conditions. Along the fractures, the coupling occurs through source terms. The models are discretized by finite volume techniques. The numerical algorithms are specially designed to perform the corresponding numerical calculations in an adequate parallel form. At each time step calculation, the algorithm has two parts. One corresponding to the flow within the matrix blocks, is trivially paralleled. The second part treats the full coupled system in an implicit fashion, the resulting non-linear system is then linearized through the boundary conditions of each matrix block. The resulting system is again treated in parallel. In this case, an iterative method seems to be recommended to benefit from a message-based parallel environment. In order to enhance the performance of the algorithm, a two grid procedure is implemented to fasten the solution in relation to classical iterative methods. Notice that convection diffusion problems are not well suited for standard multigrid approaches. A physical set of prolongation, restriction and coarse grid operator is then adopted to overcome this difficulty. A sequential code was developed in FORTRAN and is currently in use to validate the model and its numerical scheme, in the completely saturated case. Many tests were necessary to evaluate the overall potential for parallel processing of the model and its numerical scheme. For this purpose a Canopy code was developed at LAFEX/CBPF. The main questions to consider refer to the adequacy of the scheme to circumstances like various sizing of block and fracture problems, number of iterative steps and their corresponding speedups in an ACPMAPS environment.

Mônica Maria Ferreira da COSTA. "Estudo de viabilidade para um sistema de animação comportamental". M.Sc. Diss. Presentation: 30/03/93 73 p. Advisor: Bruno Feijó

Abstract: The present work represents a viability study for a Behavioral Animation system and proposes a conceptual model to the implementation of such a system. The developed model follows the approach of Task Level Animation and is based on Planning and first order logic. For concreteness purposes, the prototype of an animation system based on that model is described.

Noemi de La Rocque RODRIGUEZ. "Um sistema de tipos orientado por objetos para linguagens de programação persistentes". Ph.D. Thesis. Presentation: 11/01/93 167 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: This thesis describes a type system which combines the flexibility stemming facilities such as inheritance, polymorphism, and parametric types with strong static type checking. Also, in this type system, exception signaling is part of the specification of operations, in a way which is consistent with the type compatibility rules provided by inheritance. This type system is shown to be adequate for the provision of persistence in an object oriented language. Two examples of application of this system are discussed.

Paula Ypiranga dos GUARANYS. "Planejamento da utilização casual: projeto e utilização de um laboratório para estudos cognitivos da interface homem-máquina". Ph.D. Thesis Presentation: 23/12/93 155 p. Advisor: Carlos José Pereira de Lucena

Abstract: PUC is a software environment for the development of user interface that supports experiments by the user. For that reason it can be seen as a laboratory for interface design. It has been designed to be handled by users with different knowledge levels coming from different backgrounds. Its architecture is based on the customization of a general blackboard model. The main characteristics of this software laboratory environment are: independence from the functionality of the application, the provision for an embedded interface designer and its ability to generate a model of the user knowledge about the application through a double static stereotype.

Paulo Pereira JUCÁ. "Treinamento da fala - uma aplicação multimídia, usando modelo de contextos aninhados". M.Sc. Diss. Presentation: 06/08/93 149 p. Advisor: Luiz Fernando Gomes Soares

Abstract: This work describes the development of the application Treinamento da Fala in a Windows environment, using the Nested Context Model as a manager of multimedia objects. The application is an auxiliary tool to the speech training of deaf, adding to the auditory return of sound a visual feedback, through a graphic representation of the voice signal. The graphic representation shows the structural areas of the vocal tract involved in sound production, calculated from the reflection coefficient of the autocorrelation equations of the LPC model. Although it is restricted to the exhibition of vowel sounds, the tool may be an excellent aid to the work of the educators of the deaf. Later expansions will permit the training of words, in addition to vocalic sounds, and the inclusion of a better man(deaf)/machine interface.

Ricardo Portella de AGUIAR. "Em busca de uma implementação eficiente de um sistema de gerência de objetos". M.Sc. Diss. Presentation: 22/01/93 88 p. Advisor: Rubens Nascimento Melo

Abstract: This work aims at contributing to the development of an object management system for the EITIS project, starting from studies on storage methods, solutions adopted in other existing object management systems and Benchmark techniques applicable to Databases. This system, named OMS-Engine, is developed based on the definition of an object oriented database model and its primitives are defined taking into account the main functions of tests proposed by the chosen Benchmark. Those primitives are the basis for a comparison between the OMS-Engine and the O2Engine.

Sérgio Augusto Simonetti GOMES. "Computação gráfica interativa-adaptativa aplicada a escoamentos complexos em fenômenos de transporte". M.Sc. Diss. Presentation: 10/08/93 115 p. Advisors: Marcelo Dreux (MEC/PUC) and Bruno Feijó

Abstract: This work presents a interactive-adaptive graphic system to aid the prediction of complex flows. The interactive-adaptive methods have become increasingly useful in modern computational mechanics. The system developed here apply these concepts to a numerical method for analysis of heat/mass transfer in fluid-flow processes. The finite volume method was selected to solve the conservation equations. The coupling between pressure and velocity was resolved by the SIMPLE algorithm. The system of algebraic equations of the different conservation equations were solved in a sequential manner utilizing the iterative TDMA line-by-line method. Relating to the numerical method, the dependent variable interpolation scheme and the algorithms for solve the coupled velocity-pressure and the algebraic equations are presented. Relating to the interactive-adaptive methods, it is discussed how to monitor the analysis results, to change parameters and to control the flow of the analysis. Also, the visualization module is discussed and the graphical representation techniques are presented. Finally, examples are shown to illustrate the techniques and demonstrate their power for both practical nonlinear analysis and computational mechanics research.

Sérgio COLCHER. "Uma arquitetura aberta para sistemas hipermídia". M.Sc. Diss. Presentation: 17/08/93 93 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Most hypermedia systems have been developed as a monolithic and self-contained application in the sense that: (1) they do not provide or identify the basic common services that could be reused by many applications; (2) by using proprietary data structures they make it very difficult to interchange information; (3) they do not allow the utilization or integration of existing tools such as editors or browsers for the various media types. In this work, an open architecture for hypermedia systems is presented that allows the implementation of a set of basic multimedia/hypermedia services, providing an environment where applications can be constructed to cooperate and to be integrated, and where information can be interchange and shared between local or remote applications. It is also described some aspects of the implementation of the HyperProp system - a system which provides basic support for implementation and integration of application in a hypermedia environment.

Sergio SCHEER. "Uma análise crítica sobre o tratamento cognitivo de design em sistemas de CAD". Ph.D. Thesis Presentation: 24/08/93 193 p. Advisor: Bruno Feijó

Abstract: This work deals with the design phenomena. It intends to contribute to this understanding of this central process in productive lines. A critical approach on cognitive-based design is developed. The main aspects on knowledge elicitation and data and process modeling are presented and discussed. In consequence, a sequence of procedures for the design knowledge base construction is proposed. The final effort is the study-case, reaching the initial validation for the exposed ideas. The practical viability of this approach is demonstrated by means of this sample application.

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Adolfo Gil MATHIAS. "O gerenciamento de conflitos na elicitação de requisitos". M.Sc. Diss. Presentation: 14/09/94 197 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: The proposed work is a method that supports meetings of requirements elicitation. Each meeting has to be carefully planned, with its objectives well defined. The people directly related to the system must be convoked to the meeting. A leader will do the work of controlling and coordinating the activities during the meeting, aiming the elaboration of a list of requirements that the system has to reach. After each meeting, the participants answer a questionnaire that will be submitted to a system that will detect the main conflicts that has occurred at the meeting, as well the main causes of the conflicts, giving suggestions about the most adequate management techniques to each situation. The conflicts will point the main problems observed by the participants and by the leader during the meeting and that have prejudiced the requirements. New meetings will be done to manage the conflicts detected, aiming to augment the quality of the system requirements. The cycle of meetings will end when there won't exist any more conflicts that can prejudice the next stages of the process of system development. The most important result of the meetings is a list of requirements produced by refinements aiming the elimination of the main problems related to the requirements elicitation.

Antonio Escaño SCURI. "Filtros interativos para imagens digitais no domínio da freqüência". M.Sc. Diss. Presentation: 14/09/94 50 p. Advisor: Bruno Feijó

Abstract: The widespread use of interactive environments as well as the development of powerful Graphical User Interfaces have made it possible to reach new solutions to old problems. In the field of Digital Image Processing this can be very useful, as for the technique of spatial filtering in the frequency domain. With this technique the Fast Fourier Transform (FFT) of an image is obtained and then edited to preserve or reject specific regions, and then the Inverse Fast Transform (IFFT) of the edited FFT provides the resulting filtered image. The present work studies the use of interface elements to create graphical masks that function as filters, and proposes the combination of these filters so as to provide great flexibility to the filtering technique. The creation of the filters and the implementation of the FFT algorithms were done in a prototype of a new image processing system, SPID, which is under development as a platform for Image Processing applications under the Microsoft Windows TM graphical environment.

Antonio de Pádua Albuquerque OLIVEIRA. "SERBAC - Suporte a engenharia de requisitos com bases em ações concretas". M.Sc. Diss. Presentation: 24/03/94 34 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: SERBAC is the proposal for a Requirement Definition process. The process uses the Language Extended Lexicon as the main source of External Requirements of an Information System or of a Software System. The External System Requirements are proceeding from: the Concrete Actions realized by the system clients, the External Events answered, and also from Inputs and Outputs of the system. In this dissertation, we discuss the chief problems that the requirements engineer faces during the Elicitation and during the System Requirements Modeling. We also presented a taxonomy for requirements and a survey of the most frequent mistakes in the Systems Requirements. SERBAC was used in the External Requirements Elicitation of the AVP - Autorizações de Viagens no País, a real system for trip management.

Ana Paula Pinho GILVAZ. "FAES - Um assistente para entrevistas". M.Sc. Diss. Presentation: 23/06/94 140 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Interviewing is the most common elicitation technique. We designed an automated tool - FAES, to support the software engineer during interviews. FAES implements an interview strategy derived from a conceptual model. The conceptual model was built from three methodology approaches used on Information Systems. FAES is an assistant tool that besides storing information from interview in a structured form, provides real-time information analysis and generates new questions to clarify some aspects and get new information.

Angelo Ernani Maia CIARLINI. "Sistema para gerência de banco de dados orientados a objetos em ambiente Prolog (SIGBOP)". M.Sc. Diss. Presentation: 28/09/94 100 p. Advisor: Rosana de Saldanha da Gama Lanzelotte

Abstract: Relational database management systems (DBMS') are now almost a standard, but they don't provide enough resources to develop non-conventional applications. Artificial Intelligence applications, need to manage knowledge (data and programs) uniformly, while other applications, like Computer Aided Design (CAD) systems, need to manage complex structures. To solve the needs of the former, deductive systems, using logic programming, were proposed and, to solve the needs of the later, the object oriented database model is currently adopted. Prolog is the main implementation of logic language. It provides a high abstraction level, specially suited to develop programs in a quick fashion. The object oriented paradigm provides also means to increment programmer's productivity. In this paper, we try to integrate the object oriented database model and Prolog into an environment based on a personal computer running Microsoft Windows. The main objective is to provide the means to develop quickly non-conventional database applications in such environment, specially applications that need both to manage complex structures and to manage uniformly data and programs. The prototype was validated through the development of a complex and non-trivial volume engineering application.

Bruno Costa da SILVA. "Deformação e metamorfose de imagens digitais". M.Sc. Diss. Presentation: 07/06/94 57 p. Advisors: Jonas de Miranda Gomes (IMPA) and Bruno Feijó

Abstract: Image metamorphosis is simply a transformation that maps one image into another, altering both its shape and intensities; images deformation is a transformation that changes the shape of an image. These types of transformation have a wide range of applications in remote sensing, medical imaging and, specially, in entertainment industry. This work attempts, through the use of adequate mathematical models, to conceptually describe and analyze digital image deformation and metamorphosis transformations. Moreover, the main techniques for obtaining these transformations are analyzed under this conceptual framework, and topics such as user interface, signal sampling and reconstruction, and two-pass transformations are discussed. Concluding, an implementation and some of its results and problems are presented.

Carlos César LAUFER. "Representações de clichês de conversação para cooperação". M.Sc. Diss. Presentation: 28/07/94 108 p. Advisor: Hugo Fuks

Abstract: Cliches - conversation stereotypes - are state transition machines that control the sequencing of dialog events in a conversation between two participants. Cliches are represented in the language of ACCORD - a framework for dialog representation systems using commitment and dialog. The notion of contract - mapped to Winograd's Conversation for Action diagram - is presented as an example of the framework's ability for representation conversation cliches for cooperative work.

Carlos Henrique Cabral DUARTE. "O desenvolvimento de um compilador MIRANDA usando um método orientado a objetos". M.Sc. Diss. Presentation: 29/07/94 [irr.] p. Advisor: Roberto Ierusalimschy

Abstract: The development of functional languages compilers is a complex activity, which demands a careful design to avoid an inefficient final product and to allow it to be maintained and extended in a simple manner. In this paper we describe the development of a compiler for Miranda functional language, developed using a method which joins object orientation as a development process approach and formal specification of programming languages as a design technique, changing this activity into a more tractable and systematic one.

Claudia Marcia Pereira MOUTINHO. "Gerência de redes de computadores: as arquiteturas padronizadas e suas implementações". M.Sc. Diss. Presentation: 25/04/94 226 p. Advisor: Michael Anthony Stanton

Abstract: As the complexity of computer network increases, the network management activity becomes more important. An efficient management solution for heterogeneous networks is only possible through the adoption of a standard. Although some network management standards have been defined several years ago, the management tools available today show low levels of sophisticated and automation, and the network administrators have to interfere manually in most management tasks. This paper describes the ISO and the internet community management architectures standards. Some management products are described as examples of the implementation of these standards. This paper also discusses some advanced features that can be added to management tools, improving their "intelligence" and simplifying the network administrators' work.

Eduardo Gonçalves GALÚCIO. "O Sistema IMAGO/2 para processamento digital de imagens orientado a objetos". M.Sc. Diss. Presentation: 29/04/94 132 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Imago-2 is a generic system to process digital images. The system has a graphical user interface which makes it easy to use. Various operating targeting image processing were implemented. These operations can classify among pontual, local, geometric and transforms. The images can be visualized with various qualities on different graphic hardware. Various image types can be processed: monochromatic or colored, having pixels as bytes, signed double bytes, IEEE floating point and complex of IEEE floating point. This system is different from similar ones because of its object oriented architecture, which allowed the handling of system's size without any increase in complexity, besides other advantages. Other important characteristic is the system's extensibility in many directions: the number of its operation may increase and other image types may be included.

Elvira Maria Antunes UCHÔA. "HEROS - um sistema de banco de dados heterogêneos: integrando esquemas". M.Sc. Diss. Presentation: 11/02/94 202 p. Advisor: Rubens Nascimento Melo

Abstract: The increase of the volume of information stored in different Databases Management Systems brings the need of accessing the information without changing it. Heterogeneous Databases Systems has been shown to be the best solution for this problem. The characteristics and abilities of the Heterogeneous databases Systems depends strongly on data model used to express its global schema. The data model must capture the meaning of all data stored in the component Database Systems. Thus, it should be able to capture the specific characteristic of the different integrated data models. Since the component Database Systems are designed and implemented independently, they are typically incompatibilities between the data stored in each of them. Since this heterogeneity has been identified, the data model should support a treatment to produce a single representation on the global schema and insure the data consistency and integrity. In this work, we propose an Object Model to support the global schema of HEROS - a Heterogeneous Databases System. A systematic for component Database Systems schema integration is shown, which is exemplified through the development of case study, with the proposed model.

Fausto Veras Maranhão AYRES. "Adicionando persistência a linguagem PASCAL orientada a objetos". M.Sc. Diss. Presentation: 29/08/94 92 p. Advisor: Rubens Nascimento Melo

Abstract: This work presents the database programming language POP (Persistent Object-oriented Pascal) which is an extension of the object-oriented Pascal language. This extension improves the base language with the main feature of database systems - the persistence. The proposed persistence model allows an integration of the base language and a storing subsystem letting the programmer free of the movement of complex objects between volatile and persistent stores. The work does an overview of different persistence models that is used for the evaluation of the proposed one. Implementation issues is also presented.

Florys Fábia Almeida PEREIRA. "CDR-uma ferramenta de apoio a cooperação na definição de requisitos". M.Sc. Diss. Presentation: 08/03/94 115 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: From the union of concepts of workgroups and discussion methods oriented to the requirements elicitation of a model and a tool called CDR - Requirements Definition Cooperation -

which in its conception conjugates and adapts methods and procedures already used separately, providing an order and a framework to collect systems requirements. The model provides an environment for the study of the problem to be solved, requirements collect and definition, whereas different opinions and views points of the system user and projects customers.

Isabel Leite CAFEZEIRO. "Protótipo para especificação de processos baseado em CSP: um enfoque em orientação a objetos". M.Sc. Diss. Presentation: 24/03/94 155 p. Advisor: Edward Hermann Haeusler

Abstract: Not provided.

José Helano Matos NOGUEIRA. "Reconhecimento de planos: uma teoria formal híbrida e implementação de um sistema reconhecedor". M.Sc. Diss. Presentation: 01/12/94 153 p. Advisor: Antonio Luz Furtado

Abstract: The central part of intelligent reasoning resides in the agent (human or machine) capacity to realize plans and explain them. Plan recognition process consists in explain observed actions. In this way, plan recognition find out methods that explain this action in some plan instances. Plan recognition complexity appears when we try to infer reasonable plan of actions which are not explicitly observed, but actions which are implicit into agent's knowledge. This process is not purely deductive because it uses a powerful knowledge representation model, heuristics, and a typical library. So, we create a Hybrid Formal Theory (HFT), based in Kautz's formal theory where we include new concepts, rules, and improvements. We also create a Plan Recognition System (RPS) that implement our HFT. Furthermore, in our HFT and RPS we treat some important topics to plan recognition: priorities, exceptions, total and partial plans, and multiple observations.

Lucia DARSA. "Deformação e metamorfose de objetos gráficos". M.Sc. Diss. Presentation: 14/07/94 59 p. Advisors: Jonas de Miranda Gomes (IMPA) and Bruno Feijó

Abstract: Metamorphosis is defined as a complete change of shape, structure or substance of something. This common sense dictionary definition corresponds to the three main forms of information that must be represented in object models: geometry, topology and properties. This dissertation attempts to describe and analyze the metamorphosis problem in R^n, through the use of objects general enough to encompass, in essence, all classical forms of representation in R^2 and R^3. Existing techniques are analyzed as subcases of the generalization, integrating the treatment given to the previously dissociated 2D and 3D metamorphosis problems, and allowing the sharing of some of the techniques. A new approach for 3D metamorphosis, based on a 2D technique, and an implementation are described.

Luiz Claudio Schara MAGALHÃES. "Correio eletrônico em português". M.Sc. Diss. Presentation: 04/03/94 105 p. Advisor: Michael Anthony Stanton

Abstract: The objective of this work is to present alternatives for the transmission of messages in Portuguese using electronic mail. It begins by describing some of the largest networks in operation. Then the concepts of electronic mail are presented, together with the standards that allow the use of a Portuguese-compatible set of characters. A simple coding that may be used in the transmission to these new standards is suggested. Finally, the software that permit the use of this codification and of different sets of characters are analyzed.

Luiz de Lacerda COUTINHO. "Estruturas de dados para o ambiente orientado a objetos Tool". M.Sc. Diss. Presentation: 17/03/94 141 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Tool is an object and event oriented programming environment that simplifies the task of building applications with graphical user interfaces. The current version of the programming language and libraries does not support basic data structures. Our objective is to study basic data structures and to include these structures in the context of the object oriented language TOOL. The classes that model data structures will be extended with a number of methods, increasing TOOL's flexibility. A special type of iterator is proposed, simplifying the task of navigating through data structures. Several existing

implementations are analyzed, involving concepts, such as variance, levels of abstraction, generic data types and forms of inheritance.

Marcelo Maranhão ESTELLITA. "Estudo de critérios de escalonamento em ambiente multiprogramado sob restrições de repartição de recursos". M.Sc. Diss. Presentation: 27/12/94 121 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: The client of data processing center usually makes his job planning based on the elapsed time of the tasks. On the other hand there is optimization needs that must fulfilled when this kind of resources are used. The motivation is the proposal of new scheduling criteria that can deal with these conflicts, reducing the job average queue time, sharing the total execution time between the clients and keeping the good performance level of the machine. For the evaluation of these criteria, a scheduling simulator was developed which uses a sub-model that represents the system, with the CPU, disks and tape devices.

Margareth Prevot da SILVA. "O2 ASSIST: uma interface interativa para evolução de esquemas O2". M.Sc. Diss. Presentation: 26/05/94 92 p. Advisor: Rosana de Saldanha da Gama Lanzelotte

Abstract: Unlike relational Database Management Systems (DBMS's), which store only data, object-oriented DBMSs also store code, in the form of methods. Also, the classes of an object-oriented schema may be related, through composition or inheritance. Hence, support for schema evolution is much more complex than that of conventional DBMS's. Although dynamic evolution of schemas is a desirable feature, object-oriented DBMS's provide partial support to it. This work proposes a formalization of a mechanism for schema evolution applied to O2 object-oriented DBMS. This formalization acts as the basis of an interactive support tool to be used for dynamic schema evolution, called O2 Assist. Besides allowing the use of primitives for modification of schemas, keeping users from having to do this job through the use of the textual language provided by O2, O2Assist also provides interactive support for database updating.

Mario Costa SOUSA. "Visualização científica 3D - simulação numérica de reservatório de petróleo". M.Sc. Diss. Presentation: 25/05/94 77 p. Advisor: Marcelo Gattass

Abstract: This work describes and evaluates scientific visualization techniques applied to datasets resulting from petroleum reservoir numerical simulations. Volume visualization algorithms are implemented and a set of tools are developed and integrated in a 3D visualization system. The system offers an intuitive and ergonomic interface with an advanced functional environment to flexibilize and enhance the analysis of reservoir mechanisms. Applications to real reservoir models show the visualization results.

Mariza Andrade da Silva BIGONHA. "Otimização de código em arquiteturas superescalares". Ph.D. Thesis Presentation: 29/04/94 530 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: Modern computer architectures led to research looking for better techniques for effective implementation of compilers which must be able to produce high-quality code. In the special case of superscalar architectures we have reduced instructions sets, and instructions must be combined to warrant efficient execution by the compilers, which have more complex back-ends than their CISC counterparts. Objectives of this thesis are: (1) the study of the problems of the code generation for more complex architectures, such as the superscalar ones; (2) the study of the characteristics of existing code generator, specially those intended for these architectures; (3) the study of the characteristics of formal languages for the description of architectures, meant for use with code generators. Among these problems are the interdependence of register allocation and instruction scheduling, and the design of more complex data structures, allowing the use of well-established algorithms reported in the literature. We also present the project of a generator system which produces code generator well-suited for the afore mentioned architectures, and the project and the semantic validation of an architecture description language for use with the generator system.

Paulo Monteiro CERQUEIRA. "Um processo para recuperação de requisitos a partir de especificações estruturadas". M.Sc. Diss. Presentation: 12/04/94 126 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Experimental activities in the engineering field are not very common. Our proposal is based on an evolution of a requirements recovery process, using a set of structured specifications. We try to show that a model of user requirements, based on restricted natural language and an auxiliary modeling tool (Language Extended Lexicon), is equivalent to a traditional structured specification, with the advantage of being more user friendly than former. In our experiment, the recovery process has been applied to a significant number of specifications, so several data could be compiled, such as, syntactical errors, semantical errors and vocabulary used in the specifications. The analysis of these data, allowed us to list several observations, that could be useful in the understanding of the domain construction problem.

Raquel Oliveira PRATES. "Visual LED: uma ferramenta interativa para operação de interfaces gráficas". M.Sc. Diss. Presentation: 15/08/94 58 p. Advisor: Marcelo Gattass

Abstract: We described and analyzed the design and development of LED interface graphical editor: Visual LED. Visual LED presents to the user three views: a textual view, a graphical view and a resulting view. The textual and graphical views are editable representations of the same dialog and they are always consistent with each other. The textual view presents the abstract layout of the dialog, in which the user may direct manipulate the elements of the dialog. The user can edit in any of the two views, and is able to switch from one to another at any moment without requesting an explicit switch. The resulting view presents the look-and-feel of the dialog. To create Visual LED, we studied the interaction with other generic graphical editors and interfaces graphical editors. In the text we discuss these graphical editors and we compare them among themselves and with Visual LED. During the study of the graphical editors, we identified some interaction problems and we present some solutions for them. The major problem identified was the impossibility of editing the hierarchy of a group. For this problem we suggest the solution of the tree, for generic graphical editors and concrete layout interfaces graphical editors, and the hierarchical politics for the abstract layout interfaces graphical editors.

Regina Helena Bastos CABRAL. "Design ++: um modelo de design de software baseado em processo de desenvolvimento por prototipação". Ph.D. Thesis Presentation: 10/06/94 260 p. Advisor: Carlos José Pereira de Lucena

Abstract: The generalized use of interactive graphical user interfaces has trigged considerable progress in software development environments, particularly those aimed at user interface development. These changes have not been accompanied by results that coherently cover aspects of the design process. The lack of a common terminology about the activities involved in those processes decreases both process reutilization and comparison between different alternatives, thus slowing down results contributing to the characterization and development of environments to support them. Besides, design processes are dependent on the application domain of interest. In this work we define, as scope, application domains which are not concurrent, do not need high semantic feedback, and for which the use of interactive graphical user interfaces is appropriate, as for example in administrative, management, scientific and educational applications. Considering this scope, we present and justify a conceptual hierarchy of levels of abstraction which relates one design model, one approach that adheres to this model as well as emphasizes the separation between the phases of design of the interface and of the application kernel, one set of methods, in the object oriented paradigm, that are coherent with the approach, and the characteristic of a supporting environment. The distinct levels of the hierarchy are presented via a graphical formalism, termed ADVchart, which is adequate for the description of abstract data views and can be supported by an interactive environment.

Ricardo Gomes de CASTRO. "SCRIPT: uma linguagem de representação para modelagem de sistemas de informações". M.Sc. Diss. Presentation: 28/02/94 175 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: This work proposes a difference between the terms information system and software system in the context of organizations that use computational systems to support their activities. The importance of modeling information systems is presented by the demonstration that the great reasons of failure in

develop software systems projects are in the social and organizational aspects and that investments in computational systems should give more return when they change the organization processes. We propose the representation language SCRIPT, oriented to Tasks, their Information Products and Roles played by the responsible for their execution, modeling in one systemic vision the software and the environment integration. The language was implemented in the meta-environment Talisman producing a support system for construction of information systems models. The proposal language and the support system were showed in a case study.

Sidney Dias da SILVA. "Sistemas de banco de dados heterogêneos: modelo de execução da gerência de transações". Ph.D. Thesis Presentation: 10/10/94 150 p. Advisor: Rubens Nascimento Melo

Abstract: Heterogeneous database systems resulted from the integration of multiple and pre-existing database systems, interconnected by communication networks. Each system is managed by an autonomous, and possibly different, database management system (DBMS). The software that incorporates the facilities to manage the resulting database is called heterogeneous database management system (HDBMS). The transaction management in this introduces challenges due to the composing DBMSs autonomy and heterogeneity. In this work, we present a transaction model for the HDBMS of HEROS Project - an heterogeneous object system being developed at the Departamento de Informática of PUC-Rio. We also present an architecture proposal for a management system to process the transaction in the defined model and we specify the corresponding transaction management execution model. The transaction model defined is based on an already published proposal. It incorporates some characteristics suitable to the non-traditional requirements of the heterogeneous database systems environment. We specified the execution model using high-level Petri Nets. A prototype system was developed to validate some of the specified functions.

Sonia Souza de Carvalho WERLANG. "Metodologias de desenvolvimento de software: confronto entre suas metas e sua utilização em uma grande empresa". M.Sc. Diss. Presentation: 14/07/94 66 p. Advisor: Roberto Ierusalimschy

Abstract: This thesis intends to compare the theory and the practice of the Software Development Methodology usage in terms of the benefits, motivation factors and barriers verified in case studies. These case studies were conducted in a great Company, and represent the multiple ways to work with it. We hope that the results of this thesis will give some useful information that help us to grow the understanding about Software Development Methodology usage, the main features involved in it and the current actual level of usage.

Thaís Vasconcelos BATISTA. "Controle de versões no modelo hipermídia de contextos aninhados". M.Sc. Diss. Presentation: 18/03/94 109 p. Advisor: Luiz Fernando Gomes Soares

Abstract: The development of Hypermedia Systems requires a conceptual model that offers structures to organize information and operations for their manipulations. In addition, the model must have a mechanism for version management in order to accommodate applications which consistently maintain more than one version of the data. The Nested Context Model is a hypermedia conceptual model designed to include abstractions for document organization and navigation, versions management and conformance with the MHEG proposal. This thesis has three basic objectives. First, it describes the structures proposed by the Nested Context Model and the mechanism for version control. Then, it proposes a notification strategy to maintain consistency. Finally, it discusses the development of a prototype with version control that implements the concepts introduced by the model in a library of classes. Using this library, an interface for authoring and navigation was constructed.

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Andrea Silva HEMERLY. "Fundamentos lógicos para modelos de usuários em ambientes cooperativos". Ph.D. Thesis. Presentation: 23/11/95 125 p. Advisor: Marco Antonio Casanova

Abstract: The first part revises the Logic background needed for the other parts. It starts by briefly recalling the concepts of normal program and SLD-and SLDNF-resolution. Then it presents major definitions of Default Logic and the concept of default proof for normal defaults. Finally, it discusses cooperative environments and, in particular, a cooperative environment, called NICE, on which the development of the third part depends. The second part is based on an interpretation of normal programs into default logic, which uses non-normal defaults. It extends known results about stratified normal programs to programs that satisfy a weaker condition. Then, it presents a proof theory for generic defaults which is sound and complete. In particular, when used in conjunction with stratified normal programs and the given logic default interpretation, the proof theory simulates the behavior of the negation as finite failure rule of SLDNF- resolution. In addition to being interesting by themselves, the results introduced are fundamental for the development of the third part of the thesis. When interacting with a database, a user is typically tempted to infer further information from that explicitly obtained by precious queries. However, these inferences are frequently not valid, because his model of the world the user has often incomplete or even faulty. The third part describes two approaches for devising a cooperative interface, one based on SLDNF-resolution and another based on default logic. Adopting a user model, the interfaces alter the processing of users' requests to include additional information that will block faulty inferences. In both cases, it proved that the cooperative interfaces generate sufficient information to block all misconstruals The techniques and results presented in this part are easily adaptable to the NICE cooperative environment.

André Filipe Lessa CARREGAL. "Tche: um ambiente visual Lua". M.Sc. Diss. Presentation: 24/3/95 60 p. Advisor: Roberto Ierusalimschy

Abstract: The goal of this work is to describe the Tche (Tiny Canvas-Hosted Environment) system, a visual environment that supports the direct manipulation of Lua visual objects. Tche was designed to be simple, portable and flexible, being also highly user customizable. Tche uses a workspace where the visual objects can be manipulated, modified and browsed. The system allow the use of text Lua commands, offering a real-time interactivity not available in conventional systems. To create the Tche system we analyzed other visual environments such as Visual Basic, ACE, Smalltalk, Oberon, SELF and Tcl/Tk. We discuss the solutions and characteristics of each system in the direct manipulation of visual objects, ease of use and portability. Tche tries to use the most interesting solutions offered, including the object manipulation maintaining its hierarchical position and the use of double buffering techniques in this manipulation.

Arthur Ronald de Vallauris BUCHSBAUM. "Lógicas da inconsistência e da incompletude: semântica e axiomática". Ph.D. Thesis. Presentation: 16/10/95 167 p. Advisor: Tarcísio Haroldo Cavalcanti Pequeno

Abstract: A family of logic suitable for inconsistency and incompleteness are defined. This family is formed by paraconsistent logic (LI*1 e LI*2) paracomplete logic (PCL*) and non alethic logic (NALL*1 a NALL*2), besides the Logic for Epistemic Inconsistency (LEI) and the Logic for Skeptical Reasoning (LSR), elaborated for the formalization of reasoning in the presence of plausible knowledge, reflecting respectively credulous and skeptical attitudes, with respect to the knowledge. For each one of these logic is given a semantics and an axiomatic. Two alternatives of default rule-generated extensions are defined, forming non monotonic logic based respectively on LEI and LSR, suitable to some inductive reasoning forms.

Beatriz CASTIER. "Visualização 3D de unidades geológicas representadas por subdivisões espaciais". M.Sc. Diss. Presentation: 27/04/95 82 p. Advisors: Luiz Fernando Martha (CIV/PUC) and Marcelo Gattass

Abstract: In the search and development of oil and gas reservoirs, one of the tasks of subsurface petroleum geology is the mapping of unseen structures that may exist underneath the earth's surface. Earth scientists use 2D tools, contour maps and cross sections, to interpret geological data. However, spatial relationships presented in three dimensions are easier to interpret than if they are shown as a series of 2D representations. The aim of this work is to evaluate the use of spatial subdivision methodology in the representation and visualization of 3D geological models (called block diagrams). This methodology models heterogeneous objects (with different parts made of different materials), by decomposing the space into homogeneous parts, and then describing the way they are connected. To evaluate visualization and manipulation strategies of block diagrams, a prototype interactive-graphics system was developed. Block diagram visualization exploits, as much as possible, the underlying topological data structure characteristics and the rendering functions available in powerful workstations. The work describes a taxonomy for interactive manipulation of 3D objects using 2D input devices. The proposed classification is based on the type of movement control (Screen-based, Walk-through or Object-based), on the type of geometric transformation (translation or rotation), and on the control of viewing parameters (clipping plane positions with respect to the eye point and distance from eye to reference point). Basic Screen-based and Walk-through models are presented. It is proposed a model for Object-based manipulation, which is ideal for objects which present a natural bounding box, such as a block diagram. The suggested strategy for cutting the 3D model includes the design of an intuitive cutting-plane positioning and also exploits the spatial subdivision methodology.

Carlos Alberto M. PIETROBON. "Gerência de configuração em ambiente de trabalho cooperativo". Ph.D. Thesis. Presentation: 20/03/95 360 p. Advisor: Arndt von Staa

Abstract: To develop large software systems, software engineering environments are needed. Such environments must support cooperative work. Managing development data is one of the basic requirements of such environments. In this thesis we use Configuration Management to support collaboration between the several people involved in the development. Configuration management controls fine grained objects stored in the repository. These objects are in constant evolution and are shared. They are distributed logically and physically over a network of workstations. Design objects contain small pieces of information and both objects and attributes are versioned. These objects are explicitly linked. We discuss software development environment databases, which are private databases, shared databases and the delta database. The delta database contains all changes made by a specific developer on a shared database. To support multi-user work, we consider the partitioning and distribution of databases over shared platforms interconnected by means of a local network. Owing to these concepts, we show how several developers work in a cooperative way, sharing information, merging information, solving conflicts and propagating alterations. We also show how the developers can work disconnected from the other workstations (databases).

Cláudia de Andrade TOCANTINS. "Armazenamento e manipulação de mapas vetoriais em arquiteturas paralelas". M.Sc. Diss. Presentation: 30/08/95 114 p. Advisor: Marco Antonio Casanova

Abstract: Motivated by the need to improve the performance of the execution of spatial operations is a geographical database, this dissertation proposes a method to store and manipulate vector maps in a parallel environment. First, a model for geographic objects and some concepts about vector maps are summarized. A general architecture for geographic objects management is then presented and some variations for a distributed environments are discussed. Then, the storage structure and its variations are explained in detail. Procedures to edit the structure and some heuristics to define an uniform load balancing are described. Finally, some geographic operations are defined and their parallel execution is discussed.

Cláudio Alcino dos Santos AQUINO. "Visualização de movimentos e de interior em modelos sólidos de elementos finitos". M.Sc. Diss. Presentation: 07/03/95 75 p. Advisor: Marcelo Gattass

Abstract: The present work discusses some techniques of scalar and vector data visualization in finite element solid model post-processors. Computer animation is used to visualize modes of vibration. An original algorithm for mesh simplification is described to enhance the efficiency of the animation process. The visualization of the results in the interior of finite element models is obtained with the use

of iso-surfaces, transparency equations are applied. Finally, the verification of presented ideas is made based upon examples analyzed on the development post-processor prototype.

Cláudio Luiz AKERMAN. "Coleta de lixo em sistemas distribuídos orientados a objetos". M.Sc. Diss. Presentation: 03/04/95 187 p. Advisor: Michael Anthony Stanton

Abstract: Many distributed systems are being built these years using the object oriented paradigm. Object oriented programming encourages building complex dynamic structures with a large number of connections among the components of these structures which makes it difficult to determine the nonreachable (garbage) objects manually. Storage recycling is an essential task for avoiding a system failure for lack of storage space. Garbage collection algorithms and techniques do this job automatically. The present work presents a survey of garbage collection algorithms and techniques, from the basic uniprocessor system sharing a single storage space to the most sophisticated collectors designed for multiprocessed distributed systems. Distributed garbage collection adds inherent distribution difficulties to traditional garbage collectors problems, bringing a new sort of challenges to the already existing ones. Some mathematical models are presented for helping to quantify processing and storage space costs of the main classes of algorithms.

Ellens BARBOSA. "Modelagem de sistemas de tempo-real - estudo da caso de um sistema de controle para uma área de linhas de engarrafamento de um composto químico". M.Sc. Diss. Presentation: 10/10/95 138 p. Advisor: Bruno Maffeo

Abstract: This work constitutes an application of conceptual tools and modeling technique for the construction of the Essential Model and the Implementation Model (Design) for a real-time system which monitors and controls a chemical product bottling lines area. It employs extensions, proposed for the treatment of real-time systems, of tools and techniques used for the modeling of conventional socio-technical systems. Using an activity-oriented approach, it addresses aspects related to the representation of system dynamics with assuring an easily understandable conceptual model and the choice of viable implementation alternative.

Haydée Werneck POUBEL. "Estruturando e concretizando especificações para implementações". Ph.D. Thesis. Presentation: 11/09/95 83 p. Advisor: Paulo Augusto Silva Veloso

Abstract: In this work we propose a formalization of some ideas obtained from the construction of a program, in the context of axiomatic specifications and the Canonical Step Paradigm . In this method, a specification A is implemented in a specification C by constructing D, a conservative extension of C, on which A is interpreted. Our main purpose is to make the Canonic Step process more concrete, or as we defined, effective. To do that, we obtain an implementation of A in C, where the last one expresses the behavior of a machine, by means of its set of axioms, and D expresses the behavior of a program using C. We show that the properties described for an effective canonic step of implementation are preserved by composition, which is based on the Modularization Theorem. We also provide a useful guideline to construct effective implementations.

Jiang ZHU. "Sobre a formulação velocidade-vorticidade do sistema de Stokes e sua aproximação via elementos finitos". Ph.D. Thesis. Presentation: 12/12/95 78 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: In this work, we consider the two- and three-dimensional velocity-vorticity formulations of the Stokes equations with a rather handy set of boundary conditions. The equivalence between the standard velocity-pressure formulation and such velocity-vorticity formulation both in two and in three dimension spaces are proved. A corresponding rigorous variational framework also both in two and three dimension spaces are given. In two-dimensional case, two kinds of uncoupled solution and a class of efficient finite element schemes based on the first uncoupling technique by using discrete harmonic functions to approximate a harmonic component of the vorticity are proposed, with an optimal convergence analysis. Finally, some extensions to more general cases such as nonhomogeneous. Dirichlet boundary conditions and multiply connected domains are presented.

José de Jesus PEREZ ALCAZAR. “Respostas cooperativas baseadas na geração e reconhecimento de planos”. Ph.D. Thesis. Presentation: 21/12/95 224 p. Advisor: Antonio Luz Furtado

Abstract: When the user accesses a database, she/he frequently does not have a precise idea of the information contained in the database that could help her/him to solve a problem, in other words, to achieve a goal. Then, a flexible systems is necessary to provide the user additional information that allows her/him to find the actions to achieve her/his goal. Such actions, or precisely, operations, integrate the user's original plan. In order to provide this level of assistance, we suggest, in this thesis, that it is very advantageous to include in the Data Base Management Systems interfaces with tools to recognize and generate plans. This thesis describes a cooperative interface to Deductive Databases, based in the plan generation and recognition. We use two techniques that are the state of the art in the plan reasoning area: Abtweak and the Kautz' plan recognition system. The advantage of these techniques is their formal basis, which the great majority of the plan reasoning techniques lacks. Plan recognition allows the system to follow the user's focus of attention in the ongoing session, and plan generation complements it when the user's plan is not found in the typical plans library or the plan cannot be applied in the current state. Therefore, two modules are added to the system: a pre-processing module, which corrects the requests and finds implicit operations related to the request, and a clarification module, which generates a cooperative response when the user's plan is ambiguous.

Julio Guido Oliveira MILITÃO. “Uma metodologia para posicionamento de prédios em terrenos acidentados”. M.Sc. Diss. Presentation: 06/11/95 88 p. Advisors: Paulo Cesar Pinto Carvalho (IMPA) and Marcelo Gattass

Abstract: As a consequence of the widespread urban growth there is a considerable demand for tools that provide support for planning and monitoring urban conglomerates and their infrastructure. The use of Computer Graphics techniques has made it possible to develop tools capable of operating in low costs platforms with high degree of interactivity and precision. This dissertation presents a methodology for positioning buildings on terrain surfaces. As a result of this methodology, a computer system (SYSTER) was developed. SYSTER uses appropriate models for the terrain and the objects to be positioned and provides graphical tools for positioning these objects. The current version supports positioning buildings and roads. Distinct representations are adopted for each type of object. Buildings are solids which are represented, for simplicity, by prisms; roads are seen as thick polygonal lines; terrain surfaces are represented by poliedrical surfaces stored in a topological data structure. An algorithm for combining the different models is provided. Numerical data resulting from this combination - such as the area occupied by the buildings and the buried volume of each building - is produced. As auxiliary tools, we have provided an object editor and a 3-dimensional viewer. The editor allows defining and editing, within the system, the objects to be positioned. The viewer is necessary for better scene exploration.

Laura Sanchez GARCIA. “LINX: um ambiente integrado de interface para sistemas de informação baseados em conhecimento”. Ph.D. Thesis. Presentation: 04/05/95 191 p. Advisor: Clarisse Sieckenius de Souza

Abstract: Knowledge-based systems have, as one of its principal features, the kind of dialogue that takes place between user and system; it's all a conversation, an explanatory discourse, about abstractions and rationalizations of facts and objects of reality, and where the same dialogue is the crucial point of the application. Aiming at the attendance of these features, especially relating to the provision of adequate explanations, natural language emerges as the intuitively desirable communication code. The present work introduces an hybrid environment in which a pseudo-natural language that has discourse as its leading aspect goes together with direct manipulation resources in the search for an easy and efficient interaction. Integrating different linguistic and computational theories, a close subenvironment allows the exploitation, in a natural way, of the whole potentiality of the knowledge-based system, while the multimodal communication code provides some more insights to human-computer interfaces area. The contribution of this work is complemented by a demonstrative prototype of the environment.

Lorenzo Francisco G.G. Maria RIDOLFI. “Proposta de uma arquitetura transacional distribuída”. M.Sc. Diss. Presentation: 28/09/95 145 p. Advisor: Marco Antonio Casanova

Abstract: This work presents an enhanced architecture for distributed transaction processing with additional mechanisms to assure reliability in information storage. It is based on the shared-nothing model, and divides server functions into two kinds of nodes, called transaction servers and storage servers, aiming flexibility in data allocation and tolerance. It also uses a central data communication structure which avoids occurrence of faults with complex fixing procedures. The reliability of this architecture is kept by a recovery and replication mechanism, using the primary-copy replication model, that supports transactions based on their reliability requirements. It offers higher confidence to critical data, while saving resources in ordinary transactions. Additionally, in replication and recovery mechanisms introduces a concept of pseudo-transactions, a transaction with low reliability requirements used to increase the utility of the backup copies, usually poorly used in the primary-copy model. By doing this, it offers a low cost alternative for applications that tolerate a slight data inconsistency.

Luiz Carlos Castro GUEDES. "Um modelo orientado a objetos para geração automática de compiladores". Ph.D. Thesis. Presentation: 22/08/95 303 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: This thesis proposes an object oriented model for semantics directed compiler generation based on the denotational description of the source language. The correctness of the code produced by the generated compilers is proven and the process is compared with Actions Semantics based systems. A precise meaning for reparability is given and it is shown that it can be achieved from denotational semantics with the object oriented model. Some code optimizations are presented and a prototype has been implemented. Performance tests have shown that our system outperforms similar systems and that it just is about one order of magnitude slower than hand-written compilers. This result strongly suggests the adequacy of the object oriented paradigm to the task of semantics directed compiler generation.

Maria Elizabeth BUNCHAFT. "Uma extensão do processo recursivo de Ortiz de construção dos polinômios canônicos no método TAU de Lanczos". M.Sc. Diss. Presentation: 28/03/95 69 p. Advisor: Therezinha Souza da Costa

Abstract: Lanczos-Ortiz's theory of canonical polynomials (c.p.) is extended as regards the following aspects: a) the differential operators which lower the polynomial's degree are included in the theoretical construction; b) the c.p. and the associated indices, respectively, are classified and a formula is proved which gives the set of orders of the primary c.p.; c) the concept of multiplicity of indices is introduced, its general properties are proved and its relations with the structure of multiplicity of the primary c.p. and with the existence of non-primary c.p. are demonstrated; d) in the rather frequent case in with all c.p. are primary, a recurrency formula is proved which generates a basis of primary c.p. and also generates all their multiples arising from distinct indices. Some examples, solved by a software which implements the theoretical results here obtained, called GPC (Generates Canonical Polynomials), illustrate the new theoretical developments.

Marcelo Medeiros CARNEIRO. "Interact - um modelo de interação para editores gráficos". M.Sc. Diss. Presentation: 22/12/95 79 p. Advisor: Marcelo Gattass

Abstract: With the current programming technology, the development and implementation of user interface code modules in graphical editors is complex and prone to errors. This work discusses interaction techniques in these systems based on direct manipulation of the objects in the canvases and proposes a model to manager such interactions. This model reduces the programming effort by providing an appropriate abstraction of the interaction tasks. The model defines four basic canvas interaction tasks: construction, selection, transformation and visualization. A class library that implements these abstractions is also presented. Finally, a graphical editor implemented using this model is presented and used to test and validate the ideas of this work.

Mario André M. GUIMARÃES. "Um ambiente para ensino de algoritmos introdutórios". Ph.D. Thesis. Presentation: 12/06/95 233 p. Advisor: Carlos José Pereira de Lucena

Abstract: Introduction to Algorithms is a discipline that demonstrates a high level of difficulty throughout the learning process. Current tools available today help teach concepts through the use of

animations or through offering students support in constructing their own algorithms. This work describes the conception and development process of an Environment for Animation and Simulation of Algorithms (ASA) whose strong points are the integration of these modules (teaching and construction), their capacity for generating test data, the offer of multiple representations of information and the introduction of code reusability. Besides this, it presents as its most original feature, a module called Analyzer, which allows teachers to follow-up (navigate) student responses, classifying their errors, generating statistics, emitting orientation and offering pertinent hypothesis.

Maurício Riguette MEDIANO. "V-TREES um método de armazenamento para dados vetoriais longos". M.Sc. Diss. Presentation: 19/01/95 80 p. Advisor: Marco Antonio Casanova

Abstract: This dissertation introduces a new data structure, called V-tree, designed to store long sequences of points in 2D space and yet allow efficient access to their fragments. V-trees also optimize access to sequence of points when the query involves changes to a smaller scale. They operate in much the same way as positional B-trees do in the context of long fields and they can be viewed as a variant of R-trees. The design of V-trees was motivated by the problem of storing and retrieving geographical objects that are fairly long, such as river margins or political boundaries, and the fact that geographic queries typically access just fragments of such objects, frequently using a smaller scale.

Neudson Cavalcante ALBUQUERQUE. "Prova automática de teoremas nas Fork Algebras". M.Sc. Diss. Presentation: 10/11/95 87 p. Advisors: Armando Martín Haeberer and Edward Hermann Haeusler

Abstract: The promising expectation of good results on the application of relational algebras on the automatic program development brings the necessity to create critical mass to this algebras, especially on this specific application. Heading this general goal, it is shown here a proof method which makes easier the automatization of the abstract relational algebras theorem proves. Specifically, it is shown a Sequent Calculus to the ∇-Algebras which are an abstract relational algebras extension. Furthermore, it was developed an automatic theorem prover prototype using this method, a first step to a more efficient product.

Paulo Roberto TRALES. "Resolução das equações de Navier-Strokes pelo método das projeções via elementos finitos com aceleração pelas técnicas multigrid". Ph.D. Thesis. Presentation: 06/01/95 123 p. Advisor: Vitoriano Ruas de Barros Santos

Abstract: This work deals with the numerical solution of the two-dimensional Navier-Strokes equations. A finite element for unstructured meshes provide an acceleration of the solution procedure. The resulting numerical scheme gave rise to a robust software whose implementation cost is rather low for this class of problems. Numerical tests for flows at Reynolds numbers up to a few thousands were performed both in the context of academic stationary problems and of classical time-dependent problems, with structured and unstructured meshes. The performance and the accuracy of the scheme in all cases allow us to assert that it is a promising one for use in Engineering or industrial applications which can be modeled by these equations.

Paulo Roberto dos Santos PEREIRA. "Análise de agrupamentos por mapas de Kohonen". M.Sc. Diss. Presentation: 21/09/95 236 p. Advisor: Ruy Luiz Milidiú

Abstract: Several research works have already tested and proved Neural Network applicability to the solution of classification problems. All are based on self-organizing networks developed by Kohonen. We investigate the applicability of Kohonen Maps to Clustering Analysis problems and exemplify with the concrete case of sample data analysis used on surface geochemical work applied to oil exploration. Aspects of project, difficulties and suggestions are discussed.

Pedro Jorge Eugênio HUBSCHER. "Um processo de desenvolvimento de software utilizando TALISMAN e MFC". M.Sc. Diss. Presentation: 11/10/95 55 p. Advisor: Arndt von Staa

Abstract: The adoption of operating systems which use a graphical user interface, has greatly increased the difficulty in developing software. New tools have been developed in the effort to counterbalance this increase, however not being successful. The great deficiency of these tools is that they do not allow the specification of the systems being developed, restricting themselves to the automation of specific tasks. This text presents a software development process that integrates TALISMAN - an environment for specification and source code composition - the MFC (Microsoft Foundation Classes) library and other auxiliary tools. The development process focus on the interface specification, coding and module composition steps. Representation languages that permit the combination of specification with a high degree of abstraction and source code fragments are employed. This allows the automatic generation of source code directly from the specifications. Specification standards are defined for each object class used throughout the process. Automatic validators, special programs written in TALISMAN's internal language, allow the critics of specification contributing to increase in quality of the final software.

Renato Carioca DUARTE. "Derivação semi-automática de modelos entidade - relacionamento a partir de descrição de sistemas de informação". M.Sc. Diss. Presentation: 25/04/95 170 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Not provided.

Renato Gonçalves de ARAÚJO. "Refinamento da cena com quantização de cores e traçado de raios". M.Sc. Diss. Presentation: 14/12/95 45 p. Advisor: Marcelo Gattass

Abstract: In the Image Synthesis discipline, Distributed Ray Tracing algorithms produce high quality realistic images but are not computationally efficient. This low performance makes the production process tedious and not productive. This work presents two optimizations of the Distributed Ray Tracing algorithm that improves the productivity. The first is a preview technique based on the progressive refinement of the scene. The second is a review of two color quantization algorithms presented in the literature. This work also presents the inclusion of special effects, like refraction, colored lights, anti-aliasing and depth of field in the proposed optimized method. Finally, the ideas presented here are implemented in a program, called RT. Several examples are presented to support some conclusions and suggestions for future work.

Ricardo de Assis Mesquita SOARES. "Correio eletrônico mulimídia/hipermídia". M.Sc. Diss. Presentation: 29/05/95 140 p. Advisor: Luiz Fernando Gomes Soares

Abstract: This work presents an experimental multimedia/hypermedia electronic mail system, SMHMS, dealing with issues related to network traffic generation and storage management, which are very important when multimedia messages are the transport objects. The basis for the creation and manipulation of these messages is an multimedia/hypermedia machine that supports objects interchange. The system is built on top of existing mail transport protocol for flexibility, portability and to easy the implementation, and should work on most systems which support the Simple Mail Transfer Protocol (SMTP). To transfer multimedia objects the system makes use of the File Transfer Protocol (FTP), by the same reasons of flexibility, portability and implementation facility, and should work on most systems that support such protocol.

Rodrigo Cardoso UCHÔA. "Suporte ao monitoramento e controle de carga em ambientes distribuídos". M.Sc. Diss. Presentation: 31/08/95 127 p. Advisor: Noemi de La Roque Rodrigues

Abstract: This thesis discusses the use of the network management framework and protocols as a support platform for load monitoring and controlling in a distributed system. An extension to the management information base (MIB) is proposed in order to deal specifically with system load information. Furthermore, we defined and implemented a SNMP (Simple Network Management Protocol) agent and an object oriented library which provides a high level, protocol independent interface for programming management applications. Finally, an overview of load balancing in distributed systems is presented and the utilization of the management framework as a support mechanism is discussed.

Simone Diniz Junqueira BARBOSA. "Modelagem e especificação da navegação em aplicações hipermídia". M.Sc. Diss. Presentation: 22/02/95 110 p. Advisor: Daniel Schwabe

Abstract: An important feature of hypermedia applications is the freedom to navigate through the network nodes. This flexibility may cause user disorientation, the problem known as lost in hyperspace. This dissertation presents the concept of navigational contexts - defined in the framework of the Object-Oriented Hypermedia Design Methodology -, which offers a consistent way to specify the navigation structure of hypermedia applications, using a hybrid model that combines graph-oriented and set-oriented hypertexts. The navigational contexts attempts to reduce the cognitive load created when navigating in hyperdocuments by proposing paths with well-defined navigational strategies and contextual information that help the user traverse the nodes according to her interest, avoiding user disorientation.

Soeli Teresinha FIORINI. "Processos de negócio e hipertextos: uma proposta para elicitação de requisitos". M.Sc. Diss. Presentation: 02/05/95 161 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: This dissertation is an attempt to integrate business engineering and requirements engineering. It uses business processes methodology and hypertext technology to support requirements elicitation. A Conceptual Model was created to represent the organizational context from the point of view of its business processes, in accordance with a total quality strategy. This model, which is a representation of the processes data structure and its elements, is redefined to ensure its implementation as a hypertext. This hypertext is made available to the software engineer - for reference and requirements elicitation - and to the business engineer - for reference and maintenance. In order to help the software engineer with the process and the requirements elicitation, a structured access to the hypertext information was created. This structured access was based upon a requirements representation (Serbac, Concrete Actions-Based Support to Requirements Engineering) and a business process analysis. In order to validate the structured access, some processes of a business unit within a large company - certified according to ISO 9001 standards - were used.

Stella Cavalcanti da Silva PORTO. "Algoritmos seqüenciais e paralelos para escalonamento de tarefas em processadores heterogêneos sob restrições de precedência". Ph.D. Thesis Presentation: 14/11/95 96 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: Parallel applications may be represented through task precedence graphs, which determine a partial execution order between tasks. The scheduling of tasks to processors is an essential factor in the reduction of the makespan of a parallel application. In a heterogeneous processor setting, this is even more important, as processors do not present the same processing capacity. In this work, we present different approaches to the solution of two cases of the task scheduling problem on heterogeneous processors under precedence constraints. In the first case, the communication costs between tasks was explicitly considered. Greedy heuristic algorithms are presented and their behavior is analyzed according to the variation of several parameters which characterize the parallel applications to be scheduled and the heterogeneous architecture of the parallel machine. In the second case, without communication delays, a sequential algorithm based on tabu search is proposed. This algorithm obtains significant better solutions with respect to the ones obtained by other greedy algorithms already published in the literature. This sequential tabu search algorithm was parallelized according to four different synchronous strategies, based essentially on the decomposition of the solution space (neighborhood). Computational results have proved that these parallelization strategies achieve almost linear speedup for most of the studied cases.

Waldemar CELES FILHO. "Modelagem configurável de subdivisões planares hierárquicas". Ph.D. Thesis. Presentation: 04/07/95 75 p. Advisor: Marcelo Gattass

Abstract: Topological data structures have been used to support applications that work with planar subdivisions. Many of theses applications require a hierarchical representation, which is currently not supported by the usual data structures. This work proposes a topological data structure to represent hierarchical planar subdivisions. The proposed data structure answers all the relationships between the topological entities. A set of operators, needed to model such subdivisions, is presented and discussed. To allow the use of such representations over different domains, a strategy for adding a client model to

characterize the semantic associated with the model entities is proposed. The development of customizable applications as a strategy of software reuse is also discussed. Customization tools that allow software development with high level of abstraction provide users an easy access to the technology implemented by the applications. For several classes of technical-scientific applications, attributes characterize the semantics of the underlying mathematical model. So, an embedded system for adding configuration mechanisms to applications, based on attributes, is proposed. A model for the communication between an application and the configuration environment, with clearly defined boundaries, is presented. An auxiliary tool for developing highly abstract, interactive graphical applications is also described. Simple, high level programmable access is provided to both conventional interface objects and active graphical objects that are specific to the application domain. This allows occasional programmers to quickly develop their own sophisticated interactive dialogs. The configuration system and the data structure proposed are integrated to provide a powerful hierarchical planar subdivisions modeling tool.

Wanda dos Santos TEIXEIRA. "Uma linguagem de interação sobre gráficos quantitativos". M.Sc. Diss. Presentation: 22/06/95 79 p. Advisor: Clarisse Siecknius de Souza

Abstract: This work proposes a visual interactive language, based on Cognitive Engineering and on Semiotic Engineering, for the communication with mathematical models in computer applications. The visualizations treated by the language are the pie, bar and line charts. Through the language the user can visualize, interpret and manipulate models data and results interactively, which helps him considerably in the decision process. The language pragmatic component provides hints to the user as to when to use which visualization. A case study is presented, along with a prototype, whose interface is based on the proposed language.

Werther Jacques da Silva VERVLOET. "Objetos inteligentes: a convivência entre diferentes paradigmas". Ph.D. Thesis. Presentation: 17/03/95 89 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work proposes the use of some First Order Logic mechanisms in the domain defined by Object Orientation. To accomplish that, it includes also the specification of some logic programming devices as an extension to an Object Oriented host language (TOOL). Investigates how different paradigms can share a same programming environment and tries to establish some criteria for the choice.

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Alcione de Paiva OLIVEIRA. "Casamento de padrões em ambientes para processamento de conhecimento". Ph.D. Thesis. Presentation: 10/07/96 130 p. Advisor: Roberto Lins de Carvalho

Abstract: The hybrid environments are arising as a promising proposal for modeling complex problems. In a hybrid environment the notation of the languages are kept in their original state, without extra symbols that try to avoid their expressiveness deficiency. Then, each language can be used to overcome the deficiencies of the others. The combination of the several types of representations build up the total representation. The pattern-matching languages have an important role in these environments, working in a cooperative way with the other paradigms. This combination has not been properly explored in the current knowledge processing environments. This thesis presents a pattern-matching language, inspired in the Post System notation, inserted in a hybrid environment for knowledge processing. We show that this combination can be very advantageous in many fields as, for example, the implementation of non-classical logic, software engineering and multilevel inference engines.

Alexandre NIGRI. "Estruturação de conhecimento para lógicas modais". M.Sc. Diss. Presentation: 10/01/96 49 p. Advisor: Roberto Lins de Carvalho

Abstract: This dissertation proposes a new method of theorem proving for the modal logic. In this method, each modality is represented by a knowledge base. A relation between the different knowledge bases is defined. With the use of the defined relation and the defined knowledge bases, a proof is constructed using classical logic methods. Correctness and completeness proofs are given. A brief comparison between this method and classical logic is presented.

André Luiz Soares Clinio dos SANTOS. "VIX - um framework para suporte a objetos visuais interativos". M.Sc. Diss. Presentation: 11/12/96 65 p. Advisor: Roberto Ierusalimschy

Abstract: This work presents the modeling and the implementation of a framework which supports visual interactive objects. Its architecture defines an extensible protocol for constructing new objects and defining new operations. For the construction of this framework, some requirements were established: extensibility, reuse, portability and conceptual simplicity. These requirements were treated in this work. Moreover, the framework has a wide range of applicability for constructing several types of graphical and interactive systems. In order to validate the framework's flexibility, a modular system for object direct manipulation, a hierarchical object composer, a graphical editor, and an interface toolkit were constructed. The results obtained from the development of these systems indicate that the framework has accomplished its requirements.

André Mauricio Cunha CAMPOS. "Active chart: uma ferramenta para apresentação de edição de gráficos quantitativos". M.Sc. Diss. Presentation: 09/02/96 68 p. Advisor: Marcelo Gattass

Abstract: The study of design models to provide independence between user-interface elements and application data has been the subject of research for the last years. This work uses the ADV model (Abstract Data View) to specify and develop a new tool, called Active Chart (AC), for the presentation of quantitative 2D-graphs, which allow the user to interact with the numerical data being presented. The ADV model assures the visual consistency of the data and allows the re-use of elements from the interface library. The visual consistency refers to AC's ability to present multiple visions of the same data and also to provide user interfaces of the type WYSIWYG (What You See Is What You Get). The re-usability of software components, also assured by the ADV, allows the proposed library to be extensible. For this purpose, programmers just need to add new presentation layouts and ways of interaction, depending on the nature of the application.

Anibal José de SOUSA JUNIOR. "Modelagem espacial através de árvores BSP". M.Sc. Diss. Presentation: 23/09/96 79 p. Advisors: Marcelo Andrade Dreux (MEC/PUC) and Bruno Feijó

Abstract: In the last decades, many hierarchical structures for spatial modeling have been developed, like B-Tree, V-Tree, Octree, etc. One very powerful structure that has been largely used, specially for the development of games for microcomputers, are the BSP trees. In this research, its concepts are presented, the advantages and disadvantages of this structures are discussed, many applications are showed, and comparisons to other hierarchical structures are also presented. As an example of an application of this structure, BSP trees are used in a Ray Tracing program, which has been described in details and where many optimizations are suggested.

Antonio Carlos Pereira MAIA. "Um ambiente de design cooperativo de software e documentação ativa". Ph.D. Thesis. Presentation: 09/07/96 199 p. Advisor: Carlos José Pereira de Lucena

Abstract: In this thesis we present a descriptive study of cooperative software design activity. We propose an environment that addresses the communication, coordination, and documentation needs of this activity. By cooperative design we mean a design where all designers share a global and participate in a problem-solving activity based on collective decisions. The main contributions of this work are (1) methods for describing the activity and designer's communicative behavior, (2) a software design process model, and (3) an environment to support cooperative software design (CoopADD) which merges the acquired process model with the Active Design Document (ADD) approach.

Carlos Roberto Serra Pinto CASSINO. "Uma ferramenta para programação literária modular". M.Sc. Diss. Presentation: 12/08/96 67 p. Advisor: Roberto Ierusalimschy

Abstract: This thesis presents a support tool for literate programming. Its development was preceded by a research of the basic facilities usually required for programs of this class. After that, a framework has been developed to offer those facilities. The framework was developed in standard C++, in such a way that would guarantee its probability. Its efficiency is due to an optimized kernel which performs all character-level operations, and as well defined application program interface (API) assures its flexibility. On top of this framework an access layer has been created using a configuration language. This layer allows that, through small programs written in the configuration language, a user can adapt the tool for different literate programming styles, like modular or WWW-enable documentation.

Cassia Blondet BARUQUE. "Extensões de banco de dados relacional para aplicações OLAP". M.Sc. Diss. Presentation: 11/03/96 110 p. Advisor: Rubens Nascimento Melo

Abstract: This work aims at contributing to the development of on-line analytical processing (OLAP) systems as Non-Conventional Database applications. Particularly, it is intended to establish DB relational extensions such as new types, functions and operators based on the facilities of POSTGRES (an extensible relational DBMS). These extensions will allow the DBMS to incorporate the semantics of such applications which now may be developed as a genuine DB application, where the full features of DBMS operational controls are preserved. After an initial presentation of the basic OLAP concepts, which are normally used by EIS and DSS systems, it will be explained how to extend the POSTGRES for OLAP. The proposed types, functions and operators are described and the application in a typical example is also shown.

Cesar Augusto Assis Mascarenhas de OLIVEIRA. "Projeto de aplicações hipermídia com suporte de banco de dados relacionais". M.Sc. Diss. Presentation: 14/11/96 151 p. Advisor: Daniel Schwabe

Abstract: Information systems have undergone considerable evolution in recent years, aiming at being more natural to users. In particular, there has been an increase in the use of hypermedia technology, that, using the modern digital media, allows changing subjects in the same way the human brain does: associatively. In this paper, we show a systematic method for design hypermedia applications, supported by a relational data base. For that, we complement the Object Oriented Hypermedia Design Method (OOHDM), and show a design of an example application.

Christiano de Oliveira BRAGA. "Uma ferramenta para geração de documentação de sistemas de software". M.Sc. Diss. Presentation: 10/03/96 155 p. Advisor: Arndt von Staa

Abstract: Documentu is a tool developed to help the software engineer with the documentation preparation problem. The input is C/C++ source code modules with special markups in the code comments. The tool analyzes the code and generates a hyperdocument system to be used by the development team, helping on the maintenance task and even reusing already built software components.

Débora Christina MUCHALUAT. "Browsers e trilhas para documentos hipermídia baseados em métodos com composições aninhadas". M.Sc. Diss. Presentation: 01/03/96 132 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Navigating in complex hypermedia documents is not an easy task for users, specially when the number of nodes and links is large. In order to improve user orientation during the navigation process, it is necessary to give them global information about the hyperdocument structure and also details about their navigation possibilities at any point in time. These resources are offered by graphic browsers and trails in hypermedia systems. In this work, it is proposed an extension to the fisheye model to built browsers for hypermedia systems that allow nested compositions of nodes. To illustrate the expected results, these tools were implemented for the Nested Context Model in the HyperProp hypermedia system.

Fábio André Machado PORTO. "Tipos de dados contínuos em SGBDs relacional-objeto". M.Sc. Diss. Presentation: 23/08/96 120 p. Advisor: Rubens Nascimento Melo

Abstract: Multimedia applications are characterized by the manipulation of different data types. In particular, the continuous data types, those in which the represented information varies as a function of time, present great challenges to various areas of the Computer Science. Our main concern in this arena are the aspects related to the storage and access of the continuous data types by a DataBase Management System. On these grounds, our objective is to integrate the Continuous Data Types to the Traditional Data Types using the Object-Relational Model and to propose a MMDBMS architecture as a extension of The Postgres95 DBMS supporting Video playout.

Fábio Rodrigues COSTA. "Um editor gráfico para definição e exibição do sincronismo de documentos multimídia/hipermídia". M.Sc. Diss. Presentation: 23/08/96 92 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Synchronization is a important task in the presentation of hypermedia documents, for that reason hypermedia systems need tools for the definition of temporal and spatial synchronization relationships. This thesis presents a graphic Editor and Browser (EBS) for temporal and spatial Synchronization of multimedia/hypermedia objects in documents with nested compositions. EBS, part of the HySEE environment (HyperProp Show Editor and Executor), uses the Nested Context Model (NCM) as the structural and presentation model, in conformance with the MHEG standard proposal. The system provides a graphical interface that permits the definition of the temporal and spatial placement of objects, relative either to a time axis or to other objects. It also permits the visualization of the compositions in time and space.

Gustavo Hector ROSSI. "Um método orientado a objetos para o projeto de aplicações hipermídia". Ph.D. Thesis. Presentation: 30/07/96 205 p. Advisor: Daniel Schwabe

Abstract: This research is aimed at defining an integrated method for building large, complex hypermedia applications. The method, from now on Object-Oriented Hypermedia Design Method (OOHDM) will be built out of a set of design models and a process model, i.e. a set of abstract constructs for describing different aspects of a hypermedia applications and a suggested ordering of the steps involved during the whole process. In this document we present our view of the process of building hypermedia applications, discussing in detail the problems that must be faced during each step. We outline our solutions to those problems, illustrating them with concrete examples. We next analyze some further design problems such as achieving reuse of hypermedia component and design strategies and

discuss several alternatives for supporting our method. Some additional aspects and proofs are presented in the appendix.

Ivan MATHIAS FILHO. "A modelagem interna de uma ferramenta para o desenvolvimento visual de sistemas orientados a objetos". M.Sc. Diss. Presentation: 15/02/96 56 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: A powerful CASE tool supporting a consistent object oriented methodology, is an important feature in the construction of reliable, reusable and lower cost software. This work discusses solutions to two fundamentals aspects in tools of this nature. Firstly, the construction of a data structure having a degree of flexibility adequate to the several construction activities (analysis, design, code generation). Secondly, the construction of a repository for system components allowing maximal reutilization.

Jauvane Cavalcante de OLIVEIRA. "TVS: um sistema de videoconferência". M.Sc. Diss. Presentation: 15/08/96 104 p. Advisor: Luiz Fernando Gomes Soares

Abstract: This dissertation describes the implementation of a videoconferencing system, the TVS (TeleMedia Videoconferencing System), result of the research done at the TeleMedia Laboratory, part of the Computer Networks and Multimedia Systems Team from the Computer Science Department of the Pontifical Catholic University of Rio de Janeiro, PUC-Rio. TVS is a system that allows the basic transmission of media such as video and audio in a synchronized and standardized mode. In addition, TVS handles multimedia/hypermedia documents through the Nested Context Model (NCM), according to the MHEG standard proposal. The TVS system supports voting and message sending facilities among participants, in addition to allowing ample environment configuration. The floor control is done by silence detection, in order to improve the interaction among conferees.

José Renato Lepak MILET. "Autoria de aplicações hipermídia utilizando banco de dados orientado a objetos". M.Sc. Diss. Presentation: 30/04/96 61 p. Advisor: Rosana de Saldanha da Gama Lanzelotte

Abstract: Hypermedia applications constitute the most natural means of access to heterogeneous data. However Database Management Systems (DBMSs) are the most adequate to store them, given the functionality available in terms of safety and access efficiency. In this work, meta-schema is proposed which implements in a Object-Oriented DBMS (OODBMS) the basic concepts of OOHDM(Object Oriented Hypermedia Design Method) authoring method. OOHDM-designed hypermedia applications are implemented extending this meta-schema through specialization. The viability of this proposal is demonstrated by a real application in which OOHDM modeling is mapped and implemented in O2 OODBMS.

João Alberto CALVANO. "Um modelo para o controle de versões e desenvolvimento em equipe em sistemas orientados a objetos". M.Sc. Diss. Presentation: 31/10/96 102 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The development of object oriented systems depends heavily on class and relationship libraries, frequently updated. Besides, object oriented systems are amenable to team oriented development, who share resources and information created by lifecycle of software development. In this report, we present, for the ARTS environment, versions control and team development models.

Leonardo Mendonça de MOURA. "Um sistema de programação visual". M.Sc. Diss. Presentation: 15/03/96 124 p. Advisor: Carlos José Pereira de Lucena

Abstract: One of the greatest promises of object oriented technology has been to promote fast and cheaper software development, due to the possibility of software reuse. It failed to do so. The simple use of this technology does not either imply reusable software or reuse. In order to achieve an effective software reuse, this work proposes a system based on the following concepts: visual programming, componentware, design patterns, embedded languages, code and design generation wizards and reusable elements' archives.

Luis Antonio RIVERA ESCRIBA. "Simulação dinâmica de corpos rígidos com restrições de não interpretação". M.Sc. Diss. Presentation: 28/02/96 153 p. Advisors: Paulo Cezar Pinto de Carvalho (IMPA) and Marcelo Gattass

Abstract: Dynamic simulation based on physical laws has always been of interest to scientists and engineers for several purposes. Recently, these techniques have been used in Computer Graphic to improve the realism of computer animation. In the present work, the dynamic of rigid bodies is implemented using the laws of Newtonian mechanisms to model the movement of bodies and to handle collisions and contacts. The integration between the geometric representation of the body and its dynamic description is important for this purpose. The dynamic simulation system is modeled, in this work, in a three step process. The first step of the simulation is responsible for modeling the body movement. The mathematical formulation is resolved in a simple manner using numerical techniques. The second step of the simulation is oriented towards the detection of contact points between bodies. This work presents collision detection algorithms, based on interpenetrating principles for the dynamic simulation of bodies composed of polyhedra. A strategy based on using separating as witness of the separation of two bodies is employed to make collision detection more efficient. The third step of the simulation involves the solution of the contact problem, based on the computation of the contact forces for each contact point without considering friction. The forces are computed analytically, with the purpose of enforcing the non-interpenetrating constraints between the bodies. The computation of the contact forces is done in such a way as to yield a mathematical formulation that is computationally practical for use in a simulation.

Maira Trés MEDINA. "Segurança em correio eletrônico - distribuição de chaves públicas e caminhos de certificação". M.Sc. Diss. Presentation: 26/11/96 103 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: This work presents a survey of problems and techniques related to security in electronic communication, and more specifically in electronic mail. This survey deals mainly with cryptography, and with the issue of public key distribution, which is perhaps the main problem in the use of asymmetric cryptography. The study of these problems and techniques led to the development of a tool which minimizes the problems of public key distribution. This tool gives support to communication between partners served by different certification authorities. Two different algorithms are proposed for the construction of a certification path linking these authorities.

Marcílio Fernandes MENDONÇA. "Inclusão de padrões de design em uma ferramenta para o desenvolvimento visual de sistemas orientados a objetos". M.Sc. Diss. Presentation: 15/02/96 81 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The search for systematic ways of improving the software construction process is a continuity activity in software engineering. Object oriented methodologies and CASE tools are being increasingly used to structure the software development process. In this work we describe a CASE tool being developed to facilitate the construction of real time object oriented software, which includes the use of design patterns. We explore the reuse of code and design, automatically generating data structures and texts describing such patterns. We hope to stimulate the use of design patterns, increasing overall system quality.

Maria Luiza d'Almeida SANCHEZ. "Um método de design de sistemas de tempo-real fundamentado por experimentação". Ph.D. Thesis. Presentation: 05/01/96 225 p. Advisor: Bruno Maffeo

Abstract: The present work discusses concepts, tools and techniques used as a basis for the development process of process-control real-time systems, particularly focusing on a design method associated to a deductive process from a conceptual model. It also presents a summary of results concerning a controlled experiment related to employing these techniques for the development of COMONLIFE - a system for Controlling and Monitoring Electrons Beam Lithography -, in future use by the Department of Materials Science and Metallurgy (DCMM) of Rio de Janeiro Catholic University (PUC-Rio). This work emphasizes an experimental approach to Software Engineering. It follows a model of research inspired on methods of empirical research used by traditional engineering disciplines and by the sciences

of nature. Particularly aiming at the conceptual and implementation modeling of software systems, we elaborated on tools and techniques proposed for the development of software for process-control real-time systems as extensions of those in use by practitioners for developing conventional information systems. This choice reflects a concern related to reducing the costs associated with the transfer to practice of the proposed method. These tools and techniques were experimented and refined within the context of a controlled empirical process: the development of a realistic system, COMONLIFE, with size and intrinsic complexity seemingly adequate to the scope of the experiment. Specifically, the work focuses: - the phase of Requirements Analysis and Specification restricted to the construction of the Conceptual Model: - the design of COMONLIFE restricted to a method, introduced in this work, based on "Information Hiding and Exchange of Messages between Autonomous Subsystems". Four quality features were considered prerequisites to the definition of the design method: modularity, maintainability, portability and reusability. This method of software design employs the information hiding concept for partitioning complex system in more manageable subsystems.

Maria Teresa Mosella Pereira da SILVA. "Navegação adaptativa em hipermeios". Ph.D. Thesis. Presentation: 28/10/96 277 p. Advisor: Daniel Schwabe

Abstract: Navigation in hypermedia generates sequences composed by navigation units that may be treated as blocks of text, where signals are used in addition to words. These texts are associated with rhetorical structures based on the concepts of RST (Mann; Thompson 86). The construction of guided tours is considered as an important task in hypermedia authoring. This task is then supported by the rhetorical structure of the resulting text. The methodology used for authoring is OOHDM (Schwabe: Rossi 94) enriched with a suitable extension. A set of properties for authoring environments based on this methodology are described so that it facilitates the task of creation of guided tours with adaptive navigation.

Marisa Ortegoza da CUNHA. "Um modelo de indexação automática de seqüências de imagens baseado em uma sintaxe espacial 2D". Ph.D. Thesis. Presentation: 27/05/96 143 p. Advisor: Clarisse Sieckenius de Souza

Abstract: In this work we propose an indexing model for image sequences. The model is based on the syntactic analysis of image elements. We extended the concept of indexation in order to get closer to the content representation one, thus allowing to be done by structured sentences instead of descriptor sets. The model presupposes the existence of a preliminary stage. In this stage information is elicited to support the tasks of object and attribute detection and movement identification. During the main processing stage more detailed information describing pairs of objects in relative movement is gathered. The model specifies a representation language that generates a descriptive sentence about the image sequence. One contribution of this approach is that the language organizes the information structure of the image sequence. A user implementing a system based on the proposed model can easily access any constant item present in a descriptor sentence through the use of a image and image-sequence database. The proposed model also provides for user friendly interface development, offering a variety of facilities for user interaction design, thus making clear the availability of the information as well as the ways to get it.

Neil Armstrong REZENDE. "GLB: Uma ferramenta para manipulação de objetos procedurais". M.Sc. Diss. Presentation: 28/03/96 60 p. Advisor: Marcelo Gattass

Abstract: This dissertation describes and analyzes the development of a tool for the construction of graphic editors. This tool offers the general capabilities found in other systems, as well as new capabilities in construction of primitives, for example, via the description of these primitives in a programming language. As for other advantages of this system, we note: the reduction in time and effort in the construction of graphic systems. The construction of editors within specific areas, such as chemical element preprocessors, via the derivation of classes, adapting the terminology of the graphic system to that of the application, is possible principally thanks to the hierarchical structure of the tool developed around the paradigm of orientation to objects. This tool also offers the users a simple data structure, although the user can also generate his/her own structure, without the need for duplicating the information from the graphics primitives. Via a programming language it is possible to work with graphic objects in a procedural way, such that the final user of the application can define his/her graphic

objects, utilizing basic primitives and creating new ones, via the resources of this language such as ties, conditions, etc. It is also possible for the editors constructed with this tool to obtain greater precision in the construction of primitives that may require a more precise scale, via the access to graphic elements which the programming language affords.

Renan Martins BAPTISTA. "Um estudo sobre processos certificáveis de desenvolvimento de software". M.Sc. Diss. Presentation: 02/08/96 199 p. Advisor: Arndt von Staa

Abstract: This work proposes a software development process which satisfies the requirements of the ISO-9000 standard, as well as the Carnegie Mellon Capability Maturity Model, at level 2. Software development, with acceptable quality level, built under limited resources (cost, term, personnel, etc.) depends on a software process, which is able enough to provide a managerial and/or technical mechanisms to ensure the best reachable quality level, within the imposed constraints. The software quality is important, due to market competition, which imposes high quality programs with low costs, as well as, due to the reliability imposed by the software application domain. Thus, the development process must fit to specific conditions established by the Software Process Qualifiers, which are organisms that establishes requirements to those who work in their domain. The next introduces and comments the imposed conditions by two internationally known Software Process Qualifiers: the ISO-9000 standard, and the Capability Maturity Model - CMM, a work ordered by US Department of Defense to the Carnegie Mellon University Software Engineering Institute. Compiling their requirements, it will be presented a software process proposal, in a qualitative and non-instanced way, which can be certified by them.

Renata Machado AIEX. "Estratégias paralelas assíncronas de busca tabu aplicadas ao problema de particionamento de círculos". M.Sc. Diss. Presentation: 09/08/96 117 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: English abstract not provided.

Renato Ferreira BORGES. "Uma implementação para a linguagem School". M.Sc. Diss. Presentation: 09/08/96 66 p. Advisor: Roberto Ierusalimschy

Abstract: This thesis presents an implementation of a compiler for the School object oriented language. The work is focused on the specific compilation techniques employed on this kind of language like message passing, generic types and garbage collection. At first is introduced a study of many proposals for the implementation of different object oriented languages. Based on such study, the School compiler is described and evaluated. In this work, some aspects of modules in object oriented languages are investigated and a proposal is made of a module system for the programming language School. A formal method is used to describe the module system proposed.

Renato Fontoura de Gusmão CERQUEIRA. "Um estudo sobre interoperabilidade entre linguagens orientadas a objetos". M.Sc. Diss. Presentation: 10/04/96 85 p. Advisor: Roberto Ierusalimschy

Abstract: This dissertation studies some issues related to interoperability of object-oriented languages. First it discusses some problems of object-oriented languages that make impossible or very difficult the interoperability among objects defined in different languages and also among distributed objects. This difficulty harms the goal so desired by object-oriented languages: to development software components for reuse. After a discussion about these obstacles, some proposals to solve the interoperability problem are studied, trying to identify their main features. Finally, for a better appreciation of some discussed issues, a case study about object model integration is done, where is proposed a mapping between the School language object model and the CORBA standard.

Selan Rodrigues dos SANTOS. "Perseguição automática de sistemas de núvens". M.Sc. Diss. Presentation: 06/03/96 89 p. Advisors: Marcelo Andrade Dreux (MEC) and Marcelo Gattass

Abstract: This work presents Scientific Visualization (SV) techniques applied to Meteorology. Some SV aspects are discussed, such as methodology to select visualization techniques, interaction classical models between simulation and user and specific visualization techniques. It also presented the problem of cloud tracking and the manner the SV could be helpful to solve it. A prototype system which performs Automatic Tracking of Cloud Systems has been implemented. The system deals with two data types. The first is a set of digital images from the METEOSAT meteorological satellite. The images cover the Brazilian Northeastern region and define a specific period of time. The other data are information about the topography. The system generates a three-dimensional modeling by combining the satellite images with the topography. It is possible to generate an animated tracking of an interactively selected cloud from a set of input images. Meteorological parameters related to the clouds and its tracking are evaluated during the processing. Some of the key computational aspects are: a) development of a modified visualization model named Pseudo-Steering; b) a new algorithm for cloud segmentation, based on the thresholding classification technique; c) a new algorithm for cloud tracking, based on the methodology proposed by Arnaud et al. [Arnaud 92].

Tomás Guisasola GORHAM. "Um sistema de depuração para linguagem de extensão LUA". M.Sc. Diss. Presentation: 27/03/96 58 p. Advisor: Roberto Ierusalimschy

Abstract: The aim of this dissertation is a debugging system for the extension language Lua. It was designed to be small, efficient and flexible, as the language. To reach these goals, the system was built as a library of functions that can be embedded to the application being debugged. An extern monitoring interface has been defined to encapsulate all functions and mechanisms built for this aim. The interface is composed basically by mechanism to control the execution (based on hooks) and some functions that offer access to the names of the local variables, information of the stack, number of line of execution and other debugging information. The mechanism of hooks is the responsible of transferring the control of the execution between the debugger and the interpreter. Built this way, the library provides the developing of other tools that monitor the execution of the Lua code. To validate this idea, was built a simple profiler that uses the hooks to count the time of execution of the functions of a program. The debugger reached all the three goals determined at the beginning of the works in satisfactory way. The fact of being offered as a library activated by the mechanism of hooks required a small quantity of lines to be added to the interpreter. This characteristic also ensured the efficient of the Lua programs that aren't being debugged, because the library can be removed and the hooks will not be called again. The implementation of the debugging resources as Lua functions and the functions that deal with the hooks made possible all the language resources to be used during the debugging phase, inclusively the construction of new debugging commands based on those primitives.

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Adelailson Peixoto da SILVA. "Morphing de curvas poligonais usando evolução convexa". M.Sc. Diss. Presentation: 9/4/97 65p. Advisor: Marcelo Gattass

Abstract: This work presents a conceptual framework and a technique of polygonal curves metamorphosis. The concept of polygonal curves metamorphosis is based on the concept of deformation and metamorphosis of graphical objects. Based on these concepts, this work studies the main techniques of polygonal curves metamorphosis, allowing to compare and classify them. It's also presented and implemented a technique of polygonal curves metamorphosis based on the curve evolution theory.

Adriane Campos Monteiro de CASTRO. "Agregando valor aos sistemas de informação para executivos". M.Sc. Diss. Presentation: 6/11/97 137p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: This work presents a study of Executive Information Systems (EIS) and Expert Systems (ES) and proposes an architecture for the integration of these two technologies aiming to add value to the EIS. We define a software strategy for the integration of off-the-shelf tools and develop a case study which integrates Microsoft Excel (executive database), Microsoft Excel's VBA (interface), Microsoft Word (display of recommendations) and Intelligent Rules Element (knowledge base). We conclude showing that the proposed architecture enhances the analytical ability of the executive and, therefore, improves the decision making process.

Aline Maria Santos ANDRADE. "O processo de desenvolvimento de software à luz da visão estruturalista das teorias da ciência natural". Ph.D. Thesis. Presentation: 4/28/97 95 p. Advisor: Armando Martín Haeberer

Abstract: This work compares the Software Development Process (SDP) with the process of scientific theory's construction. It introduces the concept of Theory of Computation Engineering (TEC), based on the model of mathematical physics theories introduced by Sneed. The model of Sneed contains a large definition of theory in a structured way that permit to relate the theory with the empirical world and represents the dynamic of theories based on Kuhn's concept of normal progress of science. The model of Theory of computation Engineering takes as an important characteristic of the software development, an adequate structuring that permits generalizations and specialization of a concept. TEC represents the synthetic aspects of the SDP and proposes a prescriptive model in a way that a concept of normal evolution of software can de introduced.

André Luiz DERRAIK. "Um estudo comparativo de representações de multi-resolução para linhas poligonais". M.Sc. Diss. Presentation: 4/25/97 61p. Advisor: Marcelo Gattass

Abstract: This work presents a comparative study of some multiresolution representations for polygonal lines. We study the strip tree, the arc tree and the box tree data structures, comparing their performance for constructing, drawing, intersection and selection; and memory storage costs. The comparison uses actual databases available in the Internet. The goal of this study is to identify techniques and algorithms for interactive exploration of large cartographic data bases.

André Oliveira COSTA. "TkVIX - Um toolkit para construção de interfaces gráficas em Lua". M.Sc. Diss. Presentation: 4/24/97 76p. Advisor: Roberto Ierusalimschy

Abstract: This work presents yet another tool designed to support the creation of graphical user interfaces. These interfaces are described according to the syntax of Lua, an interpreted language that can be easily learned and used. The use of Lua allows the development of the interface apart of that of the application, therefore making it suitable for rapid prototyping. This tool, the TkVIX toolkit, was developed in C++ and Lua over a framework that hides the details of the graphical system underneath and implements the concepts of visual object and visual space; these concepts were used to implement the interface objects (widgets). TkVIX offers support to abstract layout, and allows the utilization of other toolkits' widgets (the so-called native widgets) in the same manner its own widgets are used. The

modular architecture of TkVIX was conceived so that the incorporation of new widgets, be they native or not, does not imply in re-implementation of the toolkit itself. The layers that make up the toolkit were implemented aiming a high degree of portability.

Anselmo Antunes MONTENEGRO. "Investigação de novos critérios para inserção de pontos em métodos de simplificação de modelos de terreno através de refinamento". M.Sc. Diss. Presentation: 8/27/97 74p. Advisor: Marcelo Gattass

Abstract: In this work we study algorithms for obtaining representations for terrain models. Terrain data is difficult to deal with, due to its complexity and dimension. Simplification methods are one of the techniques used to reduce the natural complexity of real terrain data. Among several simplification methods, greedy insertion with vertical local error measure is the one that has provided best results. In spite of its qualities, the method presents some shortcomings, specially when applied to terrain with different height regions. We investigate the existence of better measures to deal with such problem and propose the adoption of greedy insertion methods in which the local vertical error is modified according to the variability of the surface in a neighborhood of the point under consideration.

Carlos Alberto Malcher BASTOS. "Serviço sem conexão para tráfego garantido em inter-redes IP sobre ATM". Ph.D. Thesis. Presentation: 10/24/97 163p. Advisor: Michael Anthony Stanton

Abstract: A description is presented of several proposals, which have been the subject of discussion, within the IETF, for integrating IP internetworks over ATM subnetworks. These include Classical IP over ATM, the Next Hop Resolution Protocol (NHRP) and IP switching is not limited to ATM, and includes a number for proposals that are discussed and compared. Basic aspects of quality of service in internetworks are discussed, and a description is presented of the model for integrated services, which is being adopted for use in the Internet. Amongst other things, this model specifies a resource reservation protocol, called RSVP, and two packet delivery services with quality control: guaranteed service, which offers packet delivery with deterministic delay; and controlled load, which guarantees to user only that its packets will suffer delays similar to those encountered in an uncongested internetwork. A calculation is made of the network bandwidth that must be reserved for an application in order to guarantee a given maximum delay, when using the guaranteed service. This calculation takes into consideration different alternatives for IP/ATM implementation, and factors such as traffic profile, the number of intermediate nodes between origin and destination, packet transmission with or without fragmentation, and bandwidth reservation made for individual flows, or for groups of flows. The conclusion is reached that packet fragmentation, group reservation and the reduction in the number of intermediate nodes all reduce reserved bandwidth necessary to guarantee a given delay. Arguments are presented in defense of the use of switched virtual channels in large-scale internetworks, implemented using similarly large-scale ATM subnetworks. In such a context, the need for group reservations and fragmentation require packet multiplexing with interleaved cells on a single virtual channel, and proposals are presented for the use of a segmentation and reassembly layer and a method for such cell interleaving. Virtual circuit management is also discussed, and a proposal is presented for a multilink procedure, in order to facilitate the inclusion of new flows into a group. Finally, the proposal is presented for a new device called a SIA - Server for IP/ATM Integration, which operates with switched virtual channels, which may act like an IP switch, and which permits packet multiplexing with cell interleaving on a virtual channel, and flow bandwidth reservation for groups, offering a Connectionless Service for Guaranteed Traffic.

Cecília Kremer Vieira da CUNHA. "Planejador de respostas explicativas baseado em uma biblioteca de esquemas RST". M.Sc. Diss. Presentation: 5/05/97 90p. Advisor: Clarisse Sieckenius de Souza

Abstract: This work presents an Explanation Planner which objective is to disclose to an end-user the knowledge applied in a Knowledge Based System. This disclosure is possible specially due to the generation of natural language explanations, which provide rhetorical structure and organization to the information presented. Other forms of expression can also be planned, among which the use of graphic resources is currently available. One of the main contributions of this work is the application of knowledge in Semiotics and Computational Semiotics to the construction of a solution, bringing a new perspective to approach the usability challenge. The Planner here proposed has been developed for a real knowledge based system in a project of ADDLabs.

Eduardo Sany LABER. "Um algoritmo eficiente para construção de códigos de prefixos com restrição de comprimento". M.Sc. Diss. Presentation: 3/17/97 78p. Advisor: Ruy Luiz Milidiú

Abstract: In this work we present an algorithm to construct a length restricted Huffman code. The complexity of the algorithm is O (n log n + n log fn) where n is the number of symbols of the given alphabet and fn is the maximum frequency among all the symbols of the alphabet. The algorithm is divided into two parts: In the first part we build an approximated solution for the problem using a Lagrangean approach. In the second part we use a special representation of binary trees called Nodesets. This structure allows us to build an optimal solution through some changes in the solution achieved in the first part.

Eliana Secim de OLIVEIRA. "Heros: A interoperabilidade de seus componentes usando CORBA". M.Sc. Diss. Presentation: 6/09/97 129p. Advisor: Rubens Nascimento Melo

Abstract: The current computational environments are characterized by autonomous and heterogeneous systems. The system integration and the heterogeneity resolution are treated by heterogeneous database systems. In this context, standardization is specified, based on client-server model and object technology, as strategy to better support interconnectivity and interoperability between components spread in the network. The standardization application in heterogeneous database systems architecture increases their portability and extensibility. This work purposes the use of a interoperability standardization (CORBA) in HEROS - HEteRogeneous Object System in developing in PUC-Rio, showing and comparing the most important standardization, and considering similar projects - MIND and Jupiter.

Felipe Gouveia de FREITAS. "Aplicando ténicas de reuso de software na construção de ferramentas de engenharia reversa". M.Sc. Diss. Presentation: 07/10/97 199 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Reverse Engineering is an emerging area within software engineering. Reverse Engineering aims to recover the knowledge of software systems and represent it at a high level of abstraction. How to perform this recovery process and how to present the recovered information is the subject of ongoing research. The reverse engineering of software systems is a problem so complex that, in most cases, it demands human interference. On the other hand, it is very useful to have software tools that help the human to deal with the voluminous information and the tedious work related to the task of reverse engineering. Another important are within the software engineering field is software reuse. The Draco paradigm of software development is a paramount philosophy for software reuse, since it preaches reuse of requirement's information, thus high level abstractions, that encompass the reuse of design and code. This work presents an application of the Draco paradigm in the construction of reverse engineering tools. Two architectures are presented in different levels, in the reverse engineering tool level a typical architecture is presented; and in the level of building the tools an architecture based on the Draco paradigm is presented. The work was partially validated by a case study, where software engineering design models were recovered from a complex software system, a HTML browser, which was unknown to the author.

Flávio SZENBERG. "Um algoritmo para visualização de um terreno com objetos". MSc.Diss. Presentation: 8/27/97 57p. Advisor: Marcelo Gattass

Abstract: This work describes a method for the visualization of terrains and objects by means of combining two algorithms, one for terrains and one for objects. Our purpose is to generate, effectively and quickly, aerial images of a terrain with objects such as houses, vehicles and transmission lines and thus to allow a simulated flight. For the objects, described by lines and polygons, the Z-Buffer algorithm is used; for the terrain, described through height maps, the algorithm of improved ray-casting, called of algorithm of Flotation Horizon, is used.

Guido Lemos de SOUZA FILHO. "Sincronismo na modelagem e execução de apresentações de documentos multimídia". Ph.D. Thesis Presentation: 9/29/97 221p. Advisor: Luiz Fernando Gomes Soares

Abstract: Logical, temporal and semantic complexity of multimedia and hypermedia documents claims for a conceptual model permitting its specification and manipulation. Expression of ideas through documents presupposes a logical ordering of information fragments represented through different media. This ordering defines the time and space occupied by the presentation of each component. This work proposes a multimedia document conceptual model called Nested Context Model (NCM). When this work started, NCM had been object of other studies focused on structured aspects of documents. So, the main contribution of this thesis was to propose entities allowing to capture specifications of temporal and spatial synchronism in order to define documents structured as nested compositions. The specification of the presentation's temporal synchronism is based in two entities: events and links. The occurrence of a collection of events aligned in time by links defines the semantic of document's presentations. Spatial synchronism specification is captured by an entity called descriptor, which keeps the specification of the presentation characteristics separated from the data to be presented. This facility allows the definition of alternative presentations for documents as well as for its components. In order to validate the proposed model, tools allowing the edition and execution of NCM documents presentations were developed.

Heitor Augustus Xavier COSTA. "Modelagem conceitual de sistemas - protótipo de ambiente baseado em aplicativos comerciais". M.Sc. Diss. Presentation: 3/25/97 112p. Advisor: Bruno Maffeo

Abstract: One serious problem in software engineering is the fact that a large amount of human resources is used in systems maintenance instead of systems development. The documentation of a system is a primary tool for an efficient system maintenance, and this reason it must always be up to date. In the present work, we have designed and implemented a prototype for a Conceptual Modeling Environment based on commercial applications (Microsoft Access 2.0 and Word 6.0) which provides the necessary tools to facilitate the elaboration and updating of system's documentation. This prototype employs the modeling instruments which constitute an Essential Model and its main goals were: easy of acquisition and fast learning, execution based on a platform of widespread use, a low cost environment and an efficient maintenance.

Iremar Nunes de LIMA. "O ambiente Web banco de dados: funcionalidades e arquiteturas de integração". M.Sc. Diss. Presentation: 8/29/97 153p. Advisor: Sergio Lifschitz

Abstract: This work presents the basic concepts related to the integration environment of the WWW (World Wide Web) with Database Management Systems (DBMS), particularly the development of Intranet/Internet applications. The advantages of this integration are described, as well as some of the main problems that will be studied in this new environment, focusing on some DBMS issues. The functional requirements that have to be satisfied by the gateways that integrates these technologies are also discussed, aiming at offering two important characteristics: the stateful nature of the systems based on databases and the extension of the ACID properties to the integration. A taxonomy for the current architectures of these Web Database gateways is proposed, concerning mainly database systems functionalities, such as transactions management, integrity constraints control, security and access, performance, development and portability. Finally, a case study is discussed, based on the most employed Web Databases integration architecture to develop Internet/Intranet applications, called CGI Executable Programs.

Juliana Gama CHAVES. "Estudo da viabilidade do barramento de geometria em ambiente de CAD integrado". M.Sc. Diss. Presentation: 10/3/97 97p. Advisor: Bruno Feijó

Abstract: This dissertation is a feavibility study of ACIS as a Geometry Bus for integrated CAD systems. In order to establish a solid foundation, the concepts of integrated CAD systems and a proposal for an integrative architectures are also presented. The effectiveness of the proposed architecture is evaluated by two applications. The cornerstone of the present work is the exploration of the idea of Virtual Prototyping. The Virtual Prototype represents the structure of the real artifact and is made of data stored in a standard format compatible with the Geometry Bus.

Lúcia Teresa Schalcher FONSECA. "Uma arquitetura para construção de ferramentas da manipulação para visualização interativa de dados volumétricos". M.Sc. Diss. Presentation: 9/23/97 77p. Advisors: Luiz Fernando Martha (CIV/PUC) and Marcelo Gattass

Abstract: The use of three-dimensional visualization in the exploration and production area (E&P) of the petroleum industry represented a great improvement in the work of geoscientists. With this technology, precise 3D images of the subsurface formations can be created and the interpretation of exploration and production data can be done faster and more accurately. In Petrobras, geologists, geophysicists and reservoir engineers still use two-dimensional data representations in their work, like seismic sections, contour maps, cross sections and grids of properties. But the interest in working with data in a three-dimensional way is increasing and have motivated the development of an object-oriented toolkit to facilitate the construction of interactive 3D applications for exploration and production data visualization and interpretation. The integration of direct manipulation interfaces to the data representations implemented in the toolkit, to provide a more interactive data exploration, is the aim of this work. It proposes the use of widgets 3D, a combination of geometry and behavior to control application objects. An architecture for the construction of widgets 3D, in this work called manipulators, and a set of manipulators for interaction with volumetric seismic data visualization are implemented. The object-oriented methodology was used in the development of this architecture too. New manipulators can be incorporated as new data and visualization techniques extend the toolkit.

Luiz Marcio CYSNEIROS. "Integrando requisitos não funcionais ao processo de desenvolvimento de software". M.Sc. Diss. Presentation: 4/7/97 125p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Complex information systems need conceptual models that can deal with aspects beyond the usual entity/activity framework. Recent research has pointed out that conceptual models do need to explicitly deal with goals, in order to model complex situations that happen in the real world. Our work investigated the integration of non-functional aspects to the widely used ER conceptual model. We have designed and validated a prototype method to derive such models, as well as a prototype tool to implement the conceptual model. The tool is based on the Talisman software development environment. The method was used in a real case study and the results confirm possible impacts of non-functional aspects in the process of software construction.

Marcelo Gaspar Wanderley da NÓBREGA. "Gerência de correio eletrônico". M.Sc. Diss. Presentation: 4/14/97 115 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: This work proposes a model for the management of electronic mail servers based on SMTP over TCP/IP networks. Electronic mail is one of the most used network applications and it has been deployed as base for other applications. A MIB (Management Information Base) with the Information structure for the proposed model was created. This model is an agreement with SNMP reference model for network management. The proposed model was validated by an implementation of a mail manager tool, specific for the management of "sendmail", which is the most widely adopted UNIX MTA (Message Transfer Agent) on the Internet. The tool was developed in TCL (Tool Command Language) with the libraries TK for graphic interfaces and Scotty for SNMP network management functions.

Marcelo da Silva CORRÊA. "Categorias e seqüencialidades". Ph.D. Thesis. Presentation: 10/29/97 199p. Advisor: Edward Hermann Haeusler

Abstract: In this work, we present a categorical model for sequentially, which focus on two central aspects of the sequencing operation: non-commutativity and partiality. The model is obtained by using basic categorical concepts. In fact, the sequencing operation is modeled by means of a variation of the (Cartesian) categorical product, which is given by a limit of a diagram consisting of a pair of arrows. This new product operator is non-commutative by construction. Such a "concrete" aspect joined together with the abstract treatment provided by the categorical approach determine the main novelty of our framework. We present a concrete categorical model for the Lambek Calculus, in which we just focus the non-commutative aspect. The intended model is obtained from that by considering the partial aspect. We also present an abstract characterization for another important feature of sequentially:

communication between process. We present a realization for our main category, by considering the information flow in the sequencing of computational processes. Finally, we point out some questions about the development of a logical system to capture the partial aspect of sequentially, for instance, a refinement of the Lambek Calculus which could be obtained by adopting constraints on the formation process of its language.

Marcus Felipe M. C. FONTOURA. "Um ambiente para modelagem e execução de processos". M.Sc. Diss. Presentation: 3/24/97 81p. Advisor: Carlos José Pereira de Lucena

Abstract: This work proposes an environment for process modeling and analysis. The software and business processes are modeled through a process language based on Petri Nets. This language manipulates all the important objects for process definition such as artifacts, roles and tools. The design aspects to the environment modeling are discussed and case studies of its utilization are presented.

Maria Amélia Braghirolli SERRANO. "Análise de negócio aplicada à modelagem de meta-ambientes automatizados". Ph.D. Thesis Presentation: 3/13/97 322 p. Advisor: Arndt von Staa

Abstract: It is recognized that both applications and software engineering environments evolve over time and must adequately integrate despite of this evolution. Using mission analysis, a model is created, integrating both the application environment and the software engineering environment. In order to facilitate the evolution of both environments, the use of a automated software engineering environment is proposed. This meta-environment is used to instanciate software engineering which are adequately integrated and geared towards developing and evolving applications in a given domain. The model is used to identify and justify properties of these three environments. The model is composed of three orthogonal domains: needs generation (people domain), problem solution (mission domain) and problem solution and implementation (technology domain). These domains are applied to the application mission and to the software engineering mission. The model uses several feedback cycles in order to support application and software engineering environment evolution. These feedback cycles allow learning and improvement of both the application and the software engineering environments, in close accordance to external changes and needs evolution. The model integrates business organization, available tools and roles played by the several participants in the application environment and in the software engineering environment.

Mauro Tavares de AMORIM. "O roteamento no dimensionamento para redes de alta velocidade". M.Sc. Diss. Presentation: 5/9/97 90p. Advisors: Reinaldo Antonio Vallejos Campos (UTFSM, Chile) and Luiz Fernando Gomes Soares

Abstract: The next challenge in the telecommunication world is related with the high speed WANs, in order to support the applications for the next century and as ATM - Asynchronous Transfer Mode - is now becoming more acceptable by the market as the platform to support then, it's now very important to plan these new networks. The routing problem is the key of this work and, in association with traffic modeling, will be discussed in order to show its importance by the time of planning the link capacities of the network. Also in this work, a new routing algorithm is presented and tested with other methods and the results will show that it is an interesting new solution for the routing problem.

Mônica Maria Ferreira da COSTA. "Animação comportamental baseada em agentes". Ph.D. Thesis Presentation: 4/18/97 87p. Advisor: Bruno Feijó

Abstract: This work proposes a new paradigm for Behavioral Animation: Agent-Based Behavioral Animation. The developed agent model is based on results of cognitive science and considers issues related to real-time animation, reactivity, concurrence, and emotional responses. As far as agency is concerned, this work settles on an emergent computing model, where intelligent behavior on a system emerges from the interaction of its components. An architecture for a real-time Behavioral Animation system based on the developed agent model is presented. This architecture is organized in two different Views connected by an interface layer called Animation Bus. Furthermore, the proposed architecture leads to an agent-oriented programming methodology which is realized in this work by a tool designed for the definition of the agents in a character.

Paulo Henrique Mascarenhas SANT'ANNA. "Modelos de extensão de agentes para gerenciamento de redes". M.Sc. Diss. Presentation: 4/25/97 66 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: This thesis discusses the use of extensible agents in network management. Several models are presented and two, in particular, are implemented. The work also introduces a MIB for access to system variables using the extension language Lua. The Agent X protocol model and a Scripting model are implemented. Besides that a brief explanation about the use of meta-variables is presented.

Rita de Cassia Almeida PONTES. "Ambiente para desenvolvimento de aplicações Web". M.Sc. Diss. Presentation: 10/31/97 144p. Advisor: Daniel Schwabe

Abstract: A major characteristic of Web Based Information Systems is the use of the hypertext paradigm. This paradigm affects the way designers must organize information during the design, making it harder for professionals who are used to design conventional information systems with traditional access to information. One of the difficulties lies in the lack of adequate methodologies which address the notion of hypertext and allow a simple and concise record of the design. Coupled with this problem is the lack of tools that support the implementation of such projects. This work intends to facilitate the elaboration of hypermedia project for the Web using the methodology OOHDM (Object Oriented Hypermedia Design Model), by the development of a support environment to the implementation of the systems.

Roberto Hakovsky da CUNHA. "Roteamento multiponto em redes ATM homogêneas". M.Sc. Diss. Presentation: 5/9/97 151 p. Advisors: Reinaldo Antonio Vallejos Campos (UTFSM, Chile) and Luiz Fernando Gomes Soares

Abstract: The most common connections established in a network are those which involve a source and a destination nodes, known as point-to-point connections. Nevertheless, emerging multimedia applications are requiring faster networks, that assure the negotiated Quality of Service (QoS), and new kinds of communication services, in which a plenty of nodes may participate in a connection, known as multicasts connections. This means that Multicast Routing has become a key requirement for networks that will support multimedia applications, like audio/videoconferences and distributed computation. In this paper it is proposed three new multicast algorithms on ATM based networks.

Roberto de Beauclair SEIXAS. "Visualização volumétrica com Ray-Casting num ambiente distribuído". Ph.D. Thesis Presentation: 4/9/97 70 p. Advisor: Marcelo Gattass

Abstract: Ray-Casting is a useful volume visualization technique applied to medical images such as computer tomography (CT) and magnetic resonance image (MRI). It has, however, a high computational cost that results in a slow rendering process, which compromises the interactivity that is necessary for a good comprehension of the three-dimensional data set. This work proposes optimization strategies to the ray-casting algorithm to improve its efficiency. To enhance, even further, the thesis investigates the use of a distributed computer environment through a communication protocol between heterogeneous and non-dedicate LAN-connected workstations. The ideas proposed here were implemented in two versions of the algorithm, one sequential and one parallel. Test results, obtained with these implementations and real data sets, show that it is possible to obtain interactive time with the current available machines.

Rogério Ferreira RODRIGUES. "Formatação temporal e espacial no sistema HyperProp". M.Sc. Diss. Presentation: 5/12/97 108p. Advisor: Luiz Fernando Gomes Soares

Abstract: Multimedia/hypermedia systems development requires an element responsible for receiving a document presentation specification and to execute its exhibition to the user. The main tasks of this element, called temporal and spatial formatter, are the generation and the maintenance of an execution plan, the control of the presentation of the document's components, and the allocation of resources for media presentation. This thesis presents the spatial and temporal formatting mechanisms implemented in the HyperProp system, besides the formatter's interfaces with other parts of the system.

Sergio Estevão Machado Lisboa PINHEIRO. "Deformações interativas por especificação direta". M.Sc. Diss. Presentation: 9/17/97 70 p. Advisors: Jonas de Miranda Gomes (IMPA) and Marcelo Gattass

Abstract: The work describes and implements a surface deformation system, through space transformations. These transformations are directly specified by surface points, chosen by the user. The method used in this work determines global transformations by coordinate system changing, therefore, it independs of the surface description or representation, and can be used for surfaces described implicitly or parametrically, and also for volumetric dates.

Siome Klein GOLDENSTEIN. "Metamorfose de sons". M. Sc. Diss. Presentation: 7/10/97 66 p. Advisors: Jonas de Miranda Gomes (IMPA) and Marcelo Gattass

Abstract: Not provided.

Toacy Cavalcanti de OLIVEIRA. "Um modelo de concorrência para o projeto ARTS". M.Sc. Diss. Presentation: 8/22/97 94 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: The main goal of this work is to propose a solution for the concurrency problem that appears in a object oriented development environment like 2GOOD, so that the syntactic constructions do not decrease legibility. This is based on the fact that for 2GOOD/DDL, the most important phase in the development of a system is Design, where all knowledge for system construction should be extracted, including concurrency.

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Adriana de Cesário de Faria ALVIM. "Estratégias de paralelização da metaheuristica GRASP". M.Sc. Diss. Presentation: 4/13/98 95 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: We study different parallelization strategies for the GRASP (Greedy Randomized Adaptive Search Procedure) metaheuristic, considering an application to optimal traffic assignment in TDMA satellite systems. In the first strategy, parallelization is done through the uniform distribution of the GRASP iterations among the processors, which leads to linear speed-up. The second strategy is based on the parallelization by diversification of the main parameter of the algorithm, where the behavoir of the algorithm is investigated in terms of solution quality. We also compare the performance of two applications using different strategies for load balancing in parallel GRASP implementations. Their difference consists in the data partioning technique: pre-scheduled decomposition (static load balancing) or self-scheduling decomposition (dynamic load balancing). Dynamic load balancing is shown to be the most suitable strategy, with significant improvements in terms of elapsed times.

Alberto LERNER. "Uma proposta de arquitetura para o tratamento paralelo da junção com equilíbrio de carga em ambiente com memória distribuída". M.Sc. Diss. Presentation: 3/30/98 55p. Advisor: Sergio Lifschitz

Abstract: The study of the most significant algorithms for the parallel execution of the join operation, particularly those towards a shared-nothing environment, opens this dissertation. The algorithms were chosen for their capability in handling load imbalances during the parallel execution of the join. Based on this study, a new taxonomy for the algorithms was developed and evidences have been found that the majority of the algorithms handle load imbalances in a corrective fashion. Indeed, they detect uneven data distributions at the time there are already overloaded processors and then try to redistribute workload among them. On the other hand, the VAST-PJ architecture, presented in this work, has the ability to handle their effects on the parallel execution of the join operation. The main techniques that support the architecture are twofolf: (a) the turning, as far as size goes, of the tasks assigned to each processor, so not to overload it, even in the presence of data skew (b) the assignment of such tasks in a demand-driven approach. The work also presents a software project implementing the VAST-PJ architecture into an existing SGBD.

Alexandre Albino ANDREATTA. "Uma arquitetura abstrata de domínio para o desenvolvimento de heurísticas de busca local com uma aplicação ao problema da filogenia". Ph.D. Thesis. Presentation: 6/5/98 151p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: In the study of heuristics for combinatorial problems, it is important to develop and compare, in a sistematic way, different algorithms, strategies, and parameters for the same problem. This comparison is often biased not only by different implementation languages, but also by different architecture. In this thesis we propose a framework, described using design patterns, modeling different aspects involved in local search heuristics, such as algorithms for the construction of initial solutions, methods for neighborhood generation, and movement selection criteria. Using this framework we fix a basic architecture, increasing our ability to construct and compare heuristics. An implementation of the framework is performed for the phylogeny problem, one of the main problems in cladistics and systematics. The optimization criteria used was the parsimony criteria. The phylogeny problem is NP-hard and can be modeled as an Steiner tree problem in graphs. The implemented system has the following local search options: iterative improvement, GRASP, VNS, and tabu search. Several algorithms for the phylogeny problem are compared, extensively reusing the implemented code. The most promising strategies were tested on available benchmark instances. The use of tabu search and VNS metaheuristics for the phylogeny problem are original contributions of this thesis. The computational results suggest GRASP strategy as the best one to obtain phylogenies. The implementation of the framework for the phylogeny problem has shown the flexibility and expansibility of the model. With respect to the code reusability, it has an estimated potential of reuse by representation inheritance of almost 30%.

André Machado de MATOS. "Visualização de panoramas virtuais". M.Sc. Diss. Presentation: 7/9/98 90p. Advisors: Luiz Carlos Pacheco Velho (IMPA) and Marcelo Gattass

Abstract: Recently, a large number of systems were developed that allows the visualization of panorama-based virtual environments, like the Quicktime VR system for instance. However, these systems have several limitations in terms of the quality of the image generated and interactivity. In this work, we present a few visualization techniques that solve these limitations. These techniques are currently being used as part of the Visorama System, which uses hardware and software components to provide a natural and immersive interaction with panoramas. The system we developed allows the visualization of very large panoramas at interactive frame rates. Among the topics covered are real time visualization, image deformation, cache management and multiresolution images.

Andréa Miranda PIZZOL. "Um framework para implementação na WWW de aplicações hipermídia modeladas com OOHDM". M.Sc. Diss. Presentation: 12/10/98 [irr.] p. Advisor: Daniel Schwabe

Abstract: The development of hypermedia applications in the WWW lacks higher-level tools that help the designer in the design task. This dissertation describes an object-oriented framework for the implementation in the WWW of complex hypermedia applications, designed using OOHDM. In addition, it examines the various implementation approaches for web application development using Java, and specify and architecture for the implementation of applications developed using the proposed framework.

Carla Cristina Fonseca FERREIRA. "Um estudo sobre arquivos vetoriais para visualização de mapas na Web". M.Sc. Diss. Presentation: 5/11/98 85p. Advisor: Marcelo Gattass

Abstract: This paper presents a study on the transmission of maps in the World Wide Web. Maps are approximate representations of the Earth surface in which points of the globe are projected on a plane. An important feature of figures that represent maps is that they have polygonal lines with a large number of points. With current vectorformats these points generate archives that are too large to be transmitted through the web. The use of images formats, although common in the web today, only provide poor resolution figures that do not scale well. A review of current metafile formats is presented, followed by a study on compression algorithms. The thesis proposes strategies to reduce the size of the archives by restricting the precision of the points, eliminating repeated points and performing an efficient coding of the coordinates. Real examples are shown to evaluate the proposed strategies and recommendations are made based on these examples.

Carlos Eduardo Portela Serra de CASTRO. "Integração de 'Legacy Systems' a sistemas de banco de dados heterogêneos". M.Sc. Diss. Presentation: 5/11/98 117p. Advisor: Rubens Nascimento Melo

Abstract: The dynamism of the computer environment where equipments, programs and methodologies are always in evolution, makes that systems soon become obsolete. Some systems, due to its importance for the operation of the company, survive per decades, living together with new environment and systems developed under new paradigms. Such systems are known as Legacy Systems. Several alternatives are proposed to solve the following dilemma of the Legacy Systems: "What to do with the systems that are already obsolete but are of vital importance for the business of the organization"? The tecnology of heterogenous Databases Systems that allows that systems of models, makers and different products can be integrated in a way to offer an unique vision of the user. The database vision provides a higher abstraction level where detail of storage, recovery, integrity, concurrence and security, common to the systems with traditional files can be omitted. The use of Heterogenous Database Systems, for its capacity to integrate different architectures, comes as an interesting alternative for the solution of the integration problem of Legacy Systems. This work identifies some of the characteristics and problems of the Legacy Systems, it evaluates alternatives for its integration to the computer environment of the companies and it proposes as one of the solutions, its incorporation to Heterogenous Databases Systems, through the extension of HEROS -Heterogenous Databases Management Systems in development at PUC-Rio.

Carolina de Lima AGUILAR. “Técnicas procedimentais de texturização”. M.Sc. Diss. Presentation: 8/18/98 102 p. Advisors: Marcelo Dreux (MEC/PUC) and Bruno Feijó

Abstract: Several researches in the Computer Graphics area are focused on the obtention of more realistic images synthesized by computers. One way to increase the realism in image synthesis is through the use of texture. Whenever realistic images are generated by computers, natural phenomena cannot be forgotten. This work presents a study about the generation of procedural textures for the representation of these phenomena. The fundamental theoretical concepts of the main techniques for procedural modeling and texturing applied to a set of natural phenomena are described. A natural phenomena classification is proposed according to the main procedural techniques. As a case study, Particle System techniques using the 3D RenderWare graphics library have been implemented.

Claudia de Castro Oliveira MONTEIRO. “Mecanismos para o trabalho em grupo utilizando as ferramentas WWW e SGBD no processo de gestão do licenciamento ambiental da Petrobrás”. M.Sc. Diss. Presentation: 8/7/98 143[+68] p. Advisor: Hugo Fuks

Abstract: The increasing amount of information that need to be managed nowadays by the corporations, and the geographical dispersion of their organizational units request comprehensive management systems capable of making the information flow through the entire corporation. Thus the need to analyze the behavior of groups that have to perform common activities, which led to the concept of CSCW (Computer Supported Cooperative Work). The purpose of the present work is to study this new concept and to introduce SGMA, an Intranet system based on groupware technology. SIGMA allows the monitoring of environmental licensing processes for enterprises that might impact on the environment, including their phases, activities, requirements, schedules, etc. in real time and in differentiated ways for each type of user. Thus the dissemination of data both from the projects and the people involved can be made more easily.

Claudio Lourenço da SILVA. “SPADD: Uma extensão do modelo ADD aplicada ao projeto de layout espacial”. M.Sc. Diss. Presentation: 4/27/98 74p. Advisors: Ana Cristina Bicharra Garcia (UFF) and Clarisse Sieckenius de Souza

Abstract: ADD (Active Design Documentation) is a model that offers computational support to design development and documentation in engineering. This model has been sucessful used to support decisions originated from projects development in several engineering domains. However, the knowledge representation and reasoning of ADD don't treat fundamentals issues intrinsic to the spatial layout domain, such as: (a) multiple methods for alternative design generation, (b) cyclic dependencies, (c) a context dependent decision process. This research presents SpADD, an extension of the ADD model which guarantees the functions of the original model, applied also to the spatial layout domain. SpADD was implemented to the oil pipeline layout domain, showing the viability of the SpADD model. Initial tests show the feasibility of the model to the domain.

Cristina Dias URURAHY. “Agentes Lua: um mecanismo de comunicação em Lua”. M.Sc. Diss. Presentation: 9/25/98 60p. Advisor: Noemi de La Rocque Rodriguez

Abstract: The object of this work is to evaluate the use of the Lua language [IFC96] as a tool for parallel programming in distributed environments. The communication mechanism adopts an eventdriven approach, that simplifies many aspects of concurrent programming, since processes never block in communication primitives. The goal of this work is to evaluate this mechanism through implementations of problems previously codified with other mechanisms. To study these problems in Lua, a layer over the original mechanism has been implemented, in order to make the processes configuration and the communication among them easier and more reliable. This work describes not only the original mechanism, but also this new layer. We also present the applications that are used for the mechanisms evaluation and the results of this evaluation.

Edison ISHIKAWA. “Gerenciamento de redes de computadores baseado em Web”. M.Sc. Diss. Presentation: 4/13/98 66p. Advisor: Noemi de La Roque Rodriguez

Abstract: This thesis discusses computer network management using WWW's framework. It verifies the possibilities of this framework in network management and offers a management system prototype, the LuaWebMan. It's main feature is the ability to be an extensible application through the Web.

Eliana Silva de ALMEIDA. "A lógica dos recursos no formalismo de Redes de Petri". Ph.D. Thesis. Presentation: 12/10/98 152p. Advisor: Edward Hermann Haeusler

Abstract: We propose a logical language of specification that has as its model the dynamic of resources in Petri Net formalism. This language can be used to describe both the behavior and the properties on concurrent systems. We also extended this language in order to accommodate the time requirements on real time systems. The model of Place/Transition Petri Net is used and is restricted in order to simplify the definition of the calculus. We prove that this restriction is only syntactical and it allows the behavior of any system, modeled by the Place/Transition Petri Net, to be modeled considering this restriction. In order to model the dynamic of resources, net constructing operations are defined, which are identified by a binary tree called decomposition. From any decomposition a deduction in the sequent calculus presentation for this logic can be obtained. For this language, we present an operational semantic that interprets the behavior of the net in the absence of an initial stimulus (formula with dual). This stimulus might cause the realization of some action in the net. We also propose a semantics, based on the idea of possible words, in order to give meaning to the formulas, and the soundness of the system with respect to this proposed semantic is obtained.

Esther de Castro PACITTI. "Estratégias de atualização de dados para diversas configurações de replicação assíncrona". Ph.D. Diss. Presentation: 11/23/98 51 p. Advisor: Rubens Nascimento Melo

Abstract: Data replication is often used in distributed database applications to improve data availability and performance. Replicated data must be periodically refreshed using update propagation strategies. Most of the current strategies guarantee mutual consistency of replicated data but are inefficient. Lazy (or asynchronous) replication is an alternative, more efficient solution where mutual consistency is relaxed. It is needed in applications such as on-line financial transactions and telecommunication systems which require high freshness of replicated data. In this case, the concept of *freshness* is used to measure the deviation replica copies. One focus of this paper is to propose strategies for improving data freshness. Another focus is to specify correctness criterias for different replication configurations, and to propose solutions for correctness enforcement. In this paper, we give a state of the art of replicated databases and we propose a new framework for lazy replication. We introduce two strategies that improve data freshness and an algorithm that enforces correctness for different configurations. Finally, we propose a simulation environment and a performance model to evaluate our strategies. The performance results show that our strategies outperform significantly existing strategies.

Flávio Baruzzi LOPES. "Tecnologia de Workflow e World Wide Web aplicada a garantia de qualidade de produtos e serviços da Petrobrás segundo a Norma ABNT NBR ISO 9002". M.Sc. Diss. Presentation: 6/9/98 281p. Advisor: Hugo Fuks

Abstract: Companies worldwide have sought the ISO 9000 certificate of compliance as a means of demonstrating to their customers that their respective meet a global quality standard. In Brazil, attaining ISO 9000 certification is a way for Petrobras to be eligible for The National Quality Award to improve its market share, to reduce operating problems and to become more competitive in the merging open oil markets currently operating in Brazil. We propose a corporate system for Petrobras that embraces the ABNT NBR ISO 9002 standard, World Wide Web, groupware and workflow technology research. We suggest a strategy to implement an Intranet system developed on Lotus Notes Domino's environment. Finally, we report on results of applying this strategies proposal and of deploying this system for a pilot group.

Gilberto Pires de AZEVEDO. "Agentes reativos para centros de controle de energia elétrica". Ph.D. Thesis. Presentation: 8/28/98 139 p. Advisor: Bruno Feijó

Abstract: This work proposes a new organization for Energy Management Systems based on Reactive Agents. It follows a modern trend in computing by proposing systems of agents based on behavioral

decompositions, and whose “intelligence” emerges from the interactions among those agents and their environment. A framework is developed to apply this approach to Energy Management Systems. The framework aims at providing a structure capable of handling the ever increasing complexity and openess of power system control induced by the changes that are taking place on the power industry, while taking into account that human operators will remain a key element of control. This is performed by a set of agents specialized on helping the operators to accomplish their tasks.

Helena Serrão PICCININI. “Integrando acervos da Internet/Intranet a banco de dados heterogêneos”. M.Sc. Diss. Presentation: 5/19/98 272p. Advisor: Rubens Nascimento Melo

Abstract: Regarding the present companies environment for information management and handling, it has became usual the proliferation of distinct hardware and software platforms, as well as the need of accessing data stored in such different ways. In the Internets, WWW browsers play a role similar to an universal client, allowing the access to information kept not only in HTML formatted documents, but also in conventional files, databases and others kinds of sources. However, there still remains the difficulty of offering the user an integrated view of distinct data types, by using an information integrator system. This dissertation is about an extension of the HEROS system, an Heterogenous Database System with strong coupling, in order to integrate information other than those stored in databases. The present solution uses the Meta Content Framework (MCF), a meta-standard, which allows the definition of patterns of descriptors for each stored data type. In this HEROS context, MCF can be seen as a Data Model, and each metadata pattern (defined using MCF) as an schema describing any of the different information sources to be integrated.

Isa Haro MARTINS. “Um instrumento de análise semiótica para linguagens visuais de interfaces”. Ph.D. Thesis. Presentation: 4/24/98 117p. Advisor: Clarisse Sieckenius de Souza

Abstract: Geometric Modeling Systems have changed from textual batch data entry styles to direct manipulation graphical interface data entry, as a consequence of advances in hardware technology. This has brought out several advantages to users. However, it has also raised several issues that remain to be resolved, with respect to the use of visual resources as expressive tools. One of the weakest points is the non-systematic use of the expressive resources in interactive language specification. This problem is particularly important in Geometric Modeling Systems, due to the complexity of such systems and the language constraints imposed by visual expression. These systems are representation/abstraction of physical world objects, so, they are intrinsically semiotic systems. Because they are signs generating systems, they have to support users in the fundamental actions related to this task: (a) to select and to establish significant shapes (primary and secondary) and (b) to supply systematic procedures for the interpretation of such shapes when used in communication/representation acts. This work discusses the use of direct manipulation visual languages in Geometric Modeling Systems through the use of a semiotic paradigm. It proposes a systematic analysis to the use of visual expressive resources and shows the effect of this approach in interface specification environments. The work analyses the limits of the visual resource as an expressive medium and its structuring as a language. Based on the theoretical directives presented, it proposes an extension of TAG (Task-Action Grammars), including semiotic aspects of the language, named Semiotic TAG (STAG). The STAG reflects the systematization of expressive choices, in order to support designers in the specification of these particular visual languages. It acts together with orientation directives for coding the visual language (ODCVL) and with implementation of STAG together with the ODCVL and EHVL is proposed.

Isabel Cristina Mello ROSSETI. “Uma biblioteca para balanceamento de carga em ambientes distribuídos”. M.Sc. Diss. Presentation: 3/5/98 100p. Advisor: Noemi de La Roque Rodriguez

Abstract: Many load balancing techniques have been proposed, in order to improve the performance of parallel applications. This dissertation presents some existing load balancing algorithms. These algorithms are presented according to an analytical model called Matrix Iterative Model. The application of some these algorithms to a specific problem, the N-body problem, is discussed. A load balancing library developed for a parallel implementation of this problem, based on Barnes-Hut algorithm, is also discussed.

Jair Cavalcanti LEITE. "Modelos e formalismos para a engenharia semiótica de interface de usuário". Ph.D. Thesis. Presentation: 10/7/98 194p. Advisor: Clarisse Sieckenius de Souza

Abstract: Interactive sysems usability could be enhanced if users learn all the knowledge - the usability model - that enables them to apply the designer's potential solutions to their domain tasks. The Semiotic Engineering approach perceives interactive systems as metacommunication artifacts that send a message from designer to users, whose expression is the lower-level messages exchanged between user and system and whose content is the usability model. Starting from this perspective and based on semiotic theory concepts from Charles S. Peirce and Umberto Eco we present conceptual models to the interface as the expression and to the usability model as the content of the designer's message. We also develop a semiotic system to support user interface design. The system is composed of a specification language and rules that map specified messages to user interface widgets. Our emphasis here is not on a esthetics aspects of users interfaces, but on the interactive and performing nature of the interface message as it is carried throughout the computational medium.

Juli Ling Ching HUANG. "Uma arquitetura para o desenvolvimento de interfaces gráficas baseadas em grafos". M.Sc. Diss. Presentation: 8/21/98 54p. Advisor: Marcelo Gattass

Abstract: The development of graphical interfaces based on the direct manipulation of application objects on a canvas is a complex task that finds little support in nowaday's programming technology. Directed graphs in the form of schematic diagrams are used in programs for supervision, control and simulation of electric power systems, industrial plants, and many other similar systems in which the process flows through a net of components. Due to the large number of applications based on these types of objects, they have come to deserve specialized tools for their development. The present work proposes an architecture for the development of graphical interfaces based on graphs, it allows users to create and to instance equipments with attributes and behavior that depend on the application, with a high level of abstraction. As a tool for the development of applications based on the proposed architecture, a graphical object library with support for the underlying graph, was implemented. The goal of this architecture is to allow the programmer to focus on the application's development rather than on user interface issues. The proposed architecture was used in industrials prototypes in order to validate the ideas presented here.

Luiz Cristovão Gomes COELHO. "Modelagem de cascas com interseções paramétricas". Ph.D. Thesis. Presentation: 8/11/98 94p. Advisor: Marcelo Gattass

Abstract: We present a methodology for modeling finite-element mesches defined on parametrics surface patches. The idea is to build curves and generate meshes over the parametric patches built with these curves, which also connect adjacent meshes. The final model is a representation of all meshes combined into a single data structure. The basic tools to generate such meshes are the user interface to model space curves and the algorithms to construct the elementary domain mappings. The main problem in composite modeling is how to handle mesh surfaces that intersect each other. We present an algorithm that models the intersection curves precisely and adjusts both meshes to the newly formed borders. The algorithm is part of an interactive shell modeling program, which has been used in the design of large offshore oil structures. We avoid unacceptable interaction delays by using a variant of the DCEL data structure that stores topological entities in spatial indexing trees instead of linked lists. These tree speed up the intersection computations required to determine points of the trimming curves, and also allows mesh reconstruction using only local queries.

Marcelo Blois RIBEIRO. "CLEW- Uma proposta de ambiente de aprendizado cooperativo para a Web". M.Sc. Diss. Presentation: 3/17/98 118p. Advisor: Hugo Fuks

Abstract: The combination between entertainment and education is becoming a productive form of human knowledge transmission. This work presents a proposal of a cooperative learning environment for the Web. It combines constructivist educational concepts with the structure of the Multi-User Dungeon, the theory of workflows, the interactivity of the Web and the multimedia and three-dimensional presentation feature of the Virtual Reality. The learner becomes an active participant of the learning process, interacting with the elements of the virtual environment to construct his knowledge.

The knowledge of each learner is shared with other learners who share the same virtual world, generating a proper set of social relations and originating a knowledge community.

Marcelo Fabián FRIAS. "Fork algebras em álgebra, lógica e ciência da computação". Ph.D. Thesis. Presentation: 2/18/98 230p. Advisor: Armando Martín Haeberer

Abstract: This thesis is focused on the study of fork algebras (an extension of relation algebras with a new operator called fork) from three different points of view. From an algebraic point of view, emphasis will be made on providing a clear and concise definition of the classes of proper fork algebras (i.e. fork fork algebras whose domain is made of binary relations) and abstract fork algebras (defined by a finite set of equations), as well as on proving a representation theorem stating that every abstract fork algebra is isomorphic to a proper one. Also the completeness of the relational calculus MU2 (a relational calculus for program schemes) will be proved by using as an essential tool the representability of fork algebras. From a logical point of view, fork algebras will de used for algebraizing classical and non classical logics (among the latter, modal, dynamic, intuitionistic, and intermediate logics). Finally, from the point of view of computer science, fork algebras will be used as the foundation of a calculus for formal program construction. Because of the algebraic and logical properties of fork algebras the calculus also allows to reason about program design strategies.

Marcelo Fagundes FELIX. "LET: Uma linguagem para especificar traduções e seu compilador". M.Sc. Diss. Presentation: 4/24/98 210p. Advisor: Edward Hermann Hauesler

Abstract: Code Transformation is a fundamental activity in Computer Science, and one of the most usually remembered tasks in this context is the language translation. The traditional methods for compiler construction evolved from manual and ad hoc construction techniques to the usage of tools for automatic generation. Another approach to the translation problem arise from the area of Transformations and, at present, its tools are being used for many purposes which have to do with this problem. TXL is one of this transformational tools. It consists in a transformational machine and a language for specification which was increased until become considered as a programming language. The experience with transformational implementation of a compiler, using TXL, motivated the creation of a tool which improves the programming, in view of the fact that a great part of the manual code generation could be automated. These are our purposes when proposing LET, a transformation specification language ("Linguagem para Especificar Transformações"), and a compiler prototype which generates code for TXL machine. Initially, we do an overview of the subject and, in this context, of the transformational language TXL as well. Subsequently, we present LET: the language and its compiler, detailing the project and the implementation. Finally, samples of specification and cases of study are given at the end of this work.

Marco Aurelio Catunda MARTINS. "Extensão dinâmica de agentes CORBA". M.Sc. Diss. Presentation: 29/09/98 76 p. Advisor: Noemi de La Roque Rodriguez

Abstract: The SNMP architecture of network management focus all of process in manager application, that is, the application manager collects raw data from agents and analyze it, showing the results to a local administrator. With the computer networks growth, more distributed management architectures has become more important. The use of the distributed objects technology CORBA have becomeing a strong candidate to build more distributed management architectures. In this architecture, the applications are organized in objects that are distributed through the network. When building a management tool, agents are replaced by server objects, while the management application acts as a CORBA client. With the goal of making more flexible the role of servers so they can be dinamically extended, this work proposes two ways of extending CORBA objects using the configuration language Lua. The first one is based on the meta-interface, where the methods exposed by the meta-interface can be used to access the data structures that describe the effective interface of the objects installed in the server. The second one is through DSI (*Dynamic Skeleton Interface*), where a Lua object can be installed in the server and begins to act as a regular CORBA object.

Marcus Vinicius Rayol SOBREIRO. "Quantização de imagens". M.Sc. Diss. Presentation: 5/15/98 91p. Advisors: Jonas de Miranda Gomes (IMPA) and Marcelo Gattass

Abstract: In this master thesis we studied the image quantization problem. In the beginning of this work we presented an introduction about digital image and its attributes. The image quantization problem is presented showing the possible strategies for solving it. We presented several image quantization algorithms and proposed a new one called quantization by pairwise clustering. In the conclusion, we made a comparison between all algorithms presented.

Maria Elisa Fernandes VIDAL. "Método para mapeamento e avaliação de processos organizacionais". M.Sc. Diss. Presentation: 5/20/98 145p. Advisor: Bruno Maffeo

Abstract: This dissertation presents a method to map and evaluate organizational processes, to be used during different phases of a reengineering program. According to this method, the definition of a new design for the process to be innovated begins with the creation of the model of the essence of the information system responsible for the process execution. This model, generally used during the phase of essencial requirements specification, is a conceptual tool of Software Engineering used to represent what the system is expected to do, regardless to how the system will be implemented using certain technologies. The conceptual tools of Software Engineering are also used to represent the actual and innovated process design. The latter must also be compared to the former in terms of quantity and quality, in order to evaluate the possibility, the opportunity and the relation between the costs and benefits associated to the reengineering. This evaluation was supported by a software tool used in project planning and management. The method was used in a case study of the process of receiving goods in a store. It was necessary to extend and adapt the languages used to model the essence and to especify the design of the processes to represent some features of the organizational process.

Maria Lucia Scerni BARBOSA. "Uma extensão da abordagem operacional do método Tau de Lanczos". Ph.D. Thesis. Presentation: 8/31/98 82 p. Advisor: Therezinha Souza da Costa

Abstract: It is presented a formal extension of the operational approach for the Tau-Lanczos-Ortiz Method complementing the Bunchaft's work related to the recursive approach of Tau-Lanczos-Ortiz and that one by El-Daou of the equivalence of the two approaches. This method is applied to a numerical treatment of the atmospheric pollution concerns. The spliting method has been used, subdividing the problem according to the different phisics processes envolved. A comparation with the method of characteristics has been made.

Maria Stella Costa MICHIREFE. "Um enfoque de banco de dados para workflow [na tese: Em busca de um sistema de gerência de workflow baseado na tecnologia de sistemas de gerência de banco de dados]" M.Sc. Diss. Presentation: 12/17/98 132 p. Advisor: Rubens Nascimento Melo

Abstract: Workflow is the automation of processes that we daily use to do our business. A workflow application automates the sequence of activities used to execute a process, including the status of the execution of each process, as well as the tools needed to manage the process in itself. The workflow technology has problems just like the ones in the database technology that were not completely solved yet. Moreover, the workflow products are considered to be proprietary in term of their process and data models. The focus of the present work is to study the workflow technology in terms of database management. This text presents a model of workflow management as a non-conventional database management, where the process management issue is stressed. The workflow technology characteristics are defined and it is presented some related works and some commercially available products. To study how the DBMS (Data Base Management System) concepts helps to solve problems in the workflow technology, there is a comparative analysis between the database management and workflow management systems.

Maurício Cardoso de SOUZA. "Técnicas de aceleração e redução de vizinhança em busca tabu para o problema de Steiner em grafos". M.Sc. Diss. Presentation: 5/11/98 66p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: We propose a tabu search algorithm for the Steiner problem in graphs. We present the Steiner problems in graphs, its formulation and complexity. Variants and applications are also described. Exact

methods and the most efficient heuristics for its approximate solution are reviewed. We also review the basic concepts of tabu search. The proposed tabu search algorithm for the Steiner problem in graphs makes use of neighborhood reduction techniques and move value estimations. Feasible solutions are characterized by their Steiner nodes. The solution itself is a minimum spanning tree of the set of terminal nodes and Steiner nodes. The neighborhood is based on insertions and eliminations of nodes to/from the current solution. A neighborhood reduction technique is used to speed up the evaluation of insertion moves. Only the nodes that can be inserted in the current solution by an edge with a weight less than that of maximum weight in the current solution are evaluated. Move values associated with insertion moves are estimated by a greedy procedure. Two alternative procedures to find the initial solution and three different diversification strategies are used. Computational experiments on benchmark problems are reported. Comparative results are presented. We conclude that the search mechanisms developed are able to find high quality solutions in moderate computation times. We analyze the contributions and possible extensions of this work.

Michele Mara de Araújo Espíndula LIMA. "LuaMan - Uma plataforma para desenvolvimento de aplicações de gerenciamento extensíveis". M.Sc. Diss. Presentation: 1/16/98 114p. Advisor: Noemi de La Roque Rodriguez

Abstract: The development of network management applications faces problems such as size, complexity and heterogeneity of devices, services, protocols and the communication medium, platform dependence, and differing management policies from institution to institution. This work presents a platform for the development of extensible management applications based on the programming language Lua, a configuration language developed at PUC-RIO. With this platform, management applications can be developed, and then new features can be dynamically added to the application if new needs appear. This work also presents some typical management applications that were developed to evaluate the platform.

Natacha GÜELL BARROSO. "Projeto da navegação orientada ao usuário de aplicativos hipermídia". M.Sc. Diss. Presentation: 4/24/98 211p. Advisor: Daniel Schwabe

Abstract: This paper describes a user centered method for navigation design in hypermedia applications. The proposed approach extends the Navigational Design phase of OOHDM with the use of scenarios. This allows the reuse by less experienced designers of design knowledge, gathered by more experienced ones, resulting in a more systematic method. The method's effectiveness has been exercised in designing the navigation of real life hypermedia application in the WWW, which allowed a better characterization of such applications with respect to other hypermedia applications. A second consequence has been the enrichment of OOHDM, making it more suitable for representing solutions for the WWW.

Raquel Oliveira PRATES. "A engenharia semiótica de linguagens de interfaces multi-usuário". Ph.D. Thesis. Presentation: 10/09/98 117 p. Advisor: Clarisse Sieckenius de Souza

Abstract: Nowadays there are guidelines, frameworks, models and toolkits that support the development of multi-user interfaces. Toolkit assist designers in building the interface, whereas guidelines and frameworks direct the designer towards issues to be considered during interface design. Models, on their turn, allow for the description of the conceptual model of the group (or part of it) to be represented in the interface. Nevertheless, none of these provide the designer with an environment in which to plan and define the system's interface. We take a Semiotic Engineering approach, in which the interface is perceived as one-shot message being sent from the designer to the users. In particular, interfaces can be viewed as meta-communication artifacts, since they can also exchange with the users. Furthermore, in multi-user environments, they are also communication embedding artifacts, since they allow for the communication among users. This approach focuses on the expression of the designer and requires the development of means to support this expression. In this work, we intend to provide support to multi-user interface designers, in a Semiotic Engineering framework. In order to meet our goal, we developed a meta-communication model from which models and techniques to support the development of multi-user interfaces can be developed. The meta-communication model proposes that designers should be provided not only with means to describe their messages, but also some qualitative indications on their description. Based on this model, we developed a model of an architecture to support the design of multi-user interfaces. This model assists designers that develop multi-user interfaces top-down.

Therefore, this work is the first step in the direction of an environment to support the design of multi-user interfaces with quality.

Ricardo Choren NOYA. "Quest - Um ambiente de avaliação educacional para a Web". M.Sc. Diss. Presentation: 3/12/98 111p. Advisor: Hugo Fuks

Abstract: The Internet has a great potential for educational purposes. In 1997, the Software Engineering Laboratory at PUC-Rio implemented a first version of AulaNetTM, a web-based educational environment. This year, some of the teaching staff will be using this environment to offer regular term discipline through the Web. This work introduces Quest, the quiz generator and assessment tool incorporated into AulaNet TM to provide the means to support educational assessment through the Web.

Ricardo Flores Hilgenberg BEZERRA. "Um modelo para integração de funcionalidades de navegação hipermídia em aplicações R-OLap de data warehouse". M.Sc. Diss. Presentation: 12/17/98 183 p. Advisor: Rubens Nascimento Melo

Abstract: We present a study of the Data Warehouse (DW) and hypermedia technologies and we propose a model to integrate the hypermedia navigation and visualization concepts to the concepts used on the dimensional modeling of Relational On-Line Analytical Processing (R-Olap) applications. R-Olap applications designers may use the proposed model, named integrator model, to incorporate more refined navigation functionality, adding semantics and access and interaction utilities. We made a case study to show the proposed model utilization implementing both the dimensional data structure and the integrator model through the Microsoft Access DBMS and developing an internet R-Olap application prototype through HTML and CGI-Lua. We conclude by comparing the proposed solution to the ones presently available on the market.

Sylvia de Oliveira e CRUZ. "Um catálogo de padrões para construção de sistemas orientados a objetos". M.Sc. Diss. Presentation: 4/27/98 212p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Appearing like a proposal of solution to the problem of reuse of software, the patterns had been quickly accepted and incorporated by the community of object oriented. In a prime moment they were proposed in a extremely abstract way, not being, therefore, completely specified. The current necessity of incorporation of the patterns concepts by software development tools, with automatic code generation for these, require, although, complete specifications, what most of the times, reduces its generality. This tendency urged the creation of patterns specifics to certain applications domains. Among the techniques developed with this aim, there is one that deserves special attention. Called pattern mining, it consist in searching patterns in softwares already developed and tested to be, after words, used in the development of news softwares. This work uses this technique about a system that implements a tool in order to develop objects oriented systems that guarantee the correct application of the concepts existing in this paradigm. The set of patterns generated captures this guarantee of correction and could be used in the construction of a new tool of development or, being so, in a more generic way, in the construction of systems that follows the object oriented paradigm.

Thereza Regina Werneck RICHA. "Convergência de algoritmos tipo-Jacobi quaterniônios". Ph.D. Thesis. Presentation: 8/27/98 166 [+42] p. Advisors: Derek Douglas Jack and Therezinha Souza da Costa

Abstract: In this thesis we consider various aspects of the problem of calculating the eigenvalues of a real skew-symmetric matrix via the so-called *qJ* (quaternionic Jacobi) algorithm, with an eye to generalizing known algorithms to the skew-symmetric case. In particular, we shall be interested in the global and asymptotically quadratic convergence of the *qJ* algorithm for quasi-cyclic orderings, when the eigenvalues are distinct. After some considerations on Jacobi-type methods in the symmetric case and a description of the qJ algorithm following [H 93], we present a version of the algorithm in terms of the rotation angles which leads to a proof, in the skew-symmetric case, of global convergence for distinct eigenvalues. Using the method of [H 93] we prove a majorization result for the eigenvalues of a skew-symmetric matrix, analogous to Schur's theorem [Le 96] in the symmetric case. We also give a

geometric proof of the skew-symmetric Schur-Horn theorem (following [LRT] based on the ideas of [Le 96], where the symmetric case is dealt with.

Verônica Lourenço do Herval COSTA. "Browsers para sistemas de desenvolvimento orientados a objetos: uma aplicação". M.Sc. Diss. Presentation: 9/14/98 114 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: Because of the huge amount of information available nowadays from computers all around the world, dealing with them with our bare hands is a difficult task. This situation turns browsers into indispensable tools for the handling of information in the World Wide Web or in Software Engineering. This work is about browsers for object oriented development systems, particularly CASES and programming environments. The study of the browsers of some of such tools available in the market leads to a proposition of the aspects of what should be the state of art for this kind of application. As a result, we obtain the framework of a browser for 2GOOD, a CASE tool which is part of the ARTS project from Laboratório de Métodos Formais of the Computer Science Department of PUC-Rio.

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Affonso de CUSATIS JUNIOR. "Raycasting intervalar de superfícies implícitas com aritmética afim". M.Sc. Diss. Presentation: 23/04/99 72 p. Advisors: Luiz Henrique de Figueiredo (LNCC) and Marcelo Gattass

Abstract: This work investigates *ray casting* - the most natural visualization technique for implicit surfaces - using interval methods. Some robust algorthims are implemented for ray casting generic surfaces, using interval methods and conventional numerical methods in the determination of ray-surface intersections - a central operation in ray casting - and a new interval calculation model is tested: affine arithmetic (AA), proposed as a alternative for standard interval arthmetic (IA). AA was designed in order to avoid the IA's error explosion problem at long interval calculation sequences, and takes into account correlation's between terms in a interval expression. So, AA defines more expensive operations but yields more precise results, and this feature may accelerate several interval algorithms.

Alexandre Guimarães FERREIRA. "Uma arquitetura para visualização distribuída de ambientes virtuais". M.Sc. Diss. Presentation: 22/12/99 83 p. Advisor: Marcelo Gattass

Abstract: A number of applications require a visualization system that provides multiple visions of an animated virtual environment. The disposal of multiple visualization devices around a user consists in a natural solution to compose a panoramic view of the scene. Virtual environment panoramic views, simultaneously supplied to different users, can be obtained from different points of view, in a more sophisticated arrangement. Each panoramic scene presented to a user is formed by the composition of images generated in each visualization surface. This way, it is possible to imagine each visualization device as a window to the virtual environment. The use of this technology seeks to enhance human perception and to increase user's immersion. This is reached through a quantitative increase of the visual stimuli provided, due to the use of multiple windows. A traditional approach for the development of such system is based on specialized systems that use dedicated hardware, which is responsible for the visualization devices' centralized processing and control. This work proposes a distributed architecture to be used in heterogeneous networks with low-cost graphic workstations, seeking to provide greater scalability, portability and flexibility to the visualization system. The proposed architecture seeks to support the development of applications that present a consistent visual outcome for the virtual environment. To accomplish that, techniques are presented to assure synchronism and integrity among several workstations.

Alexandre Reis e SILVA. "Infra-estruturas de chaves públicas - caminhos de certificação e repositórios distribuídos". M.Sc. Diss. Presentation: 12/03/99 114 p. Advisor: Michael Anthony Stanton

Abstract: The primary goal of this dissertation is to present a practical study of aspects related to the security applications of telecooperation in geographically distributed intra and intercorporate environments. Issues of public key distribution are studied, and we discuss the use of digital certificates, issued by certification authorities, to distribute keys and their storage in distributed repositories. A comparative study of public key infrastructure standards and implementation is presented and special emphasis is given to certification path processing methods. This study results in a new certificate path processing method, and to show its viability a prototype is implemented, allowing telecooperation applications to be interoperable, even in large corporate environments. This tool accesses distributed repositories in order to retrieve certificates, to perform automatic certificate path construction in a simple and dynamic way, and to validate the resulting paths.

Ana Isabel de Azevedo Spinola DIAS. "Sistemas reativos: uma abordagem geométrica". Ph.D Thesis. Presentation: 06/05/99 132 p. Advisor: Edward Hermann Haeusler

Abstract: This thesis describes a way to model reactive systems that is based on Sheaf Theory. The starting point for the construction of this model is the interpretation of a reactive system as a transition system with special characteristics, which is associated to a semi-sheaf - an object of a category defined in this dissertation. This category is a topos, and this fact is proved in detail. The categorial relation of

semi-sheaves with sheaves and with pre-sheaves is discussed. The notion of bisimulation in the category of semi-sheaves is analyzed.

Anderson Oliveira da SILVA. "Modelo para o desenvolvimento de ferramentas para gerência de redes combinando SNMP, HTTP, HTML e Java". M.Sc. Diss. Presentation: 23/04/99 71 p. Advisor: Michael Anthony Stanton

Abstract: As computer networks continuously grow, automatic network management seems to be required in order to guarantee confiability and performance. SNMP (Simple Network Management Protocol) is the principal protocol for TCP/IP network management, and version 1 is a standard, established and used in the great majority of manageable network equipment. WWW (World Wide Web) and the established user interface of the browsers bring together many Internet services in the same tool of use to network administrators. This dissertation introduces a model for developing network management tools combining SNMP, HTTP, HTML and Java, in order to make tools available to facilitate the management of network equipment from different vendors. This is achieved by combining management information from different sources in order to obtain results of significance to network administrators, as well as using uniform interfaces between different systems and running multiplatform.

André Renato Gualter BASTOS. "Comunicação de voz sobre ATM: utilização na rede corporativa ATM da Petrobrás". M.Sc. Diss. Presentation: 27/04/99 133 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Recently, it has been having a strong movement towards the integration of the network technologies, like voice, data and video, in only one network infrastructure. Looking for this target, many companies have decided to use ATM at their network backbones. Petrobras, in the same way, has been installing his new ATM WAN backbone since 1998. In this work we are presenting a migration proposal of the voice service, from the Petrobras' telephony network to a new ATM WAN network. Besides, we also developed a new service, the Desktop Voice over ATM, to provide voice communication between ATM workstations.

Angelo Ernani Maia CIARLINI. "Geração interativa de enredos". Ph.D. Thesis. Presentation: 31/04/99 167 p. Advisor: Antonio Luz Furtado

Abstract: Within a narrative, be it fiction or a description of a real situation, these are characters (agents) that compete and collaborate with each other to achieve thier goals. Literaty narratives, as well as real situations from specific domains, often present sets of typical events and usual patterns in the occurrence of such events. Morever, it is possible to identify relations between the states of each character during the narratives and the progressive appearence of goals. This thesis intends to study the use of Artificial Intelligence and Database techniques for generating plots of narratives. Such use is relevant for the study of literary genres, the creation of new stories and the simulation - both in the real and fictitious worlds - of the behaviour of agents who interact with each other in trying to achieve their goals. We describe an environment created for using behavioural patterns, extrated either from past actions (in case of simulations for helping decision making) or from typical narratives of a literary genre. We use two main techniques for obtaining plots: pattern recognition and simulation. In the first case, we use plan recognition for recognizing typical plots. In the second case, we use a temporal logic both for goal inference and for planning the interaction between agents. Our approach is interactive not only because we take into account the interaction between agents, but also because of the interaction between the user and the context defined by the behavioural patterns. A prototype, implemented in Prolog and using Constraint Programming, is operational.

Anna Magdalena HESTER. "A ferramenta CGILua em múltiplas APIs com o servidor HTTP". M.Sc. Diss. Presentation: 16/07/99 76 p. Advisor: Roberto Ierusalimschy

Abstract: This work presents the functioning and design of the tool CGLua is a server-side web tool that dinamically creates web pages from scripts written on the programming language Lua. The tool accommodates different forms of interactions with the WWW server - the multiples APIs - without creating incompabilities with the scripts. The objective of this text is to describe how the software's

internal architecture was designed to fit this purpose. The main benefits are a better performance and support to the storage of data based on sessions, through the use of a generic mechanism of data sharing.

Antonia Lucinelma Pessoa ALBUQUERQUE. "Cenários virtuais com um estudo de sincronismo de câmera". M.Sc. Diss. Presentation: 06/04/99 89 p. Advisors: Jonas de Miranda Gomes (IMPA) and Marcelo Gattass

Abstract: Techniques of filming using special effects have existed since the 1920's, long before the advent of computers. Two of them are known as Back Projection - when an actor acts in front of a screen that reproduces other footage (very common in train scenes), and Blue Screen - when an actor acts in front of a blue wall for later composition with another scene. However, it was computer graphics and the computer's advance that made possible great evolution in this area. This work approaches Virtual Sets, describing its conceptualization, and showing its correlation with other areas in computer graphics. The virtual sets' pertinent technologies are identified in computer graphics and have their given solutions and unsolved problems argued. Amongst the presented problems, the work studies one technique based on differential otimization aiming at the synchronism of camera that would allow interaction, in real time, of the real and synthetic images.

Antonio Tadeu Azevedo GOMES. "Um framework para provisão de QoS em ambientes genéricos de processamento e comunicação". M.Sc. Diss. Presentation: 31/05/99 162 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Over the past few years, an emerging demand for multimedia communication and processing systems has been observed. On these systems, the notion of *quality of service* (QoS) has evolved either as a way for user requirements specification, or as a reference for the configuration, operation and maintenance of the resource sharing and orchestrating mechanisms. This thesis is motivated by the belief that architectures for the provision of specific services are not flexible enough to support new media treatment technics. As an alternative, the thesis presents a framework that organizes QoS provision in a domain which is sufficiently generic to include communication and processing environment, encompassing from specific subsystems to distributed multimedia systems. With these characteristics, the framework allows the construction of configurable systems, with regard to the introduction of new services, and eases the implementation of resources sharing and orchestrating mechanisms.

Artur Alves PESSOA. "Construção eficiente de códigos livres de prefixo". M.Sc. Diss. Presentation: 27/08/99 159 p. Advisor: Ruy Luiz Milidiú

Abstract: Some of the most efficient methods for representing digital information are based on prefix-free coding. Given a sorted list of weights $W=[w_1,...,w_n]$, an optimal code is defined to be a prefix-free code that minimizes the weighted sum of its codeword lengths. In this case, the well-known Huffman's algorithm constructs an optimal code for W in $O(n)$ time and using $O(n)$ space. In addition, this code calculation can be done in-place, that is, using only O(1) extra and overwriting the input weights with the output codeword lengths. Let H be the length of the longest codeword in a given prefix-free code. An optimal length-restricted prefix-free code also minimizes the weight sum of its codeword lengths with the additional restriction that we must have $H \leq L$ for a given value of L. Two approximative algorithms for constructing length-restricted prefix-free codes are the WARM-UP algorithm and the BRCI algorithm. In this work, we present the following new results: an improved in-place implementation for the Huffman's algorithm; the Lazy Traversal algorithm, introducing a new space-economical approach for constructing optimal codes without destroying the input weights; four algorithms based on this new approach: the F-LazyHuff, E-LazyHuff, Runlength F-LazyHuff and B-LazyHuff algorithms, where last one runs in $O(n)$ time, in the worst case, and requires only $O(H)$ extra space; the homogenization technique: a new technique that can be used to improve the running time of algorithms for constructing prefix-free codes; two efficient implementations for the WARM-UP algorithm, that are based on the inplace Huffman's algorithm and the Runlength F-LazyHuff algorithm, respectively; an in-place implementation for the BRCI algorithm. We also report experimental results comparing the performance of some proposed methods with that of some implementations found in the literature.

Carla Andrade de Almeida CARVALHO. “Um ambiente para apoio ao trabalho em grupo na WWW”. M.Sc. Diss. Presentation: 15/09/99 140 p. Advisor: Daniel Schwabe

Abstract: This work presents a conceptual environment architecture for supporting workgroups in WWW. This architecture includes groups, workflow, agenda, documents repository services and their interactions, and uses a group-based authorization model to control the access to the resources, reflecting formal and informal organization structures.

Carlos Augusto Teixeira MENDES. “DLua: uma ferramenta para desenvolvimento de aplicações distribuídas”. M.Sc. Diss. Presentation: 12/11/99 132 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: DLua is an extension to the Lua language which provides support for developing distributed applications. It’s main characteristic is supporting multiple communications paradigms. The supported paradigms are: RPC, process creation, rendezvous and message passing. This work presents a description of DLua, along with results obtained by a comparison between DLua and C++ implementations of a set of distributed algorithms, covering their performance and expressiveness.

Daniel de Ariosto PINTO. “ND: uma linguagem orientada a objetos para processamento paralelo em ambientes de redes de estações de trabalho”. M.Sc. Diss. Presentation: 24/02/99 145 p. Advisor: José Lucas Mourão Rangel Netto

Abstract: ND is a totally object oriented parallel language with a virtual shared memory, designed to run in loosely coupled environments and in the SPMD programming model. From the semantical point of view, groups constitute the basic language concept and it is expected they play in a parallel programming environment a role similar to objects in sequential programming. In ND , groups form the basic encapsulation scheme of parallel operations, requiring careful design of classes, given that object groups abstract of the whole processing instead of any single object (class). ND programs are viewed as applications, each one made of one or more units, like in Object Pascal. In the run time, application groups can be created, each one having at each node of the underlying logical network architecture one or more independent copies. Those groups can be used to create object and process groups as desired. Inheritance is considered an essentially sequential feature and conflicts arisen by the inheritance anomaly must be explicitly handled by the programmer. Semaphones and guards are the mechanisms proposed to solve inheritance anomaly cases, guards can be coded at the level of classes and/or methods. Although ND programming style suggests a shared memory environment, the proposed language includes some machanisms for message switching. One of these features is the queue, a feature similar to the homonymous Hybrid facility.

Denise Aboim Sande e OLIVEIRA. “Uma abordagem semiótica para a representação de conhecimento”. Ph.D. Thesis. Presentation: 20/05/99 p. Advisor: Clarisse Sieckenius de Souza

Note: Not available.

Diva de Souza e SILVA. “Uma arquitetura de sistemas de data warehouse usando Heros: um sistema de gerência de banco de dados heterogêneos”. M.Sc. Diss. Presentation: 29/09/99 104 p. Advisor: Rubens Nascimento Melo

Abstract: In the development process of Data Warehouse Systems, capturing data is perhaps the most important stage in the process. Data stored in the operational basis of a company and in external sources must be integrated into the Data Warehouse structure, creating a database for applications which will support the company’s decision making. The main problem is that data are typically stored in hardware and/or software heterogeneous environments. This work proposes an Architecture for the creation and maintenance of Data Warehouse systems, using a Heterogenous Database Manager System - the HEROS, as a middleware to exploit data from operational systems and external sources in a company. The utilization of a HDBMS as the integrator of the operational bases, translating local data schemes and integrating them into a global scheme contributes, in a very positive way, towards the solution of a great problem of Data Warehouse.

Eduardo Sany LABER. "Códigos de prefixos: algoritmos e cotas". Ph.D Thesis. Presentation: 08/07/99 117 p. Advisor: Ruy Luiz Milidiú

Abstract: The prefix codes play an important role in data compression and data communication. These codes also present relation with search problems. In this thesis, we present new structural and algorithmic results concerning the prefix code class. We theoretically explain results related to the high compression rates of some methods that have been used for practical purposes. We also propose efficient algorithms for constructing optimal prefix codes and some variants. The major results are listed below: a new parallel algorithm for constructing optimal prefix codes; a sharp upper bound for the compression loss introduced due the usage of length restricted prefix codes; an upper bound for the compression loss introduced due the usage of length restricted alphabetic prefix codes; an O (n log n) time approximative algorithm for constructing length restricted prefix code; a O (n log n) time approximative algorithm for constructing length restricted alphabetic prefix code; a strongly polinomial version for the WARM-UP algorithm; a linear time algorithm for recognizing optimal length restricted prefix codes; a proof for Vitter's conjecture about the performance of the Dynamic Huffman Codes constructed by FGK (Faller, Gallenger and Knuth) algorithm.

Elvira Maria Antunes UCHÔA. "Framework para integração de sistemas de bancos de dados heterogêneos". Ph.D.Thesis. Presentation: 11/02/99 241 p. Advisor: Rubens Nascimento Melo

Abstract: Heterogeneous database systems have been considered one of the most feasible solutions for the integration of existing systems, both autonomous and different, without the need of alterations. A heterogeneous database system must be able to integrate new types of component database systems, new hardware and software platforms, and new forms of communication, without having to restructure its existing implementation code and design. The framework technique provides the adequate infrastructure to meet this requirement, because a framework is a software (sub)system of a particular domain that can be tailored for individual applications. A framework consists of a large structure that can be reused as a whole for the construction of a new system, which represents, in the heterogeneous database system context, each new federation. This work proposes a framework metamodel, which formally represents in Z specification language, the main concepts relative to the framework technique. Based on this knowledge and the experience acquired in the developing of HEROS - Heterogeneous Database Management System, currently under research at Departamento de Informática - PUC-Rio, this work presents a framework for integrating heterogeneous database systems and shows how it may be used through a case study.

Enylton Carlos Faria Machado COELHO. "Visualização interativa de terrenos em uma arquitetura cliente-servidor". M.Sc. Diss. Presentation: 07/07/99 52 p. Advisor: Marcelo Gattass

Abstract: Interactive terrain visualization is useful for various applications such as Geographical Information Systems, military training, city planning and tourist information systems. In most of these cases, it is natural to use a Client-Server architecture, in which the data, usually very large, is stored in one or more servers, that respond to requests made by client programs running on the user's machines. This work addresses the various techniques - data storage schemes, network communication, data visualization and interaction control - employed in such systems. Based on this discussion, an application to allow visualization of large terrain data over a local network was developed. This system adopts a multi-resolution representation for the terrain data. This allows fast interaction between user and application, regardless of the size of the data, due to the use of algorithms which select the appropriate level of detail for rendering the scene. System implementation issues are discussed in detail, and performance is assessed.

Esteban Walter GONZALEZ CLUA. "Modelagem procedimental para visualização de elementos da natureza". M.Sc. Diss. Presentation: 14/12/99 96 p. Advisor: Marcelo Gattass

Abstract: Modeling natural phenomena is an area of active research and growing importance in Computer Graphics. The purposes of this work are to present a thorough bibliography about this subject, to cover fundamental concepts and to propose some new techniques. It focuses mainly on the procedural modeling techniques but it also presents specific visualization and illumination methods.

Fernando Balthar Pereira da SILVA. "Acesso às redes ATM baseado em quadros: um estudo do serviço da dados da Petrobrás". M.Sc. Diss. Presentation: 21/05/99 162 p. Advisor: Luiz Fernando Gomes Soares

Abstract: There has been a growing interest in frame based access to ATM WAN networks, both at standardization departments and at manufacturer's forums, as an option for cell based access. This work makes a comparative analysis of proposed technologies for frame access. It stresses aspects and interpretations not covered in the specialized literature and clarifies the advantages and disadvantages of each technology. Based on this study, a proposal for the Petrobras new ATM WAN network is presented. As an additional contribution, this work also presents an implementation of the frame relay service specific convergence sublayer for application servers with ATM network interface card. This implementation will allow frame relay users to access these servers.

Flávio Miguel VAREJÃO. "DORPA: uma ontologia de design que integra requisitos, processos e artefatos". Ph.D. Thesis. Presentation: 26/04/99 191 p. Advisors: Ana Cristina Bicharra Garcia (UFF) and Clarisse Sieckenius de Souza

Abstract: Design has been one of the most frequent themes in Artificial Intelligence research because of its complex and constructive nature. However, different perspectives on design knowledge representation have adopted by the different approaches. As a consequence, it is hard to reuse knowledge from different approaches in the development of knowledge-based design systems. This type of problem has motivated a growing interest on ontologies in knowledge engineering. A design ontology identifies and defines the concepts and relations frequently present in the design problems. The ontology concepts and definitions may be reused by the different approaches, reducing the costs of knowledge-based systems development. This thesis presents a design ontology that integrates requirements, artifacts and process design knowledge. Requirement knowledge describes the desired features of the design product and process. Artifact knowledge describes the components, the design product and their parts. Process knowledge describes the different strategies used by the designers during the design process. The broad view provided by the ontology reveals important aspects to be considered for those interested in acquiring, representing and sharing design knowledge.

Geiza Hamazaki da SILVA. "Um estudo em síntese construtiva de programas utilizando lógica intuicionista". M.Sc. Diss. Presentation: 05/11/99 160 p. Advisor: Edward Hermann Haeusler

Abstract: A major issue in computer science is to assure that a program implementation satisfies a formal specification. In order to deal with such problem several methods have been proposed. In this work we show a method, named Constructive Programs Synthesis, which enables us to obtain a program from its specification. Thus, such a program would be correct by construction. The process of synthesis tries to construct a program in an imperative language from its specification, which is used to produce a proof by an Intuitionistic First-Order Theorem Prover using Natural Deduction as deductive system. Once we get the proof, we can extract the program by the association of each inference rule with commands in the imperative program language. Afterwards, we show that the generated program obeys the specification.

Georgia Regina Rodrigues GOMES. "Um ambiente para integração de dados bibliográficos baseado em mediadores". M.Sc. Diss. Presentation: 29/09/99 100 p. Advisor: Rubens Nascimento Melo

Abstract: Library systems are an important instrument on all levels of research, whether it be scientific or not. It is becoming more and more necessary to integrate these systems and to make it easier for users to search bibliographical references and in many cases the work itself. Integrating, making available and visualizing data is an area of quite intense research in data banks. This dissertation proposes a software architecture capable of integrating library systems that are different, heterogeneous and widely distributed in their software and hardware environments by offering users a transparent, uniform view of all the libraries that make up the integration model. Our architecture is based on the technology of Mediators and Wrappaers, the former being in charge of managing and integrating the bibliographical data stored in each system and the latter responsible for retrieving the data requested at each data source.

Isabela Cordeiro Ribeiro MOURA. "Um ambiente para o suporte ao projeto e implementação de sistemas de informação baseados na WWW". M.Sc. Diss. Presentation: 30/06/99 272 p. Advisor: Daniel Schwabe

Abstract: This paper presents an environment that supports the development of WWW applications designed with OOHDM. This environment allows direct mapping of navigation and interface constructs of OOHDM into a library of functions in the CGI scripting environment CGLua, extended with the DBLua package. Using this environment, hypermedia applications are implemented, as CGI scripts that produce dynamically generated pages, whose contents are fed from a database and integrated with pre-defined templates. The environment also allows the "compilation" of an application, creating an off-line version of the application, suing static pages instead of dynamically generated pages.

Juan Eduardo DURÁN. "Desenvolvimento transformacional de algoritmos em redes baseados em álgebras relacionais". Ph.D. Thesis Presentation: 20/10/99 137 p. Advisor: Armando Martín Haeberer

Abstract: In this thesis an approach for the transformational development of imperative network algorithms is presented which mainly bases on relations and their algebraic properties. It decomposes a development into three phases, viz. an optimization specification derivation, an abstract recursive algorithm development, and, finally, a concrete algorithm calculation using refinement and datatype representation. Optimization specifications have an explicit form and base mainly on the modeling of datatypes within relational algebra. For the derivation of abstract algorithm existing methods are adapted and extended by a derivation of feasible object set algorithms from an abstract object set specification. Finally, for the derivation of a concrete algorithm that computes only one optimal solution the refinement of optimization problem specifications, of relational terms, and of abstract algorithms is applied. These refinement steps are combined with transition from relational to functional notation and a suitable representation of datatypes.

Luidi Xavier FORTUNATO. "2BUYNET - Um framework para instanciação e administração de lojas para a Internet". M.Sc. Diss. Presentation: 28/07/99 104 p. Advisor: Carlos José Pereira de Lucena

Abstract: This dissertation presents a software development approach for the construction of electronic commerce websites. At first, problems and features related to the domain application are discussed. The dissertation also presents some existing software tools for webstore creation, their proposed solutions and the approach they use to implement their features. Based on these comparisons we have developed a framework called 2BuyNet. The framework constitutes an original software engineering approach for the development of electronic commerce sites. This dissertation describes the design rationale for the framework structure, as well its pros and cons. As an exercise of the use of the framework an application also called 2BuyNet has been instantiated, using the Web as the interface. This application has been published on the Internet and works both as a web store generator service and a web store administrative tool.

Luiselena Luna ESMERALDO. "Frameworks para projetos de aplicação hipermídia". M.Sc Diss. Presentation: 19/05/99 213 p. Advisor: Daniel Schwabe

Abstract: This paper describes the notion of framework to hypermedia application designs, suggesting a notation to specify these frameworks and show how to use them by three examples of real hypermedia application projects: forums, virtual stores and on line publications. OOHDM is the method used to design the frameworks. With these frameworks, we intend to show that is possible to reuse the hypermedia applications to minimize the complexity of design hypermedia applications. Another purpose is to legitimate some hypermedia patterns described to navigation projects, using them in the proposal frameworks.

Marcela Ozório SUAREZ. "O modelo de I/O baseado em streams aplicado ao desenvolvimento de aplicações gráficas orientadas a eventos". M.Sc. Diss. Presentation: 16/04/99 63 p. Advisor: Roberto Ierusalimschy

Abstract: The objective of this work is to evaluate the fitness of the stream-based I/O model for the development of event oriented applications. Initially some aspects of the functional programming and its advantages over the procedural programming are presented. The difficulties found in the accomplishment of I/O in functional languages are presented and the well-known alternatives to overcome this problem are described. One of the alternatives described is the stream-based I/O model used in lazy functional languages. An analogy between this I/O model and the event oriented model is presented. This analogy, based on the asynchronous mechanism found in both models, leads to the hypothesis that the stream-based I/O model can be suitable to the development of event oriented applications. In order to prove this hypothesis, a small library was developed for the implementation of graphic event oriented applications. For the accomplishment of this experiment, an interpreter for a lazy functional language with syntax similar to the Scheme language was implemented. The library was implemented in this language called Scheme Lazy. The interpreter construction was based on the lambda calculus and combinators theories. Finally, the difficulties found in the accomplishment of the experiment and the conclusions of this work are presented.

Marcelo Henrique B. SANT'ANNA. "Circuitos transformacionais". Ph.D. Thesis. Presentation: 14/04/99 157 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Software transformation systems allow the structural and semantic change of software. This category of systems has been successfully applied to several distinct software engineering tasks. Following a pragmatic approach, this research work builds upon Draco paradigm seminal ideas by developing prototypes for transformation systems and applying them to some experiments. Such experiments explore distinct avenues for the evolution of the area, with a particular emphasis on software architecture issues. The results gathered from the experiments are then analyzed and compared to what have been presented by other researchers. Departing from this analysis, an architecture description language for software transformers is proposed. Such language works around the concept of Transformational Circuits (TCs). The idea of a TC is presented on this thesis and it represents an attempt to put together results from the transformation systems and software architecture communities.

Marcus Antonio Almeida RODRIGUES. "Um framework para a provisão de serviço de multicast em ambientes genéricos de comunicação de dados". M.Sc. Diss. Presentation: 21/05/99 136 p. Advisor: Luiz Fernando Gomes Soares

Abstract: Since most of the solutions available as candidates to the implementation of a multicast service have been designed to fit specific infrastructure conditions or service characteristics to which they are aimed, or, still, to fit management politics for user groups, the present work introduces a framework for designing a multicast service whose main features are its generality and independence toward possible communication systems and applications. This framework allows the implementation of specific multicast services in a fast and organized way, by reusing the whole generic structure presented, in addition to the configuration of some service components. The framework consists of two basic services: a group management service, and a support service to the construction of the multicast distribution infrastructure. Its use is illustrated by the implementation of broker agent for centralized group communication, applied to a video distribuition service.

Marcus Felipe Montenegro Carvalho da FONTOURA. "Uma abordagem sistemática para desenvolvimento de frameworks". Ph.D. Thesis. Presentation: 23/07/99 167 p. Advisor: Carlos José Pereira de Lucena

Abstract: English abstract not provided.

Maria Alice Silveira de BRITO. "Uma arquitetura orientada a objetos para integração das facilidades de concorrência, transação e persistência". Ph.D. Thesis. Presentation: 17/03/99 222 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: This work describes an object-oriented architecture for integrating concurrency, transaction and persistence. In the context of long-lived activities, consisting of components controlled by

transactions that may commit individually (*workflow*), showing cooperative characteristics rather than traditional competitive characteristics, we identified two major necessities: i) the flexibility to extend a new transaction and to make possible the co-existence of transactions with different policies and protocols in the same object and ii) the interaction capabilities between application and transactions and among transactions. Existing tools are difficulty to use and are sometimes unsuitable for the combination of paradigms we are considering. We explore abstract data types and inheritance to achieve the expected flexibility, encapsulating all objects employed in mechanisms to integrate transaction at application. We adopt the local atomicity and active object concepts, and design an architecture based in three major classes: object manager, transaction manager and application object, the latter associated to a monitor (a metaobject). To achieve the co-existence among transactions with different policies and protocols we isolated synchronization aspects in the monitor's concurrency control tasks, enabling the representation of the negotiation among policies. To simplify interactions we designed architecture elements with flexibility in mind, thus allowing extensions in functionalities and interfaces, and also avoiding the creation of new programming languages primitives.

Maurício Riguette MEDIANO. "Um método para indexação de estruturas topológicas em banco de dados geográficos". Ph.D. Thesis. Presentation: 23/04/99 92 p. Advisor: Marco Antonio Casanova

Abstract: This thesis introduces a new method, called TDA (Topological Data Structure), for the topological indexing of spatial attributes in geographic databases. Basically, the TDA method maintains a topological data structure for each set of spatial attributes for which one wishes to optimize the calculation of topological operators. The topological data structure, which is internally manipulated by the geographic database manager system, is responsible for generating the faces, vertices, and edges that compose the topological representation of each spatial attribute. The TDA method is responsible for updating the topological representation of each attribute whenever the database is updated. The dimension of each of the nine intersection between the inside, the border, and the outside of two spatial attributes can be efficiently calculated by means of the topological representation of the spatial attributes, and by sweeping the topological structure. The TDA method replaces the calculation of topological operators based on the geometry of spatial attributes.

Néstor Adolfo Mamani MACEDO. "Integrando requisitos não funcionais aos requisitos baseados em ações concretas do SERBAC". M.Sc. Diss. Presentation: 26/04/99 153 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: This essay proposes the integration of NFR (Non-Functional Requirements) to the requirements based on Serbac's Concrete Action. This approach takes into consideration the business as a whole, to which is applied the Business Strategic Planning for Environment Analysis. For requirement elicitation, we make use of the Serbac Model as a baseline. Over this model a specialization is made to the "attribute requirements", the information item of several SERBAC components, into "quality NFRs" and "comprise and operation NFRs". The strategy proposed has two alternatives: (i) to search for the places where it may be possible to find NFRs, using the Business Model by structured analysis, and (ii) to establish a repository of "quality NFRs", organized in accordance to each stakeholder's viewpoint. Each viewpoint has *primary quality NFRs* (PQN), and each PQN has a set of specific quality NFRs (SQN). On the other hand, each SQN holds a list of satisfaction strategies (LSS).

Newton Cunha SANCHES. "Estruturas de dados temporárias para processamento de consultas espaciais". M.Sc. Diss. Presentation: 30/03/99 76 p. Advisor: Marcelo Gattass

Abstract: This paper presents a study on efficient query processing in spatial database systems. Spatial queries often demand the chained execution of many selections and joins. This situation poses the need for mechanisms capable of holding results of an operation and sending them to the next one. In this work we briefly present some indexes and algorithms used for executing spatial selections and joins, and also some ways of chaining those operations. Next, we propose a hierarchical data structure with low construction cost which is used to store datasets originated in spatial selections. We compare its performance to some indexes' and to other data structures designed for holding temporary results. This comparison is done using geographic and randomly generated datasets.

Paula FREDERICK. “Visualização eficiente de objetos gráficos”. M.Sc. Diss. Presentation: 01/07/99 p. Advisor: Marcelo Gattass

Note: Not yet available, by the time this compilation was concluded.

Paulo Cesar Rodacki GOMES. “Prototipação virtual em modelagem de sólidos distribuída”. Ph.D. Thesis. Presentation: 03/05/99 94 p. Advisor: Bruno Feijó

Abstract: This dissertation presents the concept of Virtual Prototyping in Distributed Solid Modeling as a way to develop more effective CAD systems. Questions about geometric modeling, distributed computing, constraint solving and online algorithms are discussed in this work. Also presented is a distributed architecture for the virtual prototype based on the concept of dynamic agents. The dynamic agents are supported by a Geometry Bus, a CORBA model, and LuaOrb, a binding between the CORBA’s Dynamic Invocation Interface and the extension language Lua. According to a special graph defined by the author called the Extended Constraint Graph, reactivity amongst agents can be defined by complex and nonlinear relations which can be changed at run time. This architecture is implemented by an online algorithm that is recursive and distributed.

Paulo Roberto Celidonio CAROLI. “Uma metodologia de projeto de software orientado a objetos”. M.Sc. Diss. Presentation: 22/12/99 116 p. Advisor: Carlos José Pereira de Lucena

Abstract: In spite of the increasing utilization of the Object Oriented paradigm, there still exists reluctance on its application in the development of systems as, for example, Web Information Systems. In this type of applications, User Interfaces are in general event oriented and the majority of the Databases are Relational. This work proposes a Three-Tier Architecture for the development of systems that can be naturally divided in User Interface, Business and Persistence layers. It also proposes a Methodology for the development of the Business layer. The objectives of this work are: to help management to keep up with the project development; facilitate the maintenance of large systems subject to modification and evolution; help communication among the persons in the development team; provide Object Oriented development support coexisting with other paradigms; serve as an effective documentation. Applying the concepts here put forth in real projects validated the work.

Pedro Paulo de Magalhães OLIVEIRA JUNIOR. “Exames virtuais utilizando um algoritmo de Ray Casting acelerado”. M.Sc. Diss. Presentation: 07/12/99 62 p. Advisor: Marcelo Gattass

Abstract: This work presents a study on virtual exams, which are techniques for visualizing the inner part of the human body using volume visualization techniques for clinical evaluation purposes. The virtual exams aim at being an alternative for conventional digestive endoscopy, colonscopy, and bronchoscopy exams. We present a comparative study between virtual exams and their analogue conventional exams, analyzing advantages and disadvantages of each of the techniques. We also propose an algorithm for accelerating volume visualization with ray casting, and compare the results obtained with other optimization techniques.

Pedro Santos RIPPER. “VMarket: um framework para sistemas de comércio eletrônico voltados para mercados virtuais mediados por agentes de software”. M.Sc. Diss. Presentation: 15/06/99 77 p. Advisor: Carlos José Pereira de Lucena

Abstract: Software agent technology is still an emerging technology, and as such, agent based software design is still in its infancy. Software agents have just started to be used in the e-commerce domain, and they are already starting to create a series of new possibilities to this arena. Agents can be used to automate as well as to enhance many stages of the traditional consumer-buying behavior process. Through the minimization of transaction costs, elimination of geographic barriers and time issues, many new markets, not viable before, are now being created, traditional markets are being made more efficient, and the role of the middleman is drastically changing. This dissertation proposes a software approach to the design of agent mediated e-commerce systems, through the definition and implementation of a object oriented framework. This framework focuses mainly in e-commerce applications based on virtual marketplaces. A virtual marketplace is nothing more than an internet based

system, where software agents interact and negotiate, on behalf of their respective users, to buy, sell or find specific goods. In this type of system, all users can be potential buyers, sellers or both, depending on their specific interests. The main goal of Vmarket is to facilitate the creation of this type of applications, as well as to make them more robust and flexible. It is expected that this approach will greatly enhance the process of experimentation and research on the new possibilities brought by software agents to the e-commerce application domain. Vmarket should give developers the ability to customize virtual marketplaces and define transaction categories on demand incorporating many possible products and services that can be trated online. Its user can create new transaction types and items on individual needs and in the process create customized software agents that can recognize and adapt to the new products and services being offered. Software agents in VMarket will pro-actively broker and negotiate with interested and sellers, represented by their respective agents. They can be created with any set of desired behaviors, thereby enabling the consumer to have a virtual presence in the marketplace to further his or her interest, while freeing the consumer from constant monitoring of market progress.

Regina Célia Moreth BRAGANÇA. "Cálculo de seqüentes e dedução natural: relacionamentos e conseqüências". Ph.D. Thesis. Presentation: 21/05/99 126 p. Advisor: Edward Hermann Haeusler

Abstract: We construct a new system of Segment Calculus, the Natural Sequent Calculus - NSC, which allows us to convey a fundamental concept in Natural Deduction to the Sequent Calculus. With this strategy, we may think in the relationship between the Sequent Calculus and Natural Deduction under a new perspective. Using this technique we establish a system of Cut-free Natural Sequent Calculus, to Constant Domain Logic - DC.

Sean Wolfgand Matsui SIQUEIRA. "Uma arquitetura database marketing utilizando Heros - SGBDH". M.Sc. Diss. Presentation: 30/09/99 85 p. Advisor: Rubens Nascimento Melo

Abstract: Database Marketing refers to the use of database for supporting marketing activities. Data from several sources, possibly heterogeneous, need to be integrated and a set of tools/processes make necessary analysis and marketing strategy implementation (and manage) possible. Integration of heterogeneous data sources, in the database community, is treated through the heterogeneous database management systems study. In this work, it is proposed a database marketing architecture that uses the heterogeneous database management system (HDBMS) technology for the integration of several heterogeneous sources. The HDBMS used in the proposed architecture is called HEROS and it is in development in the Computer Science Department at PUC-Rio. The database marketing and HDBMS fundamental theoretical concepts are analyzed and correlated. A systematic of use of the architecture proposed as well as a case study that uses the proposed systematic are presented.

Sérgio COLCHER. "Um meta modelo para aplicações e serviços de comunicação adaptáveis com qualidade de serviço". Ph.D. Thesis. Presentation: 22/11/99 114 p. Advisor: Luiz Fernando Gomes Soares

Abstract: One of the main challenges posed to the telecommunications services operators is to develop a single infrastructure to support the integration of a wide range of services and to allow for the rapid creation, alteration and continuous adaptation of these services to new evolving conditions or demands. The variety of requirements and the rapid evolving technology impose many difficulties, specially when the goal is to develop services based on a limited number of pre-defined options. This work presents a model in which communication services platforms will be constructed to support some kind of *adaptability* in order to meet the wide range of different demands, the presence of run-time changes in applications and the rapid evolving technology. The model provides some basic abstractions for the representation of multicasting and Quality of Service (QoS) within multimedia communication services and is based on the *pipes-and-filters* architectural style. Pipes correspond to the explicit representation of connections between components (the filters) that, in turn, represent the active processing elements of a service implementation. QoS specifications can be associated to pipes, which are then called *MediaPipes*. MediaPipes correspond to an abstract programming entity for the QoS treatment and also allow for the exposure of internal implementation details whenever adaptations are necessary.

Sérgio da Costa CÔRTES. "Regras ativas em sistemas de banco de dados: sintaxe, semântica e processamento distribuído". M.Sc. Diss. Presentation: 29/04/99 144 p. Advisor: Sergio Lifschitz

Abstract: Active rules enable the development of non-conventional database applications, providing support to a semantics that reflects behaviour based on events. On one hand, many researches were carried out, and active database systems were turned available, but several important proposals were only partially implemented. On the other hand, making use of active rules on a distributed environment enables greater expressiveness, but there is a considerable increase on the system's complexity. In this dissertation, we will discuss a semantic and syntactic extension for the construction of active rules on database systems which comprises several situations involving applications not yet completed by the existing systems. Furthermore, we propose a control scheme for the execution of this extended model of active rules on a distributed database, which satisfies the requirements of transparency and correctness on this environment.

Simone de Lima MARTINS. "Estratégia de paralelização de metaheuristicas em ambientes de memória distribuída". Ph.D. Thesis. Presentation: 27/07/99 148 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: We present an analysis of metaheuristic parallelization strategies in distributed memory environments. Some related issues are studied by implementing some parallel algorithms based on metaheuristics to solve specific problems. We concentrate our work in environments composed of workstations connected by communication networks, due to their low cost and high availability. We compare some software tools useful to develop parallel programs in there in order to show their characteristics in terms of ease of use and performance. We analyze three metaheuristics: VNS, GRASP, and tabu search. We compare two software tools using different paradigms: PVM and Linda, used to implement a parallel tabu search for the circuit partitioning problem. We show two parallel GRASP algorithms developed to solve the Steiner problem in graphs using two different local search strategies. We present numerical results showing the quality of solutions obtained, execution times, and the speed up achieved by the parallel GRASP algorithms.

Simone Diniz Junqueira BARBOSA. "Programação via interface". Ph.D. Thesis. Presentation: 05/05/99 109 p. Advisor: Clarisse Sieckenius de Souza

Abstract: In the past few years, we have witnessed an increase in software functonality as an attempt to meet most users' needs. This approach brings serious usability challenges, due to an increase in application complexity as well. In order to try and meet users' needs, without overloading the application with functionality that is rarely used, there is a tendency to allow end users to configure or program applications, by means of mechanisms that support the so-called *end user programming*. However, many existing techniques fail to attain acceptable thresholds of usefulness and usability. This work addresses some of the challenges posed by extensible applications. We follow an approach that drops some walls between interface and extension. This approach brings some extension mechanisms to the interface, and readily accessible to end-users, namely extensions based on the semantic-pragmatic resources of metaphors and metonymies. These mechanisms were chosen due to the acknowledgment of the Cognitive Sciences of their critical role in our reasoning processes, especially when we try to describe or understand complex or abstract concepts. (Lakoff e Johnson, 1980; Lakoff, 1987; Lakoff, 1993; Ortony, 1993). We describe an extensible application model that makes use of a knowledge base in which we represent the domain and application elements that may be extended, as well as the necessary classifications for calculating the possible extensions. Our model takes into account the communicative aspects of computer applications, and follows Semiotic Engineering (de Souza, 1993) principles to guarantee the consistency between the original application and the extended one. For that purpose, our model entails the representation of rules that constrain interface amendments, so that extended functionality is adequately reflected at the resulting interface.

Simone Maria Bacellar Leal FERREIRA. "Uma arquitetura para associação de usuários a interfaces". Ph.D. Thesis. Presentation: 31/04/99 142 p. Advisor: Sergio Eduardo Rodrigues de Carvalho

Abstract: In order to take care of the necessities of the users, the process of development of user's interface must be centered in the user. The user must be analyzed in order to get its features; features these that constitute the "model or profile of users". This model allows the construction of more

powerful interfaces, capable to take care many expectations of the users, that is, to offer to different levels of functionality according to the necessities of each person. The present work goals the development of an abstract architecture that makes possible the instantiation of user's interfaces for different types of users and different systems. In the present architecture, profiles of users are part of software. The architecture contributes the design of interfaces with the objective to satisfy the necessities of the users, supplying adaptation mechanisms in time of execution to users that improve its knowledge on the application, becoming more ambitious. To these, the architecture considers a new interface, thus presenting an agency feature.

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Alex Vasconcellos GARCIA. "Um modelo categórico para traduções entre linguagens de programação". Ph.D. Thesis Presentation: 26/05/00 135 p. Advisor: Edward Hermann Haeusler

Abstract: This thesis proposes a categorical model for programming languages. This model is used to establish a formal condition that a translation should satisfy in order to preserve program maintainability throughout the translation process. For this purpose, we start from a categorical model proposed by R.F.C. Walters for context-free languages. In order to establish the criterion for preserving maintainability, it was necessary to introduce semantics for the categorical models of context-free languages. The examples shown illustrate that the arrows semantics (arrows are models of derivation pieces) is related to preservation of program maintainability. We believe that the technique we developed, not only applies to the problem studied in the thesis, but also brings an important insight regarding the semantics of programming languages and the way in which the programmer's intention is related to the syntactical structure of a program.

Alexandre Plastino de CARVALHO. "Balanceamento de carga de aplicações paralelas SPMD". Ph.D. Thesis Presentation: 31/03/00 138 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: Parallel algorithms are designed based on two programming models: functional parallelism and data parallelism. The second model, when used in parallel architectures with no instruction level synchronism, is known as SPMD (Single Program, Multiple Data). In SPMD applications, the same code is executed on different processors, over distinct data sets. This model has attracted the attention of programmers and researchers due to its simpler and clearer parallel programming structure. On the other hand, it requires considerable effort in order to identify an ideal load-balancing algorithm for the application under development. The difficulty in this identification is partly related to the large variety of existing strategies. A suitable strategy choice permits controlling efficiently the effect of different dynamic imbalancing factors, present in many parallel applications and environments. This thesis presents instruments to support the development of SPMD applications, with special emphasis on the identification of an appropriate load-balancing strategy. A taxonomy of load-balancing algorithms designed for SPMD applications is proposed. Its standard terminology allows the classification and well-organized comparison of a large number of existing strategies. The central contribution of this thesis is an environment for SPMD applications development, called SAMBA (Single Application, Multiple Load Balancing). The proposed tool generates SPMD applications with load balancing from, basically, the routines that create and execute the SPMD tasks coded by the programmer. The provision of the common structure of SPMD applications and of a load-balancing library allows the programmer to concentrate on his/her specific problem and reduces programming effort. Different versions of the application can be generated, one for each strategy available in the load-balancing library. In this way, the designer can test and compare different strategies for the same application, at no extra programming cost. In order to validate the proposed development environment, the thesis presents the analysis of different load-balancing algorithms in the context of three SPMD applications, developed using SAMBA: Matrix multiplication, function integration and genetic algorithm. The work also includes the definition of a framework for the development of SPMD applications with load balancing, originated from the experience obtained with the development of the proposed environment.

Ana Elisa Ferreira SCHIMDT. "Visualização tridimensional combinada de dados volumétricos e modelos poligonais usando o algoritmo Shear-Warp". Ph.D. Thesis Presentation: 28/04/00 109 p. Advisor: Marcelo Gattass

Abstract: This thesis presents a study on the integration between Shear-Warp and Z-Buffer algorithms, and extends the Shear-Warp algorithm to handle scenes composed of both volume and polygonal data. Shear-Warp techniques provide an efficient way to perform the projection and blending stages of the volume-rendering process. They treat volume-data slices in a coherent order and can be naturally integrated with the Z-Buffer algorithm. We present methods to handle opaque/translucent volumes combined with opaque/translucent polygonal models. As volume data usually has a different resolution from that of the final image, in which Z-Buffer renders the polygonal data, several variants for this integration that try to reduce aliasing problems are analyzed. Results are shown to support some conclusions on the trade-off quality-versus-time that can be expected.

Ana Lucia de MOURA. "Um ambiente de suporte à adaptação dinâmica de aplicações distribuídas". M.Sc. Diss. Presentation: 28/09/00 88 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: Component-based programming is presently an important trend for the development of distributed applications, allowing complex systems to be constructed by combining several independent and reusable components. These components implement specific services accessed through interfaces that traditionally define only *functional* requirements - such as operations signatures - and abstract the *non-functional* properties of the offered services, such as performance, security or availability. However, the increasing demand for distributed applications that are able to meet *non-functional* requirements like the ones listed above, and the dynamic behavior presented by the execution environment of these applications, impose that not only middleware platforms, but also applications, dynamically adapt to the state of their execution environment. For that to be possible, it is essential that the applications be able to handle the non-functional properties of the services provided by their components. The purpose of this work is to offer an environment that supports the dynamic adaptation of distributed applications to variations in the non-functional properties of the services provided by their components. For that we developed facilities and mechanisms that allow applications to dynamically select the components that best suit their requirements, verify if these requirements are being met, and react, when appropriate, to variations in the non-functional properties of the services in use.

Ayrton MAIA NETO. "COMMERCEPIPE - Um framework para criação de canais comerciais consumer to business na Internet". M.Sc. Diss. Presentation: 16/06/00 103 p. Advisor: Carlos José Pereira de Lucena

Abstract: Based on the study of different electronic commerce software applications and principally inspired by the research work and software evolution carried out in the Vmarket framework, this dissertation presents the Commercepipe Object Oriented Framework as an alternative for the instantiation of Consumer to Business Virtual Markets on the Internet. Using Software Agents Technology combined with the WAP (Wireless Application Protocol) as a wireless interface to access Internet services, the framework proposes a new approach for C2B markets, bringing a new vision of how sellers and buyers can interact commercial transactions through the Internet.

Bruno Cavalcanti MUNIZ. "Notificação e controle de versões para o suporte à autoria cooperativa no sistema HyperProp". M.Sc. Diss. Presentation: 28/08/00 126 p. Advisor: Luiz Fernando Gomes Soares

Abstract: It is important to a hypermedia authoring system to support simultaneous document editing, done by several authors, in an adequate and efficient way. To accomplish that, hypermedia systems incorporate version control mechanisms integrated to notification schemes, which inform authors about significant events related to creation and editing of versions. This work specifies notification control mechanisms for the Nested Context Model (NCM), which were implemented within the hypermedia authoring system HyperProp. It is important to observe that these mechanisms can be adapted to other hypermedia models based on compositions and offering version control functionality. In addition, an implementation of the NCM version control is also presented, enabling, among other facilities, the graphical visualization of hyperdocuments history in the HyperProp system.

Carlos Bazílio MARTINS. "Detecção de paralelismo a partir da semântica denotacional e de grafos de dependências". M.Sc. Diss. Presentation: 12/05/00 91 p. Advisor: Edward Hermann Haeusler

Abstract: This work propose a generic architecture that generates parallel automatic code from sequential programs. In literature this subject is called implicit parallelism. The architecture has a target language's denotational semantic specification and an example code in such a language as its input. The output is a parallel code in the same abstraction level as the original sequential code. Intermediate co de generation with parallel constructs (cobegin/coend, forall,...) is one of the intermediate steps. This code is processed to be instantiated to a particular machine. Our implemented prototype processes the C language and generates multithreaded programs from sequential ones.

Carlos Roberto Serra Pinto CASSINO. "Distribuição de carga em sistemas Web controlada por ferramentas de construção de páginas dinâmicas". Ph.D. Thesis Presentation: 19/12/00 81 p. Advisor: Roberto Ierusalimschy

Abstract: Load distribution among several servers is a scalability solution typically adopted in Web sites. E-commerce applications, among others, use dynamic pages to offer sophisticated services, demanding even more processing power from those servers. This sophistication imposes some constraints to the load distribution mechanism, such as fixing some clients on some servers, diminishing the performance of the distribution. Our thesis is that integrating the load distribution control into the dynamic page construction tool allows the use of internal information of the tool, and therefore a more effective control of the distribution and more efficiency. In this work we propose a load distribution model in which the page construction tool controls, by manipulating the embedded links of the generated pages, the distribution of the clients among the servers. Since this load distribution model differs from other existing models, a relevant part of our work is the implementation and analysis of a prototype. With this prototype, we could analyze the performance of some load sharing algorithms, the behavior under overloads, and others. This analysis shows that this distribution model achieves a good performance when compared to other models commonly adopted. Moreover, this integrating model is able to handle the constraints imposed by the dynamic applications, such as client fixing and distribution guided by classes of requests.

Christian Jacques RENTERIA. "CN: dedução natural para CLT". M.Sc. Diss. Presentation: 09/05/00 74 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: CLT (Computation Tree Logic) is a used both for the synthesis and for the verification of concurrent programs. Usually presented in the Hilbert style (axiomatic), it has been adapted for sequent calculus, but without normalization. The aim of the present work is to present a Natural Deduction system for CLT. For that reason the original language has been modified, and labeled formulae have been used. It has been proved that the system is correct and complete. Then the possibility of normalizing the proofs is studied and it is seen, as expected, that strong normalization is achieved in the system without the induction rule.

Clécio Radler dos GUARANYS. "e-BusinessCard: um framework para Smart Cards". M.Sc. Diss. Presentation: 28/09/00 p. Advisor: Carlos José Pereira de Lucena.

Note: Not available.

Fernanda Victal MESQUITA. "Suporte ao desenvolvimento de aplicações SPMD". M.Sc. Diss. Presentation: 07/01/00 60 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: This work describes the implementation of a prototype of SAMBA (Single Program Multiple Balancing). SAMBA is a tool that supports the development of SPMD parallel programs. It is basically intended for applications where the execution of each task is totally independent of the others. SAMBA also supplies a library of load balancing algorithms to manage the distribution of the workload between the parallel processes.

Fernando Náufel do AMARAL. "RETOOL - uma lógica de ações para sistemas de transição temporizados". M.Sc. Diss. Presentation: 09/05/00 117 p. Advisor: Edward Hermann Haeusler

Abstract: This dissertation defines RETOOL, an action logic featuring an operator to denote necessary conditions and postconditions of actions in a timed transmission system (an extension of the formalism of transition systems meant to model real-time reactive/concurrent computational systems). A semantics for RETOOL is presented and compared to previous proposals. An adequate axiomatization is given, along with detailed correctness and weak completeness proofs.

Flávio Corrêa de FREITAS. "Uma proposta de arquitetura para comparação de junções paralelas". M.Sc. Diss. Presentation: 27/09/00 70 p. Advisor: Sergio Lifschitz.

Abstract: The performance comparison of parallel strategies for the join operation is difficult because they are implemented in many distinct environments. Benchmarks and test environments mentioned in the literature make use, in general, of both not opened hardware and software or even simulations of DBMS' operations. This work discusses the existing environments that evaluate and compare parallel join strategies, including their implementation resources, software tools and available comparison, named ARCOJP (Architecture for Comparison of Join in Parallel), is proposed here. It may instantiate many functionalities of the known approaches and uses a local DBMS (Minibase) at each processing node. An implementation of ARCOJP is detailed, which runs in a PC cluster running Linux and MPI. Some preliminary comparison results are also given for a few selected strategies.

Flávio Spolidoro Ferreira GOMES. "Uma arquitetura distribuída para a construção de aplicações de gerência de rede." M.Sc. Diss. Presentation: 18/12/00 108 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: The growth of corporative networks and the different kinds of network platforms require more and more the use of scalable network management applications and make possible the integrated management of different platforms. By exploring the resources of an interpreted language, this dissertation presents a distributed network management application with monitoring functionalities and asynchronous events reception functionalities. It also explores the advantages of a Web-based network management application, which we built aiming at testing this architecture.

Isabel Leite CAFEZEIRO. "Compartilhamento e semântica denotacional". Ph.D. Thesis Presentation: 12/05/00 113 p. Advisor: Edward Hermann Haeusler

Abstract: This thesis presents the fundamentals of a metalanguage for Denotational Semantics, with the purpose of expressing the concept of sharing. The approach consists in a generalization of some of the usual operators of Denotational Semantics to a shared version. Category Theory is used to the definition of the operators as continuous bifunctors. The categories used have, as objects, Scott-Ershov Domains. The fixed point for equations written with the operators is ensured. Two cases studies are presented, showing that the operators are compatible with the usual presentation of Denotational Semantics. The first case study considers sharing at the syntactical level, whereas the second concerns the semantic level.

Jaime de Melo SABAT NETO. "Integrando requisitos não funcionais a modelagem orientada a objetos". M.Sc. Diss. Presentation: 29/03/00 206 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: Non-functional requirements (NFRs) are restrictions or quality attributes of systems or system development processes. NFRs were presented a long time ago and are now part of several requirements engineering syllabus. However, the majority of software engineering methods in general and requirements engineering methods in particular don't take into account NFRs. Hence, we propose, in this work, the OONFR strategy. This strategy uses, as input, a Language Extended Lexicon of the Universe of Discourse (LEL of UofD) and produces a class diagram which has indications of classes, attributes, operations and relationships that specializes NFR satisfaction strategies and satisfies NFRs. The OONFR strategy includes the following activities: build a Language Extended Lexicon of the Universe of Discourse-NFR (LEL of UofD-NFR), build scenarios and build a class diagram. In this work, we also present a tool, that gives support to the usage of the OONFR strategy, and three case studies, which carried out in order to achieve an initial validation of the strategy.

José Antonio F. de MACEDO. "Um estudo de SGBDs baseado em agentes". M.Sc. Diss. Presentation: 02/10/00 72 p. Advisor: Sergio Lifschitz

Abstract: There are applications that ask for extensions and configurations of DBMSs functionality's in order to supply new demands. The construction of DBMSs that satisfy these multiple needs is difficult due to the diversity of application domains. The software agents research area deals with the definition

of systems that execute in heterogeneous, distributed and dynamic environments, mostly used in application domains where the reactivity factor is important. These agents properties can be applied to the DBMSs context so to facilitate their extension and configuration. The present dissertation proposes a new paradigm for DBMSs that consider the use of agents in their architectures: Agent-based Databases. This work studies and proposes three DBMSs architectures based on agents called integration architectures. One of these architectures is implemented and discussed so to evaluate in practice our approach in the context of the execution of parallel joins and load balancing.

Karin Koogan BREITMAN. "Evolução de cenários". Ph.D. Thesis Presentation: 12/05/00 153 [+53] p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: In recent years, a growing number of researchers have turned to scenarios to improve communication among the stakeholders of a computer-based system under construction. Scenarios are informal descriptions of situations in the system environment and help the elicitation and validation of information during all stages of system development. On the other hand, the informality of scenarios allow them to be used without any specific methodological support. This aspect, that has been pointed out specially by the Requirements community has been given little attention and makes the systematic use of scenarios in software practice more difficult. To understand what is required for effective use of scenarios in system development, we have conducted a series of empirical case studies that shed light on the complexities of scenario evolution. As a result of these case studies, we have produced a model of scenario evolution that explains the dynamics of the evolutionary process while providing a multi-tier approach to scenario evolution, based on operations and relationships of the model. This thesis proposes an organization that allows an engineering approach to scenario evolution. The organization is based on domain knowledge embodied in the scenario evolution model and takes into consideration other software management issues, such as configuration management and traceability. The organization implies a framework for scenario evolution that can be used in any open-ended, general software development environment. This framework can be configured, through the use of hot spots, to tailor specific user needs. We also offer a prototype tool, called SET (Scenario Evolution Tool), that provides automated support to the framework.

Leandro Marques RODRIGUES. "Integração de documentos SMIL ao sistema HyperProp e desenvolvimento de ferramentas para exibição de objetos com relacionamentos de sincronização". M.Sc. Diss. Presentation: 21/11/00 118 p. Advisor: Luiz Fernando Gomes Soares

Abstract: The use of the World-Wide Web to distribute multimedia documents with temporal and spatial synchronization relationships is a research topic that has recently gained a lot of attention. The SMIL language had its recommendation published by the W3C for declarative authoring of these documents, but it has some limitations. In order to overcome these limitations, this dissertation presents the integration of SMIL documents with HyperProp, a hypermedia system based on a conceptual model called NCM (Nested Context Model). This integration allows SMIL documents to be refined with NCM facilities and manipulated in a hypermedia system with version control and high-level authoring tools. The dissertation also proposes some extensions to NCM, adding some concepts found in SMIL, in order to simplify the authoring of NCM documents with temporal synchronization relations. Finally, the dissertation presents the development of presentation tools, integrated with the HyperProp system, to control the presentation of continuous media (audio and video) and static images, supporting all temporal and spatial relations defined in the NCM model, besides user interaction relations.

Leonardo Mendonça de MOURA. "Um framework para análise e verificação de programas". Ph. D. Thesis. Presentation: 05/05/00 199 p. Advisor: Carlos José Pereira de Lucena

Abstract: Presently, program analysis and verification is at best achieved by a hand-crafted tool specific to a programming/specification language. Since the manual construction of tools is expensive, they are hard to obtain and not often used, limiting the quality of the implemented software. We have proposed a framework for the automated generation of simulation, analysis and verification tools for programs/specifications based on machine-processable formal definitions of the language's operational semantics. We also use a modular approach for language semantics that allows us to reuse semantic modules and fragments of already defined tools.

Luis Antonio Rivera ESCRIBA. "Animação baseada em física com modelos geométricos em multi-resolução". Ph.D. Thesis Presentation: 29/09/00 150 p. Advisors: Paulo Cezar Pinto de Carvalho (IMPA) and Marcelo Gattass

Abstract: The use of physical laws in the generation of animations permits the production of (or aims at producing) real effects of movements and automatic treatment of collisions. However, a number of difficulties are encountered for the efficient execution of the needed numeric computations and for the production of interesting effects, due to the geometric complexity of the objects in the animation. In this thesis, we formulate a model to generate animations based on physical models of objects with arbitrary geometry. The irregular details of the object surfaces are incorporated in the calculation of the object contacts which are found to be in collision. We use multiresolution theory based on the wavelet transformation to establish a relationship between the details of the object surfaces and the surfaces rugosity degree, using statistical estimators. This approach leads to the hierarchical construction of oriented-rectangular adapted envelopes (*MOBBtree - Multiresolution Oriented Bounding Boxe tree*). They preserve the surfaces details, allowing for a fast detection of possible surface segments in collision, that are later used to determine the tolerated contact points. The contact dynamics uses the impulse-based paradigm that, simultaneously with the rugosity degree of the local collision point, generate interesting and visually realistic animations.

Luiz Paulo Alves FRANCA. "Um processo para construção de geradores de artefatos". Ph.D. Thesis Presentation: 17/08/00 169 p. Advisor: Arndt von Staa

Abstract: An artifact generator is a software tool which produces an artifact from its high-level specification. An artifact is any item created as part of definition, maintenance or utilization of a software process. Artifact generators are a way to reduce production costs and time to market, and to increase reliability of artifacts within a given application domain. However, in order to achieve a more widespread usage of artifact generators, the difficulty and the cost of their development and maintenance must be reduced. This thesis presents a low-cost artifact generator development and maintenance process. The process departs from an example of a simple artifact within the target application domain. Given this example and considering all possible artifacts of the domain, all commonalties and variabilities are identified, as well as the properties that the specification of each specific target artifact must satisfy. The example is then modified in order to contain specific generator tags at all variable points. These tags establish the transformation rules that must be applied to the specification in order to generate the application. We have used a CASE tool, which allows the programming of the specification editors and of the generators. By means of another tool, the tagged example artifact is transformed into a component, which is combined with the transformation library, yielding the generator code to be internalized by the CASE tool. The process has been successfully used to transform specifications into applications, components and documentation.

Luís Arthur Ferreira PINTO. "Autoria gráfica de estruturas de documentos Hipermídia no sistema HyperProp". M.Sc. Diss. Presentation: 30/08/00 119 p. Advisor: Luiz Fernando Gomes Soares

Abstract: One of the most important challenges in current hypermedia systems is to provide a GUI that helps the visualization of document structure, in order to avoid the common user desorientation. This thesis proposes a graphical tool for structural navigation and authoring of hypermedia documents based on the *Nested Context Model* (NCM). The key features of this tool, a component of the HyperProp, are the information filtering mechanisms and the graph layout techniques, both used to improve the structural view legibility.

Marcelo Cabral da SILVA. "Indentificação de estilos de arquiteturas: um processo dirigido por conhecimento". M.Sc. Diss. Presentation: 18/09/00 206 p. Advisor: Julio Cesar Sampaio do Prado Leite

Abstract: One of the most recent subjects in the software engineering area, the software architecture, tries to systematize the process of design software, supplying a solid base for the reuse. As more complex systems appear, the importance of system specification and design increases. Therefore software architecture becomes an important discipline [Shaw+94]. Software architecture is related to the

system macro-structure. The architectural vision is an abstract vision of the relationship among the elements comprised by a system, as well as the topology they make up. Algorithm detailment or data representation are not the goals of this thesis. Instead, the composition of the elements that form the architectures and their restrictions will be analyzed [Bass+98]. According to our understanding, software architecture is a collection of components, connectors and their behavior restrictions. In other words, software architecture is the collection of the first decisions to be taken during the design phase of a system. In general, these decisions are the most difficult to be taken. After system development, these decisions are the most difficult ones to be modified. Our objective is to provide a method to select architectures based on a requirement list. For such we will count on a knowledge base, as well as on a method. In order to generate the knowledge base, a taxonomy will be defined and based on it relationships among elements will be identified. The collection of relationship among elements will generate architecture styles. In parallel to the architecture style identification study, we will also use concepts of the Requirements Engineering. Therefore, requirements will be used as elements of architecture classification and subsequent selection. A correlation between requirements and elements will be made, starting from each of the identified architectural style.

Marcelo Pereira BASTOS. "Busca tabu reativa paralela com religamento para o problema de Steiner em grafos". M.Sc. Diss. Presentation: 24/04/00 52 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: Let $G=(V,E)$ be an undirected graph, where V is the set of nodes and E the set of edges. Let $c : E \rightarrow \Re$ be a function which associates a weight c_e to each edge $e \in E$. Given a subset $X \subseteq V$ of terminal nodes, the Steiner problem in graph defined by G, X and c coesists in finding a connected subgraph of G spanning all nodes in X such that the sum of its edge weights is minimum. In this work, we present a tabu search algorithm that uses advanced techniques such as reactive tabu search and path-relinking. The reactive tabu search handles dynamically the tabu tenure in order to avoid cycling. The reaction and escape mechanisms used by the reactive tabu search are described. Path-relinking is an intensification strategy that seeks to incorporate attributes of high quality solutions (elite solutions) visited along the search trajectory. We define randomized algorithm based on the shortest path heuristic is proposed for diversification. Computational results are reported for benchmark instances of the Steiner problem in graphs found in the literature. The results are compared with those obtained by other heuristics. We also present a parallelization strategy for the proposed algorithm and computational results obtained by this strategy are reported.

Marcelo PRAIS. "Estratégias de variação de parâmetros em procedimentos Grasp e aplicações". Ph.D. Thesis Presentation: 07/24/00 101 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: GRASP is a greedy randomized adaptive search meta-heuristic for combinatorial optimization problems. It is an iterative process, that consists of two phases: in the first phase, a feasible solution is constructed; in the second phase, a local search is performed in order to improve the solution found at the first phase. One of the objectives of this thesis is to apply GRASP to the solution of the matrix decomposition problem that arises in the context of TDMA traffic assignment in satellite communications. Two original neighborhoods are convinced and explored in the local search phase of GRASP. Additionally, a new procedure named Reactive GRASP is proposed, where the main GRASP parameter is self-adjusted according to quality of the solutions obtained in the previous iterations. Based on the results obtained with the Reactive GRASP for the matrix decomposition problem, the behavior of GRASP is extensively studied for some of the classical problems. The performance of the algorithm is evaluated for different strategies of parameter variation, in contrast with single and fixed value of the parameter along the iterations. The performance of GRASP is evaluated taking into account the matrix decomposition problem, set covering, W-MAXSAT, and graph planarization.

Marcos de Carvalho MACHADO. "Segmentação de dados sísmicos via Hyperstack para visualização". M.Sc. Diss. Presentation: 27/04/00 115 p. Advisor: Marcelo Gattass

Abstract: Applying volume rendering techniques to seismic data makes it possible to visualize the whole data volume at once, which may represent a gain for seismic interpretation when compared to traditional techniques based on two-dimensional cross-sections. However, it has been verified that the usual opacity function definition scheme is not suitable to this task due to its inability to isolate an individual seismic event. The approach followed in this work in order to generate a good seismic volume rendering image

consists in investigating automatic or semi-automatic segmentation methods to allow isolating seismic events. This work studies the utilization of the Hyperstack and the Probabilistic Hyperstack methods, both based on Scale Space Theory concepts for multidimensional image segmentation. The work also proposes a variation for both methods which incorporates the Region Growing strategy. An analysis of the methods is done using a series of two-dimensional synthetic images. This makes possible to understand the basic behavior of the algorithms in situations where the image complexity is controlled and the inspection of the results is simple. Finally, the methods are tested with two-dimensional real seismic data.

Meire Juliana ANTONACCI. "NCL: Uma linguagem declarativa para especificação de documentos hipermídia com sincronização temporal e espacial". M.Sc. Diss. Presentation: 19/04/00 100 p. Advisor: Luiz Fernando Gomes Soares

Abstract: The main goal of this work is the creation of a declarative language for the specification of hypermedia documents. At first, an analysis of several existing languages is made. Some fundamental characteristics of hypermedia languages are then recognized. Indeed these characteristics derive from hypermedia models the languages are based on. The more expression power models have the more authoring resources they provide allowing the development of complex documents. After analyzing these languages and describing the in models characteristics an analysis and refinement of the NCM hypermedia conceptual model is made with the purpose of providing NCM with all desirable characteristics found in the language based on NCM will then provide the same characteristics. The language developed, called NCL, was specified using the XML standard, which defines a markup language recommended by W3C. Through NCL it is possible to specify generic hypermedia documents containing the previously mentioned characteristics, including time and space synchronization relations among their components - this is the main contribution of the present work. Another contribution to be pointed out is the proposal for an extended SMIL, a hypermedia language standardized by W3C, aiming at repairing some SMIL shortcomings and offering the same advantages of NCL.

Melissa LEMOS. "Gerenciamento de memória para comparação de biosseqüências". M.Sc. Diss. Presentation: 09/14/00 127 p. Advisor: Sergio Lifschitz

Abstract: Many genome projects are currently being developed. The number of nucleotide and aminoacid sequences and related annotations are increasing very fast due to recent advances in the underlying technology. There is a very large amount of information obtained from many organisms, including the human genome. Thus, it becomes very important to use a database management system for efficient storage and access to all this information. Besides this, the development and efficient use of data analysis' algorithms are also important research problems. Among these, one of the most important is sequence comparison, as this operation is the basis for other more complex manipulations. There are two main algorithm families for sequence comparison with the sequences stored in databases: FAST and BLAST. The latter is the family most used in practice. The goal of this work is to present sequence storage structures for memory and buffer management, which use a page replacement ad-hoc policy that we call here Ring Management. As so, we claim that the BLAST family comparison algorithm performance may be improved. Indeed, we have implemented a simulation of the Ring Management and the experimental results obtained confirm it.

Michelle Santos SÁ. "Uma abordagem online para comparação de junções paralelas." M.Sc. Diss. Presentation: 15/12/00 71 p. Advisor: Sergio Lifschitz

Abstract: Different approaches for the parallel execution of the relational join operator were proposed in the literature. Implementations were developed in order to compare and to evaluate these strategies in a parallel environment. However, there is no agreement concerning the behavior of the strategies, with or without load balancing, with respect to several real conditions where these strategies are executed. This work presents an approach to the parallel join problem from the online algorithms theory point of view. We use competitive analysis to evaluate and compare the behavior of strategies compared to the offline (optimal) one. Instead of an analytical study, common to the online context, this dissertation presents an implementation and a simulation to evaluate an online parallel join strategies with load balancing with respect to workload distribution. As adversaries we consider a variation in the number of parallel processors available and the skew on join attribute data values.

Patricia Garcês RABELO. "Um provador interativo de teoremas". M.Sc. Diss. Presentation: 25/10/00 103 p. Advisor: Edward Hermann Haeusler

Abstract: Developing formal specification of a program has become a common practice in recent years due to the software technological advance. Thus, it increases the necessity of making theorem proofs to assure the system specification consistency. However, it is not only formal specification developing complex, but also the theorem proving. Nevertheless, the literature is weak on offering those tools with real *good* user interfaces. Thinking about this problem, we have constructed an interactive intuitionist first order first order theorem prover, attending major interactive human-computer principles. The proposed theorem prover, shows a graphical representation of the proof in which details are omitted and the user can concentrate his attention on the main natural deduction rule applications during the proof process. The interaction between the user and the prover is characterized by the choice of the strategy among the ones suggested in order to finalize the proof. Concluding this work, we present several case studies showing that our proposed goals were met.

Renato Fontoura de Gusmão CERQUEIRA. "Um modelo de composição dinâmica entre sistemas de componentes de software". Ph.D. Thesis Presentation: 21/08/00 104 p. Advisor: Roberto Ierusalimschy

Abstract: Different component systems, such as CORBA, COM, and Java, have different object models and type systems. Such differences make the interoperability between components of distinct systems more difficult, and thus are an obstacle for component reuse. In this dissertation, we argue that an interpreted language with a specific set of reflexive mechanisms, together with a type system with structural compatibility, offers a composition mechanism suitable for dynamic component connection and for interoperability between different component systems. This composition mechanism performs at runtime the tasks of verifying types, connecting adapting and implementing components, and handles components of different systems in a uniform way, allowing them to be connected transparently. The proposed composition mechanism is based on a model that favors flexibility at runtime. This composition model is composed of two major elements. The first one is an object model, defined in order to represent components of the different systems addressed in this dissertation. Thus, this object model performs the role of a *unifying model*, that is, a model in which objects from different systems can interact and be represented transparently. The second element of our composition model is a design pattern to implement bindings between interpreted languages and component systems. This design pattern, named *Dynamic Language Binding*, does not use the traditional stubs technique. Instead of this, it uses reflection and dynamic typing to implement generic proxies, which can represent any component of a specific system, and generic adopters, which allow component implementations using the composition language itself. In order to validate our proposal, we describe the LuaOrb system, which is an implementation of our composition model. LuaOrb uses the interpreted language Lua as its dynamic composition language, and integrates the systems CORBA, COM and Java.

Rodrigo Lemos de ASSIS. "Facilitando a percepção em ambientes virtuais de aprendizado através da abordagem groupware". M.Sc. Diss. Presentation: 18/04/00 144 p. Advisor: Hugo Fuks

Abstract: Recent research on groupware and learningware presents some approaches for managing awareness information in order to enhance cooperation on distributed systems. This work proposes ways to support awareness on learningware environments. The study of awareness in groupware is the first step of this work, which leads to relevant aspects regarding awareness in learningware. Some of these concepts are implemented in the learningware environment AulaNet.

Rodrigo Penteado R. de TOLEDO. "QUADLOD: uma estrutura para a visualização interativa de terrenos". M.Sc. Diss. Presentation: 11/04/00 122 p. Advisor: Marcelo Gattass

Abstract: This work focuses on the use of hierarchical structures to interactively visualize terrain. Our purpose is to achieve real time three-dimensional visualization of terrain models obtained from a geographic information system. These models can represent a broad area of the Earth's surface with detailed information, thus yielding very large data sets. For this reason, it is necessary to use a

compatible structure to store and query these data. In this work, we present a new structure which combines advantages of different structures provided in the literature. We also discuss an implementation of these ideas and series of tests, drawing several conclusions.

Sergio Crespo da Silva PINTO. "Composição em WebFrameworks". Ph.D. Thesis Presentation: 28/08/00 150 p. Advisor: Carlos José Pereira de Lucena

Abstract: This thesis presents all identified problems related to the composition of WebFramework in the Web Platform. The problem was approached through a domain specific language (DSL) called *WebCompose* developed for this purpose. The theoretical background used for the design of *WebCompose* comes from the Abstract Design Views and Abstract Design Object which emphasizes separation of concerns and define a set of properties for the realization of flexible design. The case study illustrates the use of all the commands in the DSL and all composition situations identified.

Suzana de Abreu Accioly CANUTO. "Heurísticas de busca local para o problema da árvore de Steiner com prêmios". M.Sc. Diss. Presentation: 17/03/00 58 p. Advisor: Celso da Cruz Carneiro Ribeiro

Abstract: Given an undirected graph with prizes associated with its nodes and costs associated with its edges, the prize-collecting Steiner tree problem consists in finding a subtree of this graph which minimizes the sum of the costs of its edges plus the sum of the prizes of the nodes not spanned. This problem has great importance in telecommunication local access network design. One of its applications in this field consist in balancing the potential revenue that can be obtained by providing services to customers and the cost of building the network to do so. Despite its importance, few algorithms have been proposed to solve the prize-collecting Steiner tree problem. This dissertation presents a multi-start local search algorithm based on the generation of initial solutions by a primal-dual algorithm using perturbed prizes. Path-relinking is used to improve solutions found by the local search and variable neighborhood search is used as a post-optimization procedure. Computational experiments reported show that the algorithm finds optimal solution on nearly all of the instances tested. A parallel algorithm that uses the MPI standard to provide message passing is also proposed. This parallel algorithm is an extension of the sequential version and finds even better solutions with reasonable processing times.

Thais Vasconcelos BATISTA. "Luaspace: um ambiente para desenvolvimento de aplicações baseadas em componentes". Ph.D. Thesis Presentation: 20/11/00 166 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: Object integration models, also known as component models, present important abstractions to facilitate the development of distributed applications formed by reusable components. These models offer support to reduce the complexities associated with distributed programming and with the use of heterogeneous components. In spite of this support, the component models do not provide facilities to describe the global organization of an application. In order to address this issue, we have adopted the configuration-based approach to define the structure of component-based applications. In the configuration-based approach configuration languages are used to define the structure of an application. Classically, configuration-based systems follow the Configuration Paradigm, which uses components whose interface describe the services *required* by clients and those *provided* by servers. Therefore, component interaction are described in the configuration program, merely binding required and provided services. This configuration model is not compatible with components whose interface do not provide information about required services and presents limitations regarding dynamic evolution of application and capacity of adapting components to bridge compositional mismatches. In this work, we argue that a different approach, using an interpreted and procedural language as a tool for application configuration, can address this aspect and provide support for an important requirement of nowadays applications: dynamic reconfiguration. We present an environment, *LuaSpace*, for configuring and reconfiguring component-based application. Luaspace combines the use of heterogeneous and distributed components provided by component models with an interpreted and procedural language, *Lua*, and a set of tools based on this language. The environment offers mechanisms for composition and evolution of applications. In this environment, components, scripts and glue code are the elements that form an application. LuaSpace allows adaptation of components that need to bridge compositional mismatches and offers support for programmed, ad-hoc, structural and functional reconfiguration and also for dynamic installation of new components.

Tula KRAISER. “Serviço de tolerância a falhas para o ambiente CORBA”. M.Sc. Diss. Presentation: 17/11/00 112 p. Advisor: Noemi de La Rocque Rodriguez

Abstract: The component programming model has been shown as a good paradigm to program distributed systems. The CORBA *middleware*, which is specified by OMG allows the programming of components in several programming languages and for diverse operational environments. The components programmed in CORBA benefits from the use of services like the transaction service, name service, and event service. The OMG has specified a new fault tolerant service to serve applications that require a high degree of reliability. The objective of this work is to evaluate the OMG proposal for the fault tolerant service. To achieve this goal, we have developed a prototype of a fault tolerance infrastructure for active replication. Using communication group technology and CORBA services, we have implemented the necessary components to the infrastructure using the interfaces defined by OMG.

Viviane Torres da SILVA. “ContentNet: um framework para interoperabilidade de conteúdos educacionais utilizando o padrão IMS”. M.Sc. Diss. Presentation: 24/03/00 92 p. Advisor: Carlos José Pereira de Lucena

Abstract: The World Wide Web original organization assumed that its stared information was to be read by machines without concern to the possibility of machines interpreting this information. The growth of the amount of information available on the Web made it more complex to search, have access to and to obtain information on the Web. The cope with this problem the platform IMS has been proposed. A consortium formed by academic institutions, companies and government agencies is developing the platform. The goal of the platform is to promote the viability and growth of online activities in the area of education. One of the most important activities of the consortium in Internet based learning with the possibility of interoperability among different environments for Web-based education. Based on the proposed platform and the need for content exchange among different AulaNet servers we have developed on object oriented framework to enable the description, localization and use of educational content available in servers which are compatible with the IMS platform.

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CASSINO, C.R.S.P. (96) **149**
CASSINO, C.R.S.P. (00 - D) **190**
CASTIER, B. (95) **139**
CASTILHO, J.M.V. (73) **16**
CASTILHO, J.M.V. (82 - D) **60**
CASTRO, A.C.M. (97) **156**
CASTRO, C.E.P.S. (98) **165**
CASTRO, F.B.V. (75) **23**
CASTRO, I.D. (84 - D) **71**
CASTRO, O.R. (84) **74**
CASTRO, R.G. (94) **137**
CASTRO, R.L.M.P. (82) **62**
CATUNDA, R.H.C. (72) **12**
CAVALCANTI, M.R. (86) **84**
CAVALCANTI, P.R. (85) **80**
CAVALCANTI, P.R. (92 - D) **123**
CELES FILHO, W. (95 - D) **146**
CENTENO, L.F.R. (72) **11**
CERQUEIRA, P.M. (94) **137**
CERQUEIRA, R.F.G. (96) **154**
CERQUEIRA, R.F.G. (00 - D) **196**
CHAHON, J.A. (80) **49**
CHAVES, H.A.F. (78) **39**
CHAVES, J.G. (97) **159**
CHAVES, R.N.M. (72) **13**
CHAVES, T.C.F. (71) **08**
CHAVES, T.C.F. (79 - D) **47**
CHAVES, V.L.S.R. (82) **63**
CHAVES FILHO, E.M. (87) **88**
CHI, W.H. (91) **119**
CIARLINI, A.E.M. (94) **133**
CIARLINI, A.E.M. (99 - D) **176**
CLEMENTINO, M.V. (75) **26**
COCKBAINE OJEDA, J. (83) **67**
COELHO, E.C.F.M. (99) **179**
COELHO, L.C.G. (98 - D) **169**
COELHO, O.P. (85) **79**
COELHO, O.P. (92 - D) **123**
COELHO FILHO, J.M. (93) **128**
COLCHER, S. (93) **131**
COLCHER, S. (99 - D) **185**
CONTRERAS ARRIAGADA, L.R. (83) **67**
CORDERO PEÑA, J.C. (83) **67**
CORRÊA FILHO, M. (73) **16**
CORRÊA, M.S. (92) **122**
CORRÊA, M.S. (97 - D) **160**
CORRÊA, R.J.V. (83) **68**
CÔRTES, S.C. (99) **186**
COSTA, A.O. (97) **156**
COSTA, E.R.T. (90) **104**
COSTA, F.R. (96) **150**
COSTA, G.M. (79) **45**
COSTA, H.A.X. (97) **159**
COSTA, H.J.L. (84) **71**
COSTA, L.C. (89) **99**
COSTA, M.E.B.M. (82) **61**
COSTA, M.M.C. (85) **78**
COSTA, M.M.F. (93) **130**
COSTA, M.M.F. (97 - D) **161**
COSTA, P.O.A. (77) **36**
COSTA, P.S.S. (90) **107**
COSTA, R.M. (76) **32**
COSTA, V.L.H. (98) **174**
COUTINHO FILHO, C. (71) **06**
COUTINHO, L.L. (94) **135**
COUTINHO, R.C. (80) **51**
CRIGNIS, D. (71) **06**
CRIPPA, E.J.M. (78) **38**

CRISÓSTOMO, C.P. (79) **44**
CRUZ, S.O. (98) **173**
CUNHA, C.K.V. (97) **157**
CUNHA, E.B. (75) **22**
CUNHA, J.B.S. (84) **72**
CUNHA, L.F.A. (71) **07**
CUNHA, M.O. (96 - D) **153**
CUNHA, R.H. (97) **162**
CUNHA JUNIOR., O.B. (80) **50**
CURY, D. (86) **81**
CUSATIS JUNIOR, A. (99) **175**
CYSNEIROS, L.M. (97) **160**
D'IPOLITTO, C. (84) **71**
DANTAS, J.E.R. (75) **24**
DANTAS, M.A.R. (92) **123**
DANTE, A.M. (76) **28**
DARSA, L. (94) **135**
DELAROLI, R. (76) **32**
DERRAIK, A.L. (97) **156**
DIAS, A.I.A.S. (99 - D) **175**
DIAS, D.S. (70) **03**
DIAZ, A.L. (91) **109**
DINIZ, E.C. (75) **22**
DINIZ, V.A. (87) **91**
DIRENE, A.I. (87) **87**
DONATO, L.F.C. (91) **114**
DONOSO VALIENTE, R.F. (75) **27**
DUARTE, A.M. (74) **18**
DUARTE, C.A. (80) **48**
DUARTE, C.H.C. (94) **133**
DUARTE, R.C. (95) **145**
DUARTE FILHO, N.L. (85) **79**
DUARTE FILHO, N.L. (91 - D) **115**
DUPIRE, B. (85 - D) **76**
DURÁN, J.E. (99 - D) **181**
EIZIRIK, L.M.R. (76) **29**
ENDLER, M. (87) **89**
ERLICH, P.J. (83) **68**
ESMERALDO, L.L. (99) **181**
ESTELLITA, M.M. (94) **136**
FACÓ, J.L.D. (71) **07**
FALCÃO, F.P. (80) **48**
FALKEMBACH, G.A.M. (75) **24**
FARIA, P.O. (72) **12**
FARIAS, O.L.M. (77) **35**
FARIAS, O.L.M. (91 - D) **116**
FELIX, M.F. (98) **170**
FERLIN, C. (87) **87**
FERNANDES, C.T. (92 - D) **120**
FERNANDES, I.R.A. (90) **105**
FERNANDES, J.D.S. (84) **72**
FERRAZ, M.F.R. (93) **128**
FERREIRA, A.C. (86) **81**
FERREIRA, A.G. (99) **175**
FERREIRA, C.C.F. (98) **165**
FERREIRA, D.L.V. (73) **15**
FERREIRA, F.C. (73) **15**
FERREIRA, J.L.C.Q. (89) **99**
FERREIRA, S.M.B.L. (91) **118**
FERREIRA, S.M.B.L. (99 - D) **187**
FIORINI, S.T. (95) **146**
FISCHER, R. (91) **117**
FOINA, P.R. (85 - D) **80**
FONSECA, L.T.S. (97) **160**
FONSECA, N.L.S. (87) **90**
FONTOURA, M.F.M.C. (97) **161**
FONTOURA, M.F.M.C. (99 - D) **182**
FORMAN, J.L. (92) **122**
FORTUNATO, L.X. (99) **181**
FOX, C.O. (77) **34**
FRANCA, L.P.A. (93) **128**
FRANCA, L.P.A. (00 - D) **193**
FRANCO, A.P.M. (92) **120**
FREDERICK, P. (99) **184**
FREITAS, J.E. (75) **23**
FREITAS, F.C. (00) **191**
FREITAS, F.G. (97) **158**
FREITAS, J.E. (73) **16**
FREITAS, R.R. (79) **47**
FRESNEDA, P.S.V. (77) **36**
FRIAS, M.F. (98 - D) **170**
FRIZERA JR., A. (79) **43**
FUKS, H. (84) **71**
FURTADO, A.B. (84) **70**
FURTADO, A.L. (69) **01**
GALÚCIO, E.G. (94) **134**
GARCIA, A.V. (00 - D) **188**
GARCIA, L.S. (90) **106**
GARCIA, L.S. (95 - D) **142**
GARCIA, N.A.B. (75) **26**
GATTAZ SOBRINHO, F. (75) **24**
GAZZANEO, G. (73) **15**
GENARO, S. (86) **84**
GHEINER, M. (93) **129**
GILVAZ, A.P.P. (94) **132**
GOLDENSTEIN, S.K. (97) **163**
GOLDSTEIN, J.S.P. (74) **18**
GOMES, A.L.V. (93) **126**
GOMES, A.T.A. (99) **177**
GOMES, E.L. (81) **54**
GOMES, F.S.F. (00) **191**
GOMES, G.R.R. (99) **180**
GOMES, P.C.R. (99 - D) **184**
GOMES, S.A.S. (93) **131**
GONÇALVES, C.A. (76) **28**
GONÇALVES, M.E.P.M. (74) **19**
GONÇALVES, S.A. (86) **84**
GONZALEZ CLUA, E.W. (99) **179**
GORHAM, T.G. (96) **155**
GOUVEIA, R.S. (83) **68**
GUALANDI, P.M. (89) **101**
GUARANYS, C.R. (00) **190**

GUARANYS, P.Y. (87) **90**
GUARANYS, P.Y. (93 - D) **130**
GUARISCO, H.M. (93) **127**
GUEDES, J. (75) **24**
GUEDES, L.C.C. (95 - D) **143**
GÜELL BARROSO, N. (98) **172**
GUERREIRO, R.A.T. (90 - D) **107**
GUIMARÃES, J.F. (87) **88**
GUIMARÃES, M.A. (84) **73**
GUIMARÃES, M.A.M. (95 - D) **143**
GUSMÃO, E.D. (77) **34**
HAEBERER, A.M. (91 - D) **110**
HAEUSLER, E.H. (86) **82**
HAEUSLER, E.H. (90 - D) **104**
HEMERLY, A.S. (95 - D) **139**
HERNANDEZ FIGUEROA, H.E. (89) **98**
HERNANDEZ, M.F.G. (85) **79**
HESTER, A.M. (99) **176**
HIJJAR, N.A. (84) **74**
HIRAGA, E. (86) **82**
HOLANDA, T.C.B. (80) **51**
HUANG, J.L.C. (98) **169**
HUBSCHER, P.J.E. (95) **145**
HUGUET, L.A.M. (76) **30**
IERUSALIMSCHY, R. (85) **80**
IERUSALIMSCHY, R. (90 - D) **107**
ISHIKAWA, E. (98) **166**
JABLONSKI, S. (92) **124**
JAGUARIBE, M.E.F.T. (80) **50**
JARDIM, J.B.C. (88) **95**
JOBIM FILHO, P. (75) **26**
JUCÁ, P.P. (93) **130**
KACELNIK, P. (80) **51**
KAKITANI, J. (78) **40**
KELLER FILHO, T. (73) **17**
KERSTENETZKY, V.A. (89) **101**
KISCHINHEVSKY, M. (93 - D) **129**
KOBAYASHI, L.N. (88 - D) **95**
KOELSCH, W.C. (77) **37**
KOPP JUNIOR, R.V. (83) **68**
KOPP JUNIOR, R.V. (89 - D) **101**
KOZOVITS, L.E. (91) **113**
KRAISER, T. (00) **198**
KRAUSE, W.G. (90) **108**
LABER, E.S. (97) **158**
LABER, E.S. (99 - D) **179**
LABRUNIE, M.M. (87) **89**
LACERDA, M. (93) **129**
LADEIRA, R.M.M. (80) **51**
LAGE, E.L. (79) **44**
LANDES, O.E. (80) **50**
LANZELOTTE, R.S.G. (77) **36**
LANZELOTTE, R.S.G. (90 - D) **107**
LAPA, A.J.C. (80) **48**
LASMAR, L.C.C. (89) **99**
LAUFER, C.C. (94) **133**
LEAL, R. (74) **20**
LEENHARDT, R.P. (73) **17**
LEITE, J.C. (91) **112**
LEITE, J.C. (98 - D) **169**
LEITE, J.C.S.P. (79) **46**
LEITE, L.L.P. (78) **40**
LEITE, L.L.P. (85 - D) **77**
LEIVA, Y.E.F. (81) **57**
LELLIS, J.V. (78) **40**
LEMOS, M. (00) **195**
LERNER, A. (98) **164**
LEVY, C.H. (93) **127**
LEVY, R.C. (91) **117**
LIMA, F.L.F. (71) **06**
LIMA, F.S. (88 - D) **94**
LIMA, I.N. (97) **159**
LIMA, J.C.M. (85) **77**
LIMA, M.J.D. (92) **123**
LIMA, M.M.A.E. (98) **172**
LIMA, P.R.S.R. (74) **19**
LIMA, T.S. (88) **97**
LIMA FILHO, R.A. (82) **62**
LINS, E.R. (78) **38**
LOBEL, L. (81) **55**
LOBEL, R.E. (81) **56**
LOPES, F.B. (98) **167**
LOPES, H.C.V. (92) **122**
LOPES, M.A. (81 - D) **55**
LOPES, O.A. (77) **35**
LOURENÇO, M.C.F. (86) **84**
LUCENA, A.J.P. (73) **14**
LUNA, H.P.L. (72) **11**
MACEDO, J.A.F. (00) **191**
MACEDO, L.M. (80) **49**
MACEDO, L.T. (71) **07**
MACEDO, N.A.M. (99) **183**
MACHADO, M.C. (00) **194**
MACIEL, P.W.C. (86) **84**
MAGALHÃES, G.C. (76) **29**
MAGALHÃES, H.G.P. (93) **127**
MAGALHÃES, I.M.R. (79) **45**
MAGALHÃES, J.A.C. (79) **46**
MAGALHÃES, L.C.S. (94) **135**
MAIA, A.C.P. (85) **76**
MAIA, A.C.P. (96 - D) **149**
MAIA, R.E.M. (91) **116**
MAIA NETO, A. (00) **189**
MALCHER, L.P.L.G. (78) **40**
MANDARINO, P.R.N. (82) **62**
MANFREDI, V. (86) **85**
MARANHÃO, M.P.A. (90) **106**
MARINHO, M.S.S. (76) **30**
MARINS, C. (87) **87**
MARQUES, M. (88) **96**
MARTINHO, L.A.A.M. (86) **83**
MARTINS, A.F. (83) **65**

MARTINS, C.B. (00) **189**
MARTINS, I.H. (90) **105**
MARTINS, I.H. (98 – D) **168**
MARTINS, L.C. (70) **04**
MARTINS, M. (78) **41**
MARTINS, M.A.C. (98) **170**
MARTINS, M.L.D. (86) **83**
MARTINS, P.S. (71) **08**
MARTINS, R.C.B. (84 - D) **74**
MARTINS, S.L. (88) **97**
MARTINS, S.L. (99 - D) **186**
MARTINS, S.P. (90 - D) **108**
MATHIAS, A.G. (94) **132**
MATHIAS FILHO, I. (96) **151**
MATICH, G.H. (90) **105**
MATOS, A.M. (98) **165**
MAZINI, F.S. (90) **104**
MAZZINI, R.L. (78) **41**
MAZZONI, C.J. (81) **53**
MAZZUCA, D.A. (91) **111**
MEDEIROS, A.T. (72) **10**
MEDEIROS, C.M.B. (79) **44**
MEDEIROS, G.M. (80) **49**
MEDEIROS, J.H.N. (82) **60**
MEDEIROS, J.L. (85) **77**
MEDEIROS, J.M. (81) **55**
MEDEIROS, P.R.G. (82) **61**
MEDIANO, M.R. (95) **144**
MEDIANO, M.R. (99 – D) **183**
MEDINA, M.T. (96) **152**
MELLO, I.D.L.S. (79) **45**
MELLO, S.R.V. (83) **68**
MELO, F.A. (88) **95**
MELO, M.P. (91) **115**
MELLO FILHO, H.B. (77) **35**
MENASCÉ, D.A. (75) **22**
MENDES, C.A.T. (99) **178**
MENDES, F.M.R. (82) **59**
MENDES, I.A. (81) **54**
MENDES, J.A.F. (79) **45**
MENDES, O.A. (88 - D) **96**
MENDEZ ORTIZ, E.E. (82) **59**
MENDONÇA, M.F. (96) **152**
MENESES ROJAS, M. (84) **73**
MENEZES, C.S. (83) **66**
MENEZES, C.S. (89 - D) **98**
MERÉ, M.C. (93 - D) **128**
MESQUITA, F.V. (00) **190**
MESQUITA, J.M.C. (74) **19**
MICHIREFE, M.S.C. (98) **171**
MILET, E.B. (75) **23**
MILET, J.R.L. (96) **151**
MILITÃO, J.G.O. (95) **142**
MILLAN, M.R. (71) **08**
MIRANDA JR., C.C.(79) **43**
MIZUTANI, E.E. (90) **103**
MONARD, M.C. (80 - D) **50**
MONTEIRO, C.C.O. (98) **166**
MONTEIRO, M.A. (79) **46**
MONTEIRO, S.L. (86 - D) **85**
MONTEIRO NETO, P.J. (82) **62**
MONTENEGRO, A.A. (97) **157**
MORAES, R.C. (92) **124**
MORAIS, J.B. (80) **49**
MOREIRA, A.M.M. (90) **103**
MOURA, A.L. (00) **189**
MOURA, C.M.O. (83) **66**
MOURA, E.T. (79) **44**
MOURA, I.C.R. (99) **181**
MOURA, L.M. (96) **151**
MOURA, L.M. (00 - D) **192**
MOUTINHO, C.M.P. (94) **133**
MUCHALUAT, D.C. (96) **150**
MULATINHO, P.C.F. (78) **41**
MUNIZ, B.C. (00) **189**
NACIF, J.M. (74) **18**
NAKANISHI, T. (81 - D) **57**
NASCIMENTO, A.A. (73) **14**
NASCIMENTO, P.V. (77) **36**
NASSER, F.E.N. (89) **98**
NASSER, Y.D.N. (89) **101**
NEHAB, C.E.E. (85) **76**
NEVES, J.C.P. (84) **72**
NIGRI, A. (96) **148**
NIGRI, H. (91) **112**
NIGRI, V.E. (84) **75**
NISKIER, C. (86) **81**
NÓBREGA, M.G.W. (97) **160**
NOGUEIRA, J.H.M. (94) **135**
NORBERTO, M.C. (84) **73**
NÓVOA, M.A.A. (77) **35**
NOYA, R.C. (98) **173**
NUNES, A.C.G. (85) **76**
NUNES, A.C.G. (91 - D) **109**
NUNES, D.J. (72) **11**
NUNES, M.G.V. (91 - D) **115**
OLIVEIRA, A.A. (82) **59**
OLIVEIRA, A.M. (75) **21**
OLIVEIRA, A.P. (96 - D) **148**
OLIVEIRA, A.P.A. (94) **132**
OLIVEIRA, C. (74) **18**
OLIVEIRA, C.A.A.M. (96) **149**
OLIVEIRA, C.M. (84) **71**
OLIVEIRA, D.A.S. (92) **121**
OLIVEIRA, D.A.S. (99 - D) **178**
OLIVEIRA, E.S. (97) **158**
OLIVEIRA, J.C. (96) **151**
OLIVEIRA, J.C.A.R. (75) **24**
OLIVEIRA, L.L.G.D. (91) **113**
OLIVEIRA, T.C. (97) **163**
OLIVEIRA JUNIOR, P.P.M. (99) **184**
OMAR, N. (89 - D) **100**

OPPENHEIMER, M. (82) **61**
PACHECO, Q.I. (76) **31**
PACITTI, E.C. (98 - D) **167**
PALATNIK, D. (80) **48**
PALMER, J.C.S. (81) **55**
PAMPLONA, D.C. (88 - D) **94**
PARENTE, F.A.F. (78) **39**
PASSOS, E.P.L. (71) **06**
PASSOS, S.M.M. (78) **41**
PASTOR-BRAGA, P.J. (91) **116**
PAZ, A.C. (93) **126**
PEIXOTO, M.V. (89) **100**
PEIXOTO, S.R.G. (75) **27**
PELISSON, M.C. (76) **30**
PENEDO, M.H. (74) **19**
PEQUENO, T.H.C. (77) **36**
PEQUENO, T.H.C. (81 - D) **57**
PEREIRA, A.B. (88 - D) **93**
PEREIRA, A.S. (74) **18**
PEREIRA, C.S. (83) **65**
PEREIRA, F.F.A. (94) **134**
PEREIRA, L.A.M. (87) **89**
PEREIRA, P.R.S. (95) **144**
PEREIRA, R.C. (76) **32**
PEREIRA FILHO, J.G. (86) **83**
PEREZ ALCAZAR, J.J. (95 - D) **142**
PERPIGNAN, D.M. (88) **94**
PESSOA, A.A. (99) **177**
PESSOA, F.E.P. (81) **54**
PESSOA, T.E.C. (86) **85**
PFEFFER, A.S. (72) **10**
PICCININI, H.S. (98) **168**
PIETROBON, C.A.M. (87) **87**
PIETROBON, C.A.M. (95 - D) **140**
PIMENTA, E.J.F. (92) **121**
PIMENTEL, A.M.S. (74) **18**
PINHEIRO, C.E. (88) **93**
PINHEIRO, S.E.M.L. (97) **163**
PINTO, D.A. (99) **178**
PINTO, L.A.F. (00) **193**
PINTO, M.J.F.F. (91) **115**
PINTO, S.C.S. (00 - D) **197**
PION, M.M.B. (79) **46**
PION, M.M.B. (84 - D) **73**
PIZOL, J. (87) **89**
PIZZATTO, S.R. (76) **32**
PIZZOL, A.M. (98) **165**
PONTE, O.B. (87) **90**
PONTES, R.C.A. (97) **162**
PORTILHO, C.A. (87) **87**
PORTO, F.A.M. (96) **150**
PORTO, S.C.S. (91) **118**
PORTO, S.C.S. (95 - D) **146**
POTENGY, A.B. (93) **126**
POUBEL, H.W. (95 - D) **141**
PRADO JUNIOR, A.C. (73) **15**
PRADO, A.F. (92 - D) **120**
PRAIS, M. (00 - D) **194**
PRATES, R.O. (94) **137**
PRATES, R.O. (98 - D) **172**
PRICE, A.M.A. (76) **28**
QUACCHIA, G.M.E.A. (87) **88**
QUEIROZ, J.D. (78) **39**
QUEIROZ, M.G.S. (73) **16**
QUENTAL, F.S.T.D.B. (88) **95**
QUINTELLA, H.L.M.M. (70) **03**
RABELO, P.G. (00) **196**
RABUSKE, R.A. (72) **13**
REGO, P.F.L. (81) **55**
REGO, S.P. (82) **63**
REIS, A.O. (84) **70**
RELVAS, G.C.L. (89) **98**
RENTERIA, C.J. (00) **190**
REZENDE, M.A.M. (88) **96**
REZENDE, N.A. (96) **153**
RIBEIRO, A.R. (90) **103**
RIBEIRO, M.B. (98) **169**
RIBENBOIM, A. (93) **126**
RICHA, T.R.W. (98 - D) **173**
RIDOLFI, L.F.G.G.M. (95) **142**
RIOS, J.R.A.C. (89) **99**
RIPPER, P.S. (99) **184**
RITTO, A.C.A. (93 - D) **127**
RIVERA ESCRIBA, L.A. (96) **152**
RIVERA ESCRIBA, L.A. (00 - D) **193**
RIVERO, P.R. (87) **91**
ROCHA, A.R.C. (78) **38**
ROCHA, A.R.C. (83 - D) **65**
ROCHA, E.S. (81) **54**
ROCHA, P.C. (88) **97**
RODRIGUES, F.F.A. (85) **77**
RODRIGUES, L.M. (00) **192**
RODRIGUES, M.A.A. (99) **182**
RODRIGUES, M.C.M. (85) **78**
RODRIGUES, R.F. (97) **162**
RODRIGUES NETO, A. (78) **38**
RODRIGUEZ ESTAY, H.M. (75) **24**
RODRIGUEZ, N.L.R. (86) **84**
RODRIGUEZ, N.L.R. (93 - D) **130**
ROENICK, R.D. (81) **57**
ROMERO, M.A. (82) **61**
ROSA, N.B. (73) **16**
ROSA FILHO, P.L. (76) **31**
ROSCHKE, S.I. (72) **13**
ROSSETI, I.C.M. (98) **168**
ROSSI, G.H. (96 - D) **150**
ROTENBERG, H.B. (87) **88**
ROZO, M.A.F. (88) **96**
RUSSO, E.E.R. (88) **94**
SÁ, J.E.A. (82) **59**
SÁ, M.S. (00) **195**
SABAT NETO, J.M. (00) **191**

SALIM, C.S. (70) **03**
SALIM, H.K. (70) **04**
SAMPAIO, A.B.C. (72) **10**
SANCHES, N.C. (99) **183**
SANCHEZ, M.L.A. (96 - D) **152**
SAN MIGUEL ESPEJEL, J.L. (75) **25**
SANT'ANNA, M.H.B. (99 - D) **182**
SANT'ANNA, P.H.M. (97) **162**
SANTA CRUZ PASTOR, M.Y. (82) **61**
SANTIMATEO GALVEZ, D. (76) **29**
SANTOS, A.G. (86) **81**
SANTOS, A.L.S.C. (96) **148**
SANTOS, A.P.L. (73) **14**
SANTOS, C.S. (72) **10**
SANTOS, C.S. (80 - D) **48**
SANTOS, P.F.A. (85) **79**
SANTOS, R.J.M. (76) **32**
SANTOS, S.L. (82) **63**
SANTOS, S.M. (70) **05**
SANTOS, S.R. (96) **155**
SANTOS, V.R.B. (71) **08**
SARMENTO, A.H.V. (93) **126**
SCHEER, S. (93 - D) **131**
SCHIMDT, A.E.F. (00 - D) **188**
SCHUCK, J.S. (75) **25**
SCHWABE, D. (76) **28**
SCURI, A.E. (94) **132**
SEIXAS, R.B. (97 - D) **162**
SENA, G.J. (87) **88**
SENA, G.J. (92 - D) **121**
SERPA, A.V. (75) **21**
SERRANO, M.A.B. (97 - D) **161**
SETTE, M.A. (71) **08**
SCHIEL, U. (77) **37**
SHITARA, J.Q. (82) **60**
SILVA, A. (88) **93**
SILVA, A.A.B. (91) **109**
SILVA, A.J. (80) **48**
SILVA, A.J. (86) **81**
SILVA, A.O. (99) **176**
SILVA, A.P. (97) **156**
SILVA, A.R. (99) **175**
SILVA, B.C. (94) **133**
SILVA, C.L. (98) **166**
SILVA, D.S. (99) **178**
SILVA, E.O. (77) **34**
SILVA, F.B.P. (99) **180**
SILVA, G.H. (99) **180**
SILVA, J.C. (83) **66**
SILVA, J.G. (82) **60**
SILVA, L.V. (86) **83**
SILVA, M.C. (00) **193**
SILVA, M.P. (94) **136**
SILVA, M.T.M.P. (76) **31**
SILVA, M.T.M.P. (96 - D) **153**
SILVA, N.V. (71) **08**
SILVA, R.C.B. (69) **01**
SILVA, S.A. (78) **42**
SILVA, S.B. (86) **85**
SILVA, S.D. (85) **80**
SILVA, S.D. (94 - D) **138**
SILVA, V.G. (76) **32**
SILVA, V.T. (00) **198**
SILVA, W.T. (91 - D) **118**
SILVA FILHO, N.A. (87) **89**
SILVEIRA, A.M. (77) **34**
SILVEIRA, F.M. (79) **44**
SILVEIRA, G.E. (91) **111**
SIMÃO JUNIOR, H.N. (92) **121**
SIMPLÍCIO FILHO, F.C. (86) **82**
SIQUEIRA, S.W.M. (99) **185**
SOARES, J.F. (85) **77**
SOARES, J.F. (92 - D) **122**
SOARES, L.F.G. (83 - D) **67**
SOARES, R.A.M. (95) **145**
SOBREIRO, M.V.R. (98) **171**
SOUSA, M.C. (94) **136**
SOUSA JUNIOR, A.J. (96) **148**
SOUZA, A.L.M.F. (91) **110**
SOUZA, C.T. (81) **53**
SOUZA, L.A.F. (89) **100**
SOUZA, M.C. (98) **171**
SOUZA, R.S.P. (87) **91**
SOUZA FILHO, G.L. (91) **112**
SOUZA FILHO, G.L. (97 - D) **159**
STAA, A.v. (69) **01**
STEINBRUCH, P.L. (79) **47**
SUAREZ, M.O. (99) **182**
SZENBERG, F. (97) **158**
SZRAJBMAN, L.D. (77) **35**
TAKEDA, O.K. (85) **79**
TALA, J.E. (84) **72**
TANABE, A. (70) **03**
TANAKA, K. (72) **11**
TAVARES, M.P. (78) **41**
TAVARES, O.L. (84) **74**
TAVARES, O.L. (90 - D) **106**
TEIXEIRA, A.R.M. (79) **43**
TEIXEIRA, C.A. (79) **44**
TEIXEIRA, G.A. (79) **45**
TEIXEIRA, R.R.R.R. (91) **117**
TEIXEIRA, W.S. (95) **147**
TELLO ECHEGARAY, W.A. (85) **80**
TERRY, L.A. (72) **11**
THOMAZ, A.C.F. (73) **14**
THOMÉ, L.F. (84) **72**
THOMÉ, L.F. (92 - D) **122**
TOCANTINS, C.A. (95) **140**
TOLEDO, R.P.R. (00) **196**
TORRES, E.R. (84) **71**
TORRES, J.J.M. (91) **113**
TORRES FILHO, P.R.P. (83) **68**

TORTATO, D.P. (78) **38**
TOSCANI, L.V. (73) **16**
TOSCANI, L.V. (88 - D) **95**
TOSCANI, S.S. (69) **02**
TOURINHO, O.A.F. (76) **31**
TRALES, P.R. (95 - D) **144**
TREVELIN, L.C. (91 - D) **114**
TRINKEREICH, J. (76) **29**
TUCHERMAN, L. (83) **67**
TUCHERMAN, L. (89 - D) **100**
UCHÔA, E.M.A. (94) **134**
UCHÔA, E.M.A. (99 - D) **179**
UCHÔA, R.C. (95) **145**
URURAHY, C.D. (98) **166**
VALLEJOS CAMPOS, R.A. (89) **101**
VAREJÃO, F.M. (91) **111**
VAREJÃO, F.M. (99 - D) **180**
VARELA, A.P. (91) **109**
VASQUES, R.P. (78) **41**
VAZ, J.P. (79) **45**
VAZ, P.C.T.M. (87) **90**
VEIGA, A.M.M. (76) **28**
VELMOVITSKY, K. (89) **99**
VERGARA, L.F.B.F. (91) **114**
VERVLOET, E.J.S. (89) **98**
VERVLOET, W.J.S. (87) **91**
VERVLOET, W.J.S. (95 - D) **147**
VIDAL, M.E.F. (98) **171**
VIDAL, V.M.P. (82) **63**
VIEGAS, R. (87) **91**
VIEIRA, A.C. (71) **06**
VIEIRA, M.T.P. (91 - D) **115**
VIEIRA, N.J. (87 - D) **91**
VIEIRA, S.C. (87) **90**
VILLALOBOS, H.M. (79) **45**
WAGA, C.F.E.M. (84) **70**
WAGNER, C.R. (86) **81**
WERLANG, S.S.C. (94) **138**
XAVIER, A.S. (90) **103**
YAMAGUCHI, K. (73) **16**
YANO, A.H. (79) **43**
ZHU, J. (95 - D) **141**
ZIMMERMANN, C.J. (74) **18**
ZIVIANI, N. (76) **31**
ZUNIGA DE SPIRITO, P.A. (84) **74**