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KEY=IN - YARELI KENDRICK

Implicit Parallel Programming in PH Morgan Kaufmann *Parallel machines are now affordable and available to many users in the form of small symmetric shared-memory multiprocessors (SMPs). Unfortunately, programming practices have not kept pace with this hardware advance. The vast majority of developers still write applications in sequential programming languages that do not exploit multiple processors. The traditional approaches for adding parallelism to applications are prone to introducing new, strange, and difficult-to-eliminate bugs. In this important new text, the authors offer a completely different vision of the future, where parallel programming is the default and sequential programming is a special case. The foundation of this vision is an implicitly parallel programming language, pH, which is the result of two decades of research by the authors. A dialect and extension of the standard nonstrict and purely functional language Haskell, pH is essentially Haskell with implicitly parallel semantics. pH's extensions to Haskell comprise a disciplined approach to shared parallel state, so that a pH program-even a beginner's program-is implicitly parallel. The authors have developed this text over ten years while teaching implicit parallel programming to graduate students at MIT and specialized short courses to undergraduates and software professionals in the U.S., Japan, and India. * Provides a complete treatment of the language, the programming philosophy it embraces, and its theoretical underpinnings. * Includes many clear yet small examples. * Features programs, problems, solutions, and a downloadable pH implementation for SMP machines and related software. * Is designed for students and professionals with a thorough knowledge of a high-level programming language but with no previous experience in parallel programming.* **Encyclopedia of Parallel Computing** Springer Science & Business Media *Containing over 300 entries in an A-Z format, the Encyclopedia of Parallel Computing provides easy, intuitive access to relevant information for professionals and researchers seeking access to any aspect within the broad field of parallel computing. Topics for this comprehensive reference were selected, written, and peer-reviewed by an international pool of distinguished researchers in the field. The Encyclopedia is broad in scope, covering machine organization, programming languages, algorithms, and applications. Within each area, concepts, designs, and specific implementations are presented. The highly-structured essays in this work comprise synonyms, a definition and discussion of the topic, bibliographies, and links to related literature. Extensive cross-references to other entries within the Encyclopedia support efficient, user-friendly searchers for immediate access to useful information. Key concepts presented in the Encyclopedia of Parallel Computing include; laws and metrics; specific numerical and non-numerical algorithms; asynchronous algorithms; libraries of subroutines; benchmark suites; applications; sequential consistency and cache coherency; machine classes such as clusters, shared-memory multiprocessors, special-purpose machines and dataflow machines; specific machines such as Cray supercomputers, IBM's cell processor and Intel's multicore machines; race detection and auto parallelization; parallel programming languages, synchronization primitives, collective operations, message passing libraries, checkpointing, and operating systems. Topics covered: Speedup, Efficiency, Isoefficiency, Redundancy, Amdahls law, Computer Architecture Concepts, Parallel Machine Designs, Benmarks, Parallel Programming concepts & design, Algorithms, Parallel applications. This authoritative reference will be published in two formats: print and online. The online edition features hyperlinks to cross-references and to additional significant research. Related Subjects: supercomputing, high-performance computing, distributed computing* **Research Directions in Parallel Functional Programming** Springer Science & Business Media *Programming is hard. Building a large program is like constructing a steam locomotive through a hole the size of a postage stamp. An artefact that is the fruit of hundreds of person-years is only ever seen by anyone through a lOO-line window. In some ways it is astonishing that such large systems work at all. But parallel programming is much, much harder. There are so many more things to go wrong. Debugging is a nightmare. A bug that shows up on one run may never happen when you are looking for it - but unfailingly returns as soon as your attention moves elsewhere. A large fraction of the program's code can be made up of marshalling and coordination algorithms. The core application can easily be obscured by a maze of plumbing. Functional programming is a radical, elegant, high-level attack on the programming problem. Radical, because it dramatically eschews side-effects; elegant, because of its close connection with mathematics; high-level, be cause you can say a lot in one line. But functional programming is definitely not (yet) mainstream. That's the trouble with radical approaches: it's hard for them to break through and become mainstream. But that doesn't make functional programming any less fun, and it has turned out to be a won derful laboratory for rich type systems, automatic garbage collection, object models, and other stuff that has made the jump into the mainstream.* **Parallel Programming in OpenMP** Morgan Kaufmann *Software -- Programming Techniques.* **Industrial Strength Parallel Computing** Morgan Kaufmann *Today, parallel computing experts can solve problems previously deemed impossible and make the "merely difficult" problems economically feasible to solve. This book presents and synthesizes the recent experiences of reknown expert developers who design robust and complex parallel computing applications. They demonstrate how to adapt and implement today's most advanced, most effective parallel computing techniques. The book begins with a highly focused introductory course designed to provide a working knowledge of all the relevant architectures, programming models, and performance issues, as well as the basic approaches to assessment, optimization, scheduling, and debugging. Next comes a series of seventeen detailed case studies all dealing with production-quality industrial and scientific applications, all presented firsthand by the actual code developers. Each chapter follows the same comparison-inviting format, presenting lessons learned and algorithms developed in the course of meeting real, non-academic challenges. A final section highlights the case studies' most important insights and turns an eye to the future of the discipline. * Provides in-depth case studies of seventeen parallel computing applications, some built from scratch, others developed through parallelizing existing applications. * Explains elements critical to all parallel programming environments, including: ** Terminology and architectures ** Programming models and methods ** Performance analysis and debugging tools * Teaches primarily by example, showing how scientists in many fields have solved daunting problems using parallel computing. * Covers a wide range of application areas biology, aerospace, semiconductor design, environmental modeling, data imaging and analysis, fluid dynamics, and more. * Summarizes the state of the art while looking to the future of parallel computing. Presents technical animations and visualizations from many of the applications detailed in the case studies via a companion web site.* **High Performance Embedded Computing Handbook A Systems Perspective** CRC Press *Over the past several decades, applications permeated by advances in digital signal processing have undergone unprecedented growth in capabilities. The editors and authors of High Performance Embedded Computing Handbook: A Systems Perspective have been significant contributors to this field, and the principles and techniques presented in the handbook are reinforced by examples drawn from their work. The chapters cover system components found in today's HPEC systems by addressing design trade-offs, implementation options, and techniques of the trade, then solidifying the concepts with specific HPEC system examples. This approach provides a more valuable learning tool, Because readers learn about these subject areas through factual implementation cases drawn from the contributing authors' own experiences. Discussions include: Key subsystems and components Computational characteristics of high performance embedded algorithms and applications Front-end real-time processor technologies such as analog-to-digital conversion, application-specific integrated circuits, field programmable gate arrays, and intellectual property–based design Programmable HPEC systems technology, including interconnection fabrics, parallel and distributed processing, performance metrics and software architecture, and automatic code parallelization and optimization Examples of complex HPEC systems representative of actual prototype developments Application examples, including radar, communications, electro-optical, and sonar applications The handbook is organized around a canonical framework that helps readers navigate through the chapters, and it concludes with a discussion of future trends in HPEC systems. The material is covered at a level suitable for practicing engineers and HPEC computational practitioners and is easily adaptable to their own implementation requirements.* **Central European Functional Programming School Third Summer School, CEFP 2009, Budapest, Hungary, May 21-23, 2009 and Komárno, Slovakia, May 25-30, 2009, Revised Selected Lectures** Springer Science & Business Media *The peer-reviewed papers featured in this volume were chosen from the revised notes of lectures given at the third CEFP School in 2009. They cover a number of topics such as design patterns, semantics, types, and advanced programming in various FP languages.* **Concepts, Techniques, and Models of Computer Programming** MIT Press *Teaching the science and the technology of programming as a unified discipline that shows the deep relationships between programming paradigms. This innovative text presents computer programming as a unified discipline in a way that is both practical and scientifically sound. The book focuses on techniques of lasting value and explains them precisely in terms of a simple abstract machine. The book presents all major programming paradigms in a uniform framework that shows their deep relationships and how and where to use them together. After an introduction to programming concepts, the book presents both well-known and lesser-known computation models ("programming paradigms"). Each model has its own set of techniques and each is included on the basis of its usefulness in practice. The general models include declarative programming, declarative concurrency, message-passing concurrency, explicit state, object-oriented programming, shared-state concurrency, and relational programming. Specialized models include graphical user interface programming, distributed programming, and constraint programming. Each model is based on its kernel language—a simple core language that consists of a small number of programmer-significant elements. The kernel languages are introduced progressively, adding concepts one by one, thus showing the deep relationships between different models. The kernel languages are defined precisely in terms of a simple abstract machine. Because a wide variety of languages and programming paradigms can be modeled by a small set of closely related kernel languages, this approach allows programmer and student to grasp the underlying unity of programming. The book has many program fragments and exercises, all of which can be run on the Mozart Programming System, an Open Source software package that features an interactive incremental development environment.* **Programming Language Pragmatics** Morgan Kaufmann *Programming Language Pragmatics, Third Edition, is the most comprehensive programming language book available today. Taking the perspective that language design and implementation are tightly interconnected and that neither can be fully understood in isolation, this critically acclaimed and bestselling book has been thoroughly updated to cover the most recent developments in programming language design, inclouding Java 6 and 7, C++0X, C# 3.0, F#, Fortran 2003 and 2008, Ada 2005, and Scheme R6RS. A new chapter on run-time program management covers virtual machines, managed code, just-in-time and dynamic compilation, reflection, binary translation and rewriting, mobile code, sandboxing, and debugging and program analysis tools. Over 800 numbered examples are provided to help the reader quickly cross-reference and access content. This text is designed for undergraduate Computer Science students, programmers, and systems and software engineers. Classic programming foundations text now updated to familiarize students with the languages they are most likely to encounter in the workforce, including including Java 7, C++, C# 3.0, F#, Fortran 2008, Ada 2005, Scheme R6RS, and Perl 6. New and expanded coverage of concurrency and run-time systems ensures students and professionals understand the most important advances driving software today. Includes over 800 numbered*

examples to help the reader quickly cross-reference and access content. **Laser Spectroscopy IV Proceedings of the Fourth International Conference, Rottarch-Egern, Fed. Rep. of Germany, June 11-15, 1979** Springer Science & Business Media *Traditionally, the discipline of parallel computing has encompassed a wide range of topics ranging from machine organization all the way to applications. The Encyclopedia of Parallel Computing is likewise broad in scope, covering machine organization, programming, algorithms, and applications. Within each area, the Encyclopedia covers concepts, designs, and specific implementations. In the area of algorithms, the encyclopedia will cover (1) concepts such as cache-oblivious algorithms and systolic algorithms, (2) specific numerical and non-numerical algorithms such as parallel matrix-matrix multiplication and graph algorithms to, for example, find connected components in parallel, and (3) implementations of algorithms in the form of widely used libraries such as LAPACK. In the area of architecture, the encyclopedia will contain (1) concepts such as sequential consistency and cache coherency, (2) machine classes such as shared-memory multiprocessors and dataflow machines, and (3) specific machines such as IBM's cell processor and Intel's multicore machines. In the area of software, it will cover (1) concepts such as races and autoparallelization, and (2) designs in the form of parallel programming languages, library interfaces, and operating systems. The encyclopedia also will cover application issues emphasizing the type of parallel computation involved and the magnitude in terms of computational requirements of the applications.Each encyclopedia entry will be concise and clear and will contain references to the literature for readers wishing to study the topic of the entry in depth. The broad coverage--together with extensive pointers to the literature for in-depth study'will make the encyclopedia an invaluable reference tool for researchers, practitioners and students alike.* **Higher-Level Hardware Synthesis** Springer *In the mid 1960s, when a single chip contained an average of 50 transistors, Gordon Moore observed that integrated circuits were doubling in complexity every year. In an in?uential article published by Electronics Magazine in 1965, Moore predicted that this trend would continue for the next 10 years. Despite being criticized for its “unrealistic optimism,” Moore’s prediction has remained valid for far longer than even he imagined: today, chips built using state-- the-art techniques typically contain several million transistors. The advances in fabrication technology that have supported Moore’s law for four decades have fuelled the computer revolution. However,this exponential increase in transistor density poses new design challenges to engineers and computer scientists alike. New techniques for managing complexity must be developed if circuits are to take full advantage of the vast numbers of transistors available. In this monograph we investigate both (i) the design of high-level languages for hardware description, and (ii) techniques involved in translating these hi- level languages to silicon. We propose SAFL, a ?rst-order functional language designedspeci?callyforbehavioralhardwaredescription,anddescribetheimp- mentation of its associated silicon compiler. We show that the high-level pr- erties of SAFL allow one to exploit program analyses and optimizations that are not employed in existing synthesis systems. Furthermore, since SAFL fully abstracts the low-leveldetails of the implementation technology, we show how it can be compiled to a range of di?erent design styles including fully synchronous design and globally asynchronous locally synchronous (GALS) circuits.* **Implementation and Application of Functional Languages 23rd International Symposium, IFL 2011, Lawrence, KS, USA, October 3-5, 2011, Revised Selected Papers** Springer *This book constitutes the thoroughly refereed post-conference proceedings of the 23rd International Symposium on Implementation and Application of Functional Languages, IFL 2011, held in Lawrence, Kansas, USA, in October 2011. The 11 revised full papers presented were carefully reviewed and selected from 33 submissions. The papers by researchers and practitioners who are actively engaged in the implementation and the use of functional and function based programming languages describe practical and theoretical work as well as applications and tools. They discuss new ideas and concepts, as well as work in progress and results.* **High Performance Computing - HiPC 2004 11th International Conference, Bangalore, India, December 19-22, 2004, Proceedings** Springer *Annotation. This book constitutes the refereed proceedings of the 11th International Conference on High-Performance Computing, HiPC 2004, held in Bangalore, India in December 2004. The 48 revised full papers presented were carefully reviewed and selected from 253 submissions. The papers are organized in topical sections on wireless network management, compilers and runtime systems, high performance scientific applications, peer-to-peer and storage systems, high performance processors and routers, grids and storage systems, energy-aware and high-performance networking, and distributed algorithms.* **Programming Languages and Systems First Asian Symposium, APLAS 2003, Beijing, China, November 27-29, 2003, Proceedings** Springer *With warm-hearted and friendly promotion by our Japanese friends Prof. - sushi Ohori, Prof. Tetsuo Ida, and Prof. Zhenjiang Hu, and other distinguished professors and scholars from countries and regions such as Japan, South Korea, Singapore, and Taiwan, the 1st Asian Symposium on Programming Languages andSystems(APLAS2003)tookplaceinBeijing.Wereceived76papers,among which 24 were selected for the proceedings after serious evaluation, which fully demonstrates the high quality of the collected papers. I hereby, on behalf of the Program Committee and the Organization Committee of the symposium, would like to extend the warmest welcome and hearty thanks to all colleagues who attended the symposium, all scholars who generously contributed their papers, and all those who were actively dedicated to the organization of this symposium. Over the past decade, the Asian economy has undergone rapid development. Keeping pace with this accelerated economic growth, Asia has made great he- way in software, integrated circuits, mobile communication and the Internet. All this has laid a ?rm material foundation for undertaking theoretical research on computer science and programming languages. Therefore, to meet the incr- sing demands of the IT market, great opportunities and challenges in advanced research in these ?elds. I strongly believe that in the coming future, with the persistent e?orts of our colleagues, the Asian software industry and research on computer science will be important players in the world economy, on an equal footing with their counterparts in the United States and Europe.* **Programming Languages and Systems First Asian Symposium, APLAS 2003, Beijing, China, November 27-29, 2003, Proceedings** Springer Science & Business Media *This book constitutes the refereed proceedings of the First Asian Symposium on Programming Languages and Systems, APLAS 2003, held in Beijing, China in November 2003. The 24 revised full papers presented together with abstracts of 3 invited talks were carefully reviewed and selected from 75 submissions. The papers are devoted to concurrency and parallelism, language implementation and optimization, mobile computation and security, program analysis and verification, program transformation and calculation, programming paradigms and language design, programming techniques and applications, program semantics, categorical and logical foundations, tools and environments, type theory and type systems.* **Implementation and Application of Functional Languages 22nd International Symposium, IFL 2010, Alphen aan den Rijn, The Netherlands, September 1-3, 2010, Revised Selected Papers** Springer *This book constitutes the thoroughly refereed post-conference proceedings of the 22nd International Symposium on Implementation and Applications of Functional Languages, IFL 2010, held in Alphen aan den Rijn, The Netherlands, in September 2010. The 13 revised full papers presented were carefully reviewed and were selected from 31 submissions. The IFL symposia bring together researchers and practitioners that are actively engaged in the implementation and the use of functional and function based programming languages. Every year IFL provides a venue for the presentation and discussion of new ideas and concepts, of work in progress, and of publication-ripe results.* **Proceedings 20th International Conference Parallel Processing 1991** CRC Press **Network-Based Parallel Computing Communication, Architecture, and Applications Third International Workshop, CANPC'99, Orlando, Florida, USA, January 9th, 1999, Proceedings** Springer *Clusters of workstations/PCs connected by o?-the-shelf networks have become popular as a platform for cost-e?ective parallel computing. Hardware and so- ware technological advances have made this network-based parallel computing platform feasible. A large number of research groups from academia and industry are working to enhance the capabilities of such a platform, thereby improving its cost-e?ectiveness and usability. These developments are facilitating the mig- tion of many existing applications as well as the development of new applications on this platform. Continuing in the tradition of the two previously successful workshops, this 3rd Workshop on Communication, Architecture and Applications for Netwo- based Parallel Computing (CANPC’99) has brought together researchers and practitioners working in architecture, system software, applications and perf- mance evaluation to discuss state-of-the-art solutions for network-based parallel computing systems. This workshop has become an excellent forum for timely dissemination of ideas and healthy interaction on topics at the cutting edge in cluster computing technology. Each submitted paper underwent a rigorous review process, and was assigned to at least 3 reviewers, including at least 2 program committee members. Each paper received at least 2 reviews, most received 3 and some even had 4 reviews.* **Proceedings of the ... ACM SIGPLAN Haskell Workshop Parallel Computing Technologies 15th International Conference, PaCT 2019, Almaty, Kazakhstan, August 19–23, 2019, Proceedings** Springer *This book constitutes the proceedings of the 15th International Conference on Parallel Computing Technologies, PaCT 2019, held in Almaty, Kazakhstan, in August 2019. The 24 full papers and 10 short papers presented were carefully reviewed and selected from 72 submissions. The papers are organized in topical sections on Programming Languages and Execution Environments; Methods and Tools for Parallel Solution of Large-Scale Problems; Data Processing; Cellular Automata; and Distributed Algorithms.* **Search-Based Software Engineering 7th International Symposium, SSBSE 2015, Bergamo, Italy, September 5-7, 2015, Proceedings** Springer *This book constitutes the refereed proceedings of the 7th International Symposium on Search-Based Software Engineering, SSBSE 2015, held in Bergamo, Italy, in September 2015. The 12 revised full papers presented together with 2 invited talks, 4 short papers, 2 papers of the graduate track, and 13 challenge track papers were carefully reviewed and selected from 51 submissions. Search Based Software Engineering (SBSE) studies the application of meta-heuristic optimization techniques to various software engineering problems, ranging from requirements engineering to software testing and maintenance.* **Theoretical Computer Sciences Lectures given at a Summer School of the Centro Internazionale Matematico Estivo (C.I.M.E.) held in Bressanone (Bolzano), Italy, June 9-17, 1975** Springer Science & Business Media *R.E. Miller: Parallel program schemata.- D.E. Muller: Theory of automata.- R. Karp: Computational complexity of combinatorial and graph-theoretic problems.* **Parallel Computation and Computers for Artificial Intelligence** Springer Science & Business Media *It has been widely recognized that artificial intelligence computations offer large potential for distributed and parallel processing. Unfortunately, not much is known about designing parallel AI algorithms and efficient, easy-to-use parallel computer architectures for AI applications. The field of parallel computation and computers for AI is in its infancy, but some significant ideas have appeared and initial practical experience has become available. The purpose of this book has been to collect in one volume contributions from several leading researchers and pioneers of AI that represent a sample of these ideas and experiences. This sample does not include all schools of thought nor contributions from all leading researchers, but it covers a relatively wide variety of views and topics and in this sense can be helpful in assessing the state ofthe art. We hope that the book will serve, at least, as a pointer to more specialized literature and that it will stimulate interest in the area of parallel AI processing. It has been a great pleasure and a privilege to cooperate with all contributors to this volume. They have my warmest thanks and gratitude. Mrs. Birgitta Knapp has assisted me in the editorial task and demonstrated a great deal of skill and patience. Janusz S. Kowalik vii INTRODUCTION Artificial intelligence (AI) computer programs can be very time-consuming.* **Journal of Object-oriented Programming Indexical Parallel Programming [microform]** National Library of Canada = Bibliothèque nationale du Canada **Scientific and Technical Aerospace Reports Languages and Compilers for Parallel Computing 12th International Workshop, LCPC'99 La Jolla, CA, USA, August 4-6, 1999 Proceedings** Springer *In August 1999, the Twelfth Workshop on Languages and Compilers for P- allel Computing (LCPC) was hosted by the Hierarchical Tiling Research group from the Computer Science and Engineering Department at the University of California San Diego (UCSD). The workshop is an annual international forum for leading research groups to present their current research activities and the latest results. It has also been a place for researchers and practitioners to - teract closely and exchange ideas about future directions. Among the topics of interest to the workshop are language features, code generation, debugging, - timization, communication and distributed shared memory libraries, distributed object systems, resource management systems, integration of compiler and r- time systems, irregular and dynamic applications, and performance evaluation. In 1999, the workshop was held at the International Relations/Paci c Studies Auditorium and the San Diego Supercomputer Center at UCSD. Seventy-seven researchers from Australia, England, France, Germany, Korea, Spain, and the United States attended the workshop, an increase of over 50% from 1998.* **Proceedings of the Fifth SIAM Conference on Parallel Processing for Scientific Computing** SIAM *This text gives the proceedings for the fifth conference on parallel processing for scientific computing.* **Arrays, Functional Languages, and Parallel Systems** Springer Science & Business Media *During a meeting in Toronto last winter, Mike Jenkins, Bob Bernecky and I were discussing how the two existing theories on arrays influenced or were in fluenced by programming languages and systems. More's Army Theory was the basis for NIAL and APL2 and Mullin's A Mathematics of A rmys(MOA) , is being used as an algebra of arrays in functional and A-calculus based pro gramming languages. MOA was influenced by Iverson's initial and extended algebra, the foundations for APL and J respectively. We discussed that there is a lot of interest in the Computer Science and Engineering communities concerning formal methods for languages that could support massively parallel operations in scientific computing, a back to-roots interest for both Mike and myself. Languages for this domain can no longer be informally developed since it is necessary to map languages easily to many multiprocessor architectures. Software systems intended for parallel computation require a formal basis so that modifications can be done with relative ease while ensuring integrity in design. List based lan guages are profiting from theoretical foundations such as the Bird-Meertens formalism. Their theory has been successfully used to describe list based parallel algorithms across many classes of architectures.* **Peterson's Guide to Graduate Programs in Engineering and Applied Sciences Opportunities and Constraints of Parallel Computing** Springer

Science & Business Media *At the initiative of the IBM Almaden Research Center and the National Science Foundation, a workshop on "Opportunities and Constraints of Parallel Computing" was held in San Jose, California, on December 5-6, 1988. The Steering Committee of the workshop consisted of Prof. R. Karp (University of California at Berkeley), Prof. L. Snyder (University of Washington at Seattle), and Dr. J. L. C. Sanz (IBM Almaden Research Center). This workshop was intended to provide a vehicle for interaction for people in the technical community actively engaged in research on parallel computing. One major focus of the workshop was massive parallelism, covering theory and models of computing, algorithm design and analysis, routing architectures and interconnection networks, languages, and application requirements. More conventional issues involving the design and use of parallel computers with a few dozen processors were not addressed at the meeting. A driving force behind the realization of this workshop was the need for interaction between theoreticians and practitioners of parallel computation. Therefore, a group of selected participants from the theory community was invited to attend, together with well-known colleagues actively involved in parallelism from national laboratories, government agencies, and industry.* **American Doctoral Dissertations Dr. Dobb's Journal of Software Tools for the Professional Programmer Dr. Dobb's Journal Software Tools for the Professional Programmer Euro-Par 2012 Parallel Processing 18th International Conference, Euro-Par 2012, Rhodes Island, Greece, August 27-31, 2012. Proceedings** Springer *This book constitutes the thoroughly refereed proceedings of the 18th International Conference, Euro-Par 2012, held in Rhodes Islands, Greece, in August 2012. The 75 revised full papers presented were carefully reviewed and selected from 228 submissions. The papers are organized in topical sections on support tools and environments; performance prediction and evaluation; scheduling and load balancing; high-performance architectures and compilers; parallel and distributed data management; grid, cluster and cloud computing; peer to peer computing; distributed systems and algorithms; parallel and distributed programming; parallel numerical algorithms; multicore and manycore programming; theory and algorithms for parallel computation; high performance network and communication; mobile and ubiquitous computing; high performance and scientific applications; GPU and accelerators computing.* **Implementation of Functional Languages 9th International Workshop, IFL'97, St. Andrews, Scotland, UK, September 10-12, 1997, Selected Papers** Springer Science & Business Media *This book constitutes the thoroughly refereed post-workshop proceedings of the 9th International Workshop on Implementation of Functional Languages, IFL'97, held in St. Andrews, Scotland, UK, in September 1997. The 21 revised full papers presented were selected from the 34 papers accepted for presentation at the workshop during a second round of thorough a-posteriori reviewing. The book is divided in sections on compilation, types, benchmarking and profiling, parallelism, interaction, language design, and garbage collection.* **Trends in Functional Programming 12th International Symposium, TFP 2011, Madrid, Spain, May 16-18, 2011, Revised Selected Papers** Springer *This book constitutes the thoroughly refereed post-conference proceedings of the 12th International Symposium on Trends in Functional Programming, TFP 2011, held in Madrid, Spain, in May 2011. The 12 papers presented were carefully reviewed and selected from 21 submissions. They deal with all aspects of functional programming, taking a broad view of current and future trends in this area. The topical sections the papers are organized in are named as follows: types, compiling, paralelelism and distribution, data structures, and miscellaneous.* **Parallel Processing and Applied Mathematics 7th International Conference, PPAM 2007, Gdansk, Poland, September 9-12, 2007, Revised Selected Papers** Springer Science & Business Media *This book constitutes the thoroughly refereed post-conference proceedings of the 7th International Conference on Parallel Processing and Applied Mathematics, PPAM 2007, held in Gdansk, Poland, in September 2007. The 63 revised full papers of the main conference presented together with 85 revised workshop papers were carefully reviewed and selected from over 250 initial submissions. The papers are organized in topical sections on parallel/distributed architectures and mobile computing, numerical algorithms and parallel numerics, parallel and distributed non-numerical algorithms, environments and tools for as well as applications of parallel/distributed/grid computing, evolutionary computing, meta-heuristics and neural networks. The volume proceeds with the outcome of 11 workshops and minisymposia dealing with novel data formats and algorithms for dense linear algebra computations, combinatorial tools for parallel sparse matrix computations, grid applications and middleware, large scale computations on grids, models, algorithms and methodologies for grid-enabled computing environments, scheduling for parallel computing, language-based parallel programming models, performance evaluation of parallel applications on large-scale systems, parallel computational biology, high performance computing for engineering applications, and the minisymposium on interval analysis.* **AIAA Journal A Concise Introduction to Computer Languages Design, Experimentation, and Paradigms** Brooks/Cole Publishing Company *Daniel Cooke's new text provides an innovative approach that makes the teaching of methods and mathematical tools employed in designing a language accessible to students. Although many professors find this material to be important, some limit the coverage of language design topics as a result of students' struggles with mathematics. The author covers material on language syntax, language semantics, and language translation in the first half of the book, while relying on the mathematics students have learned in their previous classes. He continues to draw on this material throughout the book as needed - after students have received the background they need in the formal underpinnings of all languages. The author presents paradigms and languages in the context of language design. For instance, in Chapter 5 he introduces imperative and procedural programming as the foundations of other languages, along with input/output, if and else statements, loop statements, and arithmetics. As new paradigms are introduced, he revisits these basic constructs and discusses the decisions to add, modify, and/or delete them based on the problem solving abstraction. As a result, students are better able to grasp new languages by understanding their unique features as well as features shared with other languages.*