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Computer Architecture and Parallel Processing *McGraw-Hill College Computer Systems Organization -- Parallel architecture. Scalable Parallel Computing Technology, Architecture, Programming* *McGraw-Hill Science, Engineering & Mathematics* This comprehensive new text from author Kai Hwang covers four important aspects of parallel and distributed computing -- principles, technology, architecture, and programming -- and can be used for several upper-level courses. **Computer Architecture and Parallel Processing Distributed and Cloud Computing From Parallel Processing to the Internet of Things** *Morgan Kaufmann* **Distributed and Cloud Computing: From Parallel Processing to the Internet of Things** offers complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing. It is the first modern, up-to-date distributed systems textbook; it explains how to create high-performance, scalable, reliable systems, exposing the design principles, architecture, and innovative applications of parallel, distributed, and cloud computing systems. Topics covered by this book include: facilitating management, debugging, migration, and disaster recovery through virtualization; clustered systems for research or ecommerce applications; designing systems as web services; and social networking systems using peer-to-peer computing. The principles of cloud computing are discussed using examples from open-source and commercial applications, along with case studies from the leading

distributed computing vendors such as Amazon, Microsoft, and Google. Each chapter includes exercises and further reading, with lecture slides and more available online. This book will be ideal for students taking a distributed systems or distributed computing class, as well as for professional system designers and engineers looking for a reference to the latest distributed technologies including cloud, P2P and grid computing. Complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing Includes case studies from the leading distributed computing vendors: Amazon, Microsoft, Google, and more Explains how to use virtualization to facilitate management, debugging, migration, and disaster recovery Designed for undergraduate or graduate students taking a distributed systems course—each chapter includes exercises and further reading, with lecture slides and more available online Computer architecture and parallel processing Advanced Computer Architecture Parallelism Computer Architecture and Parallel Processing *McGraw-Hill Companies* Computer Architecture and Parallel Processing Advanced Computer Architecture Parallelism, Scalability, Programmability *McGraw-Hill Science, Engineering & Mathematics* This book deals with advanced computer architecture and parallel programming techniques. The material is suitable for use as a textbook in a one-semester graduate or senior course, offered by Computer Science, Computer Engineering, Electrical Engineering, or Industrial Engineering programs. Computer Architecture Pipelined and Parallel Processor Design *Jones & Bartlett Learning* Computer Architecture/Software Engineering Advanced Computer Architecture Parallelism, Scalability, Programmability Cloud Computing for Machine Learning and Cognitive Applications *MIT Press* The first textbook to teach students how to build data analytic solutions on large data sets using cloud-based technologies. This is the first textbook to teach students how to build data analytic solutions on large data sets (specifically in Internet of Things applications) using cloud-based technologies for data storage, transmission and mashup, and AI techniques to analyze this data. This textbook is designed to train college students to master modern cloud computing systems in operating principles, architecture design, machine learning algorithms, programming models and software tools for big data mining, analytics, and cognitive applications. The book will be suitable for use in one-semester computer science or electrical engineering courses on cloud computing, machine learning, cloud programming, cognitive computing, or big data science. The book will also be very useful as a reference for professionals who want to work in cloud computing and data science. Cloud and Cognitive Computing begins with two introductory chapters on fundamentals of cloud computing, data science, and adaptive computing that lay the foundation for the rest of the book. Subsequent chapters cover topics including cloud architecture, mashup services, virtual machines, Docker containers, mobile clouds, IoT and AI, inter-cloud mashups, and cloud performance and benchmarks, with a focus on Google's Brain

Project, DeepMind, and X-Lab programs, IBKai HwangM SyNapse, Bluemix programs, cognitive initiatives, and neurocomputers. The book then covers machine learning algorithms and cloud programming software tools and application development, applying the tools in machine learning, social media, deep learning, and cognitive applications. All cloud systems are illustrated with big data and cognitive application examples. Mins Performance for Parallel Processing *Lulu.com* The Performance of a system depends directly on the time required to perform an operation and number of these operations that can be performed concurrently. High performance computing systems can be designed using parallel processing. The effectiveness of these parallel systems rests primarily on the communication network linking processors and memory modules. Hence, an interconnection network that provides the desired connectivity and performance at minimum cost is required for communication in parallel processing systems. Multistage interconnection networks provide a compromise between shared bus and crossbar networks. Big-Data Analytics for Cloud, IoT and Cognitive Computing *John Wiley & Sons* The definitive guide to successfully integrating social, mobile, Big-Data analytics, cloud and IoT principles and technologies The main goal of this book is to spur the development of effective big-data computing operations on smart clouds that are fully supported by IoT sensing, machine learning and analytics systems. To that end, the authors draw upon their original research and proven track record in the field to describe a practical approach integrating big-data theories, cloud design principles, Internet of Things (IoT) sensing, machine learning, data analytics and Hadoop and Spark programming. Part 1 focuses on data science, the roles of clouds and IoT devices and frameworks for big-data computing. Big data analytics and cognitive machine learning, as well as cloud architecture, IoT and cognitive systems are explored, and mobile cloud-IoT-interaction frameworks are illustrated with concrete system design examples. Part 2 is devoted to the principles of and algorithms for machine learning, data analytics and deep learning in big data applications. Part 3 concentrates on cloud programming software libraries from MapReduce to Hadoop, Spark and TensorFlow and describes business, educational, healthcare and social media applications for those tools. The first book describing a practical approach to integrating social, mobile, analytics, cloud and IoT (SMACT) principles and technologies Covers theory and computing techniques and technologies, making it suitable for use in both computer science and electrical engineering programs Offers an extremely well-informed vision of future intelligent and cognitive computing environments integrating SMACT technologies Fully illustrated throughout with examples, figures and approximately 150 problems to support and reinforce learning Features a companion website with an instructor manual and PowerPoint slides www.wiley.com/go/hwangIOT Big-Data Analytics for Cloud, IoT and Cognitive Computing satisfies the demand among university faculty and students for cutting-edge information on emerging intelligent and cognitive computing systems

and technologies. Professionals working in data science, cloud computing and IoT applications will also find this book to be an extremely useful working resource. **Algorithms and Architectures for Parallel Processing 17th International Conference, ICA3PP 2017, Helsinki, Finland, August 21-23, 2017, Proceedings** *Springer* This book constitutes the proceedings of the 17th International Conference on Algorithms and Architectures for Parallel Processing, ICA3PP 2017, held in Helsinki, Finland, in August 2017. The 25 full papers presented were carefully reviewed and selected from 117 submissions. They cover topics such as parallel and distributed architectures; software systems and programming models; distributed and network-based computing; big data and its applications; parallel and distributed algorithms; applications of parallel and distributed computing; service dependability and security in distributed and parallel systems; service dependability and security in distributed and parallel systems; performance modeling and evaluation. This volume also includes 41 papers of four workshops, namely: the 4th International Workshop on Data, Text, Web, and Social Network Mining (DTWSM 2017), the 5th International Workshop on Parallelism in Bioinformatics (PBio 2017), the First International Workshop on Distributed Autonomous Computing in Smart City (DACSC 2017), and the Second International Workshop on Ultrascale Computing for Early Researchers (UCER 2017). **Advanced Computer Architectures** *CRC Press* Despite the tremendous advances in performance enabled by modern architectures, there are always new applications and demands arising that require ever-increasing capabilities. Keeping up with these demands requires a deep-seated understanding of contemporary architectures in concert with a fundamental understanding of basic principles that allows one to anticipate what will be possible over the system's lifetime. **Advanced Computer Architectures** focuses on the design of high performance supercomputers with balanced coverage of the hardware, software structures, and application characteristics. This book is a timeless distillation of underlying principles punctuated by real-world implementations in popular current and past commercially available systems. It briefly reviews the basics of uniprocessor architecture before outlining the most popular processing paradigms, performance evaluation, and cost factor considerations. This builds to a discussion of pipeline design and vector processors, data parallel architectures, and multiprocessor systems. Rounding out the book, the final chapter explores some important current and emerging trends such as Dataflow, Grid, biology-inspired, and optical computing. More than 220 figures, tables, and equations illustrate the concepts presented. Based on the author's more than thirty years of teaching and research, **Advanced Computer Architectures** endows you with the tools necessary to reach the limits of existing technology, and ultimately, to break them. **Computer Architecture Fundamentals and Principles of Computer Design** *CRC Press* Future computing professionals must become familiar with historical computer architectures because many of the same or similar techniques are still being used and may persist well into the future. **Computer**

Architecture: Fundamentals and Principles of Computer Design discusses the fundamental principles of computer design and performance enhancement that have proven effective and demonstrates how current trends in architecture and implementation rely on these principles while expanding upon them or applying them in new ways. Rather than focusing on a particular type of machine, this textbook explains concepts and techniques via examples drawn from various architectures and implementations. When necessary, the author creates simplified examples that clearly explain architectural and implementation features used across many computing platforms. Following an introduction that discusses the difference between architecture and implementation and how they relate, the next four chapters cover the architecture of traditional, single-processor systems that are still, after 60 years, the most widely used computing machines. The final two chapters explore approaches to adopt when single-processor systems do not reach desired levels of performance or are not suited for intended applications. Topics include parallel systems, major classifications of architectures, and characteristics of unconventional systems of the past, present, and future. This textbook provides students with a thorough grounding in what constitutes high performance and how to measure it, as well as a full familiarity in the fundamentals needed to make systems perform better. This knowledge enables them to understand and evaluate the many new systems they will encounter throughout their professional careers. **PARALLEL AND DISTRIBUTED COMPUTING : ARCHITECTURES AND ALGORITHMS** *PHI Learning Pvt. Ltd.* This concise text is designed to present the recent advances in parallel and distributed architectures and algorithms within an integrated framework. Beginning with an introduction to the basic concepts, the book goes on discussing the basic methods of parallelism exploitation in computation through vector processing, super scalar and VLIW processing, array processing, associative processing, systolic algorithms, and dataflow computation. After introducing interconnection networks, it discusses parallel algorithms for sorting, Fourier transform, matrix algebra, and graph theory. The second part focuses on basics and selected theoretical issues of distributed processing. Architectures and algorithms have been dealt in an integrated way throughout the book. The last chapter focuses on the different paradigms and issues of high performance computing making the reading more interesting. This book is meant for the senior level undergraduate and postgraduate students of computer science and engineering, and information technology. The book is also useful for the postgraduate students of computer science and computer application. **High Performance Computing and Communications Third International Conference, HPCC 2007, Houston, USA, September 26-28, 2007, Proceedings** *Springer Science & Business Media* This book constitutes the refereed proceedings of the Third International Conference on High Performance Computing and Communications, HPCC 2007, held in Houston, USA, September 26-28, 2007. The 75 revised full papers presented were carefully reviewed and selected from 272 submissions. The papers address all

current issues of parallel and distributed systems and high performance computing and communication as there are: networking protocols, routing, and algorithms, languages and compilers for HPC, parallel and distributed architectures and algorithms, embedded systems, wireless, mobile and pervasive computing, Web services and internet computing, peer-to-peer computing, grid and cluster computing, reliability, fault-tolerance, and security, performance evaluation and measurement, tools and environments for software development, distributed systems and applications, database applications and data mining, biological/molecular computing, collaborative and cooperative environments, and programming interfaces for parallel systems. *An Introduction to High-performance Scientific Computing MIT Press* Designed for undergraduates, *An Introduction to High-Performance Scientific Computing* assumes a basic knowledge of numerical computation and proficiency in Fortran or C programming and can be used in any science, computer science, applied mathematics, or engineering department or by practicing scientists and engineers, especially those associated with one of the national laboratories or supercomputer centers. This text evolved from a new curriculum in scientific computing that was developed to teach undergraduate science and engineering majors how to use high-performance computing systems (supercomputers) in scientific and engineering applications. Designed for undergraduates, *An Introduction to High-Performance Scientific Computing* assumes a basic knowledge of numerical computation and proficiency in Fortran or C programming and can be used in any science, computer science, applied mathematics, or engineering department or by practicing scientists and engineers, especially those associated with one of the national laboratories or supercomputer centers. The authors begin with a survey of scientific computing and then provide a review of background (numerical analysis, IEEE arithmetic, Unix, Fortran) and tools (elements of MATLAB, IDL, AVS). Next, full coverage is given to scientific visualization and to the architectures (scientific workstations and vector and parallel supercomputers) and performance evaluation needed to solve large-scale problems. The concluding section on applications includes three problems (molecular dynamics, advection, and computerized tomography) that illustrate the challenge of solving problems on a variety of computer architectures as well as the suitability of a particular architecture to solving a particular problem. Finally, since this can only be a hands-on course with extensive programming and experimentation with a variety of architectures and programming paradigms, the authors have provided a laboratory manual and supporting software via anonymous ftp. *Scientific and Engineering Computation series Algorithms and Computation 5th International Symposium, ISAAC '94, Beijing, P.R. China, August 25 - 27, 1994. Proceedings Springer Science & Business Media* This volume is the proceedings of the fifth International Symposium on Algorithms and Computation, ISAAC '94, held in Beijing, China in August 1994. The 79 papers accepted for inclusion in the volume after a careful reviewing process were selected from a total of almost 200 submissions. Besides many

internationally renowned experts, a number of excellent Chinese researchers present their results to the international scientific community for the first time here. The volume covers all relevant theoretical and many applicational aspects of algorithms and computation. **Grid and Cooperative Computing Second International Workshop, GCC 2003, Shanghai [sic], China, December 7-10, 2003 : Revised Papers** *Springer Science & Business Media* The two-volume set LNCS 3032 and LNCS 3033 constitute the thoroughly refereed post-proceedings of the Second International Workshop on Grid and Cooperative Computing, GCC 2003, held in Shanghai, China in December 2003. The 176 full papers and 173 poster papers presented were carefully selected from a total of over 550 paper submissions during two rounds of reviewing and revision. The papers are organized in topical sections on grid applications; peer-to-peer computing; grid architectures; grid middleware and toolkits; Web security and Web services; resource management, scheduling, and monitoring; network communication and information retrieval; grid QoS; algorithms, economic models, and theoretical models of the grid; semantic grid and knowledge grid; remote data access, storage, and sharing; and computer-supported cooperative work and cooperative middleware. **Network and Parallel Computing IFIP International Conference, NPC 2004, Wuhan, China, October 18-20, 2004. Proceedings** *Springer* This proceedings contains the papers presented at the 2004 IFIP International Conference on Network and Parallel Computing (NPC 2004), held at Wuhan, China, from October 18 to 20, 2004. The goal of the conference was to establish an international forum for engineers and scientists to present their ideas and experiences in network and parallel computing. A total of 338 submissions were received in response to the call for papers. These papers were from Australia, Brazil, Canada, China, Finland, France, Germany, Hong Kong, India, Iran, Italy, Japan, Korea, Luxemburg, Malaysia, Norway, Spain, Sweden, Taiwan, UK, and USA. Each submission was sent to at least three reviewers. Each paper was judged according to its originality, innovation, readability, and relevance to the expected audience. Based on the reviews received, a total of 69 papers were accepted to be included in the proceedings. Among the 69 papers, 46 were accepted as full papers and were presented at the conference. We also accepted 23 papers as short papers; each of these papers was given an opportunity to have a brief presentation at the conference, followed by discussions in a poster session. Thus, due to the limited scope and time of the conference and the high number of submissions received, only 20% of the total submissions were included in the final program. **Introduction to Parallel Computing** *Pearson Education* A complete source of information on almost all aspects of parallel computing from introduction, to architectures, to programming paradigms, to algorithms, to programming standards. It covers traditional Computer Science algorithms, scientific computing algorithms and data intensive algorithms. **Partitioning Strategy for Efficient Nonlinear Finite Element Dynamic Analysis on Multiprocessor Computers** *High-Performance Medical Image Processing* *CRC Press* The processing of medical images in a reasonable

timeframe and with high definition is very challenging. This volume helps to meet that challenge by presenting a thorough overview of medical imaging modalities, its processing, high-performance computing, and the need to embed parallelism in medical image processing techniques to achieve efficient and fast results. With contributions from researchers from prestigious laboratories and educational institutions, *High-Performance Medical Image Processing* provides important information on medical image processing techniques, parallel computing techniques, and embedding parallelism in different image processing techniques. A comprehensive review of parallel algorithms in medical image processing problems is a key feature of this book. The volume presents the relevant theoretical frameworks and the latest empirical research findings in the area and provides detailed descriptions about the diverse high-performance techniques. Topics discussed include parallel computing, multicore architectures and their applications in image processing, machine learning applications, conventional and advanced magnetic resonance imaging methods, hyperspectral image processing, algorithms for segmenting 2D slices for 3D viewing, and more. Case studies, such as on the detection of cancer tumors, expound on the information presented. Key features: Provides descriptions of different medical imaging modalities and their applications Discusses the basics and advanced aspects of parallel computing with different multicore architectures Expounds on the need for embedding data and task parallelism in different medical image processing techniques Presents helpful examples and case studies of the discussed methods This book will be valuable for professionals, researchers, and students working in the field of healthcare engineering, medical imaging technology, applications in machine and deep learning, and more. It is also appropriate for courses in computer engineering, biomedical engineering and electrical engineering based on artificial intelligence, parallel computing, high performance computing, and machine learning and its applications in medical imaging. *Parallel Computing for Bioinformatics and Computational Biology Models, Enabling Technologies, and Case Studies* John Wiley & Sons Discover how to streamline complex bioinformatics applications with parallel computing This publication enables readers to handle more complex bioinformatics applications and larger and richer data sets. As the editor clearly shows, using powerful parallel computing tools can lead to significant breakthroughs in deciphering genomes, understanding genetic disease, designing customized drug therapies, and understanding evolution. A broad range of bioinformatics applications is covered with demonstrations on how each one can be parallelized to improve performance and gain faster rates of computation. Current parallel computing techniques and technologies are examined, including distributed computing and grid computing. Readers are provided with a mixture of algorithms, experiments, and simulations that provide not only qualitative but also quantitative insights into the dynamic field of bioinformatics. *Parallel Computing for Bioinformatics and Computational Biology* is a contributed work that serves as a

repository of case studies, collectively demonstrating how parallel computing streamlines difficult problems in bioinformatics and produces better results. Each of the chapters is authored by an established expert in the field and carefully edited to ensure a consistent approach and high standard throughout the publication. The work is organized into five parts: * Algorithms and models * Sequence analysis and microarrays * Phylogenetics * Protein folding * Platforms and enabling technologies

Researchers, educators, and students in the field of bioinformatics will discover how high-performance computing can enable them to handle more complex data sets, gain deeper insights, and make new discoveries.

An Introduction to Parallel Programming *Morgan Kaufmann* **An Introduction to Parallel Programming, Second Edition** presents a tried-and-true tutorial approach that shows students how to develop effective parallel programs with MPI, Pthreads and OpenMP. As the first undergraduate text to directly address compiling and running parallel programs on multi-core and cluster architecture, this second edition carries forward its clear explanations for designing, debugging and evaluating the performance of distributed and shared-memory programs while adding coverage of accelerators via new content on GPU programming and heterogeneous programming. New and improved user-friendly exercises teach students how to compile, run and modify example programs. Takes a tutorial approach, starting with small programming examples and building progressively to more challenging examples Explains how to develop parallel programs using MPI, Pthreads and OpenMP programming models A robust package of online ancillaries for instructors and students includes lecture slides, solutions manual, downloadable source code, and an image bank

New to this edition: New chapters on GPU programming and heterogeneous programming New examples and exercises related to parallel algorithms

Expert Systems and Related Topics Selected Bibliography and Guide to Information Sources *IGI Global* This comprehensive reference to all areas of expert systems and applications, plus advanced related topics, lets you spend your time reading expert systems literature rather than searching for it. It gives you a source of historical perspectives and outlooks on the future of the field. Whether you are a manager, a developer or an end user or researcher, **Expert Systems and Related Topics: Selected Bibliography & Guide to Information Sources** puts all the sources of expert systems literature at your fingertips.

NASA Technical Paper Computational Intelligence for Modelling, Control & Automation Intelligent Image Processing, Data Analysis & Information Retrieval *IOS Press* This edited volume is dedicated to the theory and applications of Computational Intelligence techniques for Intelligent Image Processing, Data Analysis and Information Retrieval. It consists of 52 accepted research papers from the 1999 International Conference on Computational Intelligence for Modeling, Control and Automation - CIMCA'99. The goal of this conference was to provide a medium for the exchange of ideas between theoreticians and practitioners to address the important issues in computational intelligence for modelling, control and

automation. The research papers presented in this book cover new techniques and applications in the of Image Processing, Computer Vision, Multimedia Systems, Filtering, Classification, Data Analysis, Prediction, Intelligent Database and Information Retrievals. Performance Evaluation, Prediction and Visualization of Parallel Systems *Springer Science & Business Media* Performance Evaluation, Prediction and Visualization in Parallel Systems presents a comprehensive and systematic discussion of theoretics, methods, techniques and tools for performance evaluation, prediction and visualization of parallel systems. Chapter 1 gives a short overview of performance degradation of parallel systems, and presents a general discussion on the importance of performance evaluation, prediction and visualization of parallel systems. Chapter 2 analyzes and defines several kinds of serial and parallel runtime, points out some of the weaknesses of parallel speedup metrics, and discusses how to improve and generalize them. Chapter 3 describes formal definitions of scalability, addresses the basic metrics affecting the scalability of parallel systems, discusses scalability of parallel systems from three aspects: parallel architecture, parallel algorithm and parallel algorithm-architecture combinations, and analyzes the relations of scalability and speedup. Chapter 4 discusses the methodology of performance measurement, describes the benchmark- oriented performance test and analysis and how to measure speedup and scalability in practice. Chapter 5 analyzes the difficulties in performance prediction, discusses application-oriented and architecture-oriented performance prediction and how to predict speedup and scalability in practice. Chapter 6 discusses performance visualization techniques and tools for parallel systems from three stages: performance data collection, performance data filtering and performance data visualization, and classifies the existing performance visualization tools. Chapter 7 describes parallel compiling-based, search-based and knowledge-based performance debugging, which assists programmers to optimize the strategy or algorithm in their parallel programs, and presents visual programming-based performance debugging to help programmers identify the location and cause of the performance problem. It also provides concrete suggestions on how to modify their parallel program to improve the performance. Chapter 8 gives an overview of current interconnection networks for parallel systems, analyzes the scalability of interconnection networks, and discusses how to measure and improve network performances. Performance Evaluation, Prediction and Visualization in Parallel Systems serves as an excellent reference for researchers, and may be used as a text for advanced courses on the topic. Introduction to Parallel Programming *Cambridge University Press* In modern computer science, there exists no truly sequential computing system; and most advanced programming is parallel programming. This is particularly evident in modern application domains like scientific computation, data science, machine intelligence, etc. This lucid introductory textbook will be invaluable to students of computer science and technology, acting as a self-contained primer to parallel programming. It takes the

reader from introduction to expertise, addressing a broad gamut of issues. It covers different parallel programming styles, describes parallel architecture, includes parallel programming frameworks and techniques, presents algorithmic and analysis techniques and discusses parallel design and performance issues. With its broad coverage, the book can be useful in a wide range of courses; and can also prove useful as a ready reckoner for professionals in the field.

Scheduling in Distributed Computing Systems Analysis, Design and Models *Springer Science & Business Media* This book intends to inculcate the innovative ideas for the scheduling aspect in distributed computing systems. Although the models in this book have been designed for distributed systems, the same information is applicable for any type of system. The book will dramatically improve the design and management of the processes for industry professionals. It deals exclusively with the scheduling aspect, which finds little space in other distributed operating system books. Structured for a professional audience composed of researchers and practitioners in industry, this book is also suitable as a reference for graduate-level students.

Computer Architecture A Quantitative Approach *Elsevier* The computing world today is in the middle of a revolution: mobile clients and cloud computing have emerged as the dominant paradigms driving programming and hardware innovation today. The Fifth Edition of **Computer Architecture** focuses on this dramatic shift, exploring the ways in which software and technology in the cloud are accessed by cell phones, tablets, laptops, and other mobile computing devices. Each chapter includes two real-world examples, one mobile and one datacenter, to illustrate this revolutionary change. Updated to cover the mobile computing revolution Emphasizes the two most important topics in architecture today: memory hierarchy and parallelism in all its forms. Develops common themes throughout each chapter: power, performance, cost, dependability, protection, programming models, and emerging trends ("What's Next") Includes three review appendices in the printed text. Additional reference appendices are available online. Includes updated Case Studies and completely new exercises.

High Performance Computing - HiPC'99 6th International Conference, Calcutta, India, December 17-20, 1999 Proceedings *Springer* These are the proceedings of the Sixth International Conference on High Performance Computing (HiPC'99) held December 17-20 in Calcutta, India. The meeting serves as a forum for presenting current work by researchers from around the world as well as highlighting activities in Asia in the high performance computing area. The meeting emphasizes both the design and the analysis of high performance computing systems and their scientific, engineering, and commercial applications. Topics covered in the meeting series include: Parallel Algorithms Scientific Computation Parallel Architectures Visualization Parallel Languages & Compilers Network and Cluster Based Computing Distributed Systems Signal & Image Processing Systems Programming Environments Supercomputing Applications Memory Systems Internet and WWW-based Computing Multimedia and High Speed Networks Scalable Servers We would like to thank

Alfred Hofmann and Ruth Abraham of Springer-Verlag for their excellent support in bringing out the proceedings. The detailed messages from the steering committee chair, general co-chair and program chair pay tribute to numerous volunteers who helped us in organizing the meeting.

October 1999 Viktor K. Prasanna Bhabani Sinha Prithviraj Banerjee Message from the Steering Chair It is my pleasure to welcome you to the Sixth International Conference on High Performance Computing. I hope you enjoy the meeting, the rich cultural heritage of Calcutta, as well as the mother Ganges, "the river of life".

Computer Arithmetic Principles, Architecture, and Design *John Wiley & Sons*

Soft Computing and Intelligent Systems Theory and Applications *Elsevier*

The field of soft computing is emerging from the cutting edge research over the last ten years devoted to fuzzy engineering and genetic algorithms. The subject is being called soft computing and computational intelligence. With acceptance of the research fundamentals in these important areas, the field is expanding into direct applications through engineering and systems science. This book cover the fundamentals of this emerging field, as well as direct applications and case studies. There is a need for practicing engineers, computer scientists, and system scientists to directly apply "fuzzy" engineering into a wide array of devices and systems.

INTRODUCTION TO PARALLEL PROCESSING *PHI Learning Pvt. Ltd.*

Written with a straightforward and student-centred approach, this extensively revised, updated and enlarged edition presents a thorough coverage of the various aspects of parallel processing including parallel processing architectures, programmability issues, data dependency analysis, shared memory programming, thread-based implementation, distributed computing, algorithms, parallel programming languages, debugging, parallelism paradigms, distributed databases as well as distributed operating systems. The book, now in its second edition, not only provides sufficient practical exposure to the programming issues but also enables its readers to make realistic attempts at writing parallel programs using easily available software tools. With all the latest information incorporated and several key pedagogical attributes included, this textbook is an invaluable learning tool for the undergraduate and postgraduate students of computer science and engineering. It also caters to the students pursuing master of computer application.

What's New to the Second Edition

- A new chapter named Using Parallelism Effectively has been added covering a case study of parallelising a sorting program, and introducing commonly used parallelism models.
- Sections describing the map-reduce model, top-500.org initiative, Indian efforts in supercomputing, OpenMP system for shared memory programming, etc. have been added.
- Numerous sections have been updated with current information.
- Several questions have been incorporated in the chapter-end exercises to guide students from examination and practice points of view.

Information, Organization and Management *Springer Science & Business Media*

This book offers a comprehensive treatment of the economic and technical foundations for new organizational forms, relations and processes. It provides a wide range of

underlying concepts and frameworks that help the reader understand the major forces driving organizational and marketplace change, rather than presenting these changes as simple outcomes of technological or management fads. Contains case studies are included.