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## KEY=HWANG - HOWARD LESTER

### ADVANCED COMPUTER ARCHITECTURE

#### PARALLELISM

#### 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.

#### 2000 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING

#### SILVER ANNIVERSARY, PROCEEDINGS, 5-9 JUNE 2000, HILTON HOTEL AND CONVENTION CENTER, ISTANBUL, TURKEY

#### CYBERSECURITY AND PRIVACY IN CYBER PHYSICAL SYSTEMS

CRC Press Cybersecurity and Privacy in Cyber-Physical Systems collects and reports on recent high-quality research that addresses different problems related to cybersecurity and privacy in cyber-physical systems (CPSs). It Presents high-quality contributions addressing related theoretical and practical aspects Improves the reader's awareness of cybersecurity and privacy in CPSs Analyzes and presents the state of the art of CPSs, cybersecurity, and related technologies and methodologies Highlights and discusses recent developments and emerging trends in cybersecurity and privacy in CPSs Proposes new models, practical solutions, and technological advances related to cybersecurity and privacy in CPSs Discusses new cybersecurity and privacy models, prototypes, and protocols for CPSs This comprehensive book promotes high-quality research by bringing together researchers and experts in CPS security and privacy from around the world to share their knowledge of the different aspects of CPS security. Cybersecurity and Privacy in Cyber-Physical Systems is ideally suited for policymakers, industrial engineers, researchers, academics, and professionals seeking a thorough understanding of the principles of cybersecurity and privacy in CPSs. They will learn about promising solutions to these research problems and identify unresolved and challenging problems for their own research. Readers will also have an overview of CPS cybersecurity and privacy design.

#### ADVANCED COMPUTER ARCHITECTURE

#### PARALLELISM, SCALABILITY, PROGRAMMABILITY

#### FOURTH INTERNATIONAL CONFERENCE ON HIGH PERFORMANCE COMPUTING

#### PROCEEDINGS, DECEMBER 18-21, 1997, BANGALORE, INDIA

IEEE Computer Society This text on high-performance computing includes coverage of the topics: applications; I/O and compilers; scientific computing; data and file management; interconnection networks; compilers; image and signal processing; distributed systems; algorithms; architecture; and parallel programming.

#### 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 BOOKS AND SERIALS IN PRINT

#### 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.

#### SOLUTIONS MANUAL TO ACCOMPANY: HWANG ADVANCED COMPUTER ARCHITECTURE

#### PARALLELISM, SCALABILITY, PROGRAMMABILITY

This is the instructor's manual to a text which presents the latest technologies for parallel processing and high performance computing. The main text deals with advanced computer architecture and parallel processing systems and techniques, providing an integrated study of computer hardware and software systems, and the material is suitable for use on courses found in computer science, computer engineering, or electrical engineering departments. This material is only available to lecturers.

#### HIGH-PERFORMANCE COMPUTING IN ENGINEERING: APPLICATIONS TO PARTIAL DIFFERENTIAL EQUATIONS

Computational Mechanics

#### FORTHCOMING BOOKS

#### 13TH INTERNATIONAL PARALLEL PROCESSING SYMPOSIUM & 10TH SYMPOSIUM ON PARALLEL AND DISTRIBUTED PROCESSING

#### IPPS/SPDP 1999 : PROCEEDINGS : APRIL 12-16, 1999, SAN JUAN, PUERTO RICO

IEEE Contains 113 papers presented at the April 1999 meetings. Arrangement is in 21 sections covering such topics as: algorithmic paradigms and primitives; latency tolerance and performance modeling; communication, run-time systems; scalable computing; communication and protocols for clusters; communication libraries; routing and broadcasting;

miscellaneous architecture; advanced software for applications support; scientific engineering systems; signal processing; data mining and databases; and biological and discrete systems. Also included are abstracts of the panel discussions and the two keynote addresses from each of the symposiums. No subject index. Annotation copyrighted by Book News, Inc., Portland, OR

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#### A SCALABLE ALGORITHM FOR NON-SYMMETRIC EIGENVALUE PROBLEM

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#### BOOKS IN PRINT SUPPLEMENT

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#### CLOUD COMPUTING FOR MACHINE LEARNING AND COGNITIVE APPLICATIONS

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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.

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#### CHOICE

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#### FUNDAMENTALS OF POWER ELECTRONICS

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Springer Science & Business Media Fundamentals of Power Electronics, Second Edition, is an up-to-date and authoritative text and reference book on power electronics. This new edition retains the original objective and philosophy of focusing on the fundamental principles, models, and technical requirements needed for designing practical power electronic systems while adding a wealth of new material. Improved features of this new edition include: A new chapter on input filters, showing how to design single and multiple section filters; Major revisions of material on averaged switch modeling, low-harmonic rectifiers, and the chapter on AC modeling of the discontinuous conduction mode; New material on soft switching, active-clamp snubbers, zero-voltage transition full-bridge converter, and auxiliary resonant commutated pole. Also, new sections on design of multiple-winding magnetic and resonant inverter design; Additional appendices on Computer Simulation of Converters using averaged switch modeling, and Middlebrook's Extra Element Theorem, including four tutorial examples; and Expanded treatment of current programmed control with complete results for basic converters, and much more. This edition includes many new examples, illustrations, and exercises to guide students and professionals through the intricacies of power electronics design. Fundamentals of Power Electronics, Second Edition, is intended for use in introductory power electronics courses and related fields for both senior undergraduates and first-year graduate students interested in converter circuits and electronics, control systems, and magnetic and power systems. It will also be an invaluable reference for professionals working in power electronics, power conversion, and analogue and digital electronics.

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#### BIG-DATA ANALYTICS FOR CLOUD, IOT AND COGNITIVE COMPUTING

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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](http://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.

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#### SYSTEMS ANALYSIS AND SIMULATION 1985: THEORY AND FOUNDATIONS

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#### SYSTEMS ANALYSIS AND SIMULATION 1985

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#### PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM HELD IN BERLIN (GDR), AUGUST 26-31, 1985

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#### SYSTEMS ANALYSIS AND SIMULATION

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#### BOOKS IN PRINT

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#### INTERNATIONAL AEROSPACE ABSTRACTS

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#### MATHEMATICAL REVIEWS

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#### COMPUTER ORGANIZATION AND DESIGN

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PHI Learning Pvt. Ltd. The merging of computer and communication technologies with consumer electronics has opened up new vistas for a wide variety of designs of computing systems for diverse application areas. This revised and updated third edition on Computer Organization and Design strives to make the students keep pace with the changes, both in technology and pedagogy in the fast growing discipline of computer science and engineering. The basic principles of how the intended behaviour of complex functions can be realized with the interconnected network of digital blocks are explained in an easy-to-understand style. WHAT IS NEW TO THIS EDITION : Includes a new chapter on Computer Networking, Internet, and Wireless Networks. Introduces topics such as wireless input-output devices, RAID technology built around disk arrays, USB, SCSI, etc. Key Features Provides a large number of design problems and their solutions in each chapter. Presents state-of-the-art memory technology which includes EEPROM and Flash Memory apart from Main Storage, Cache, Virtual Memory, Associative Memory, Magnetic Bubble, and Charged Couple Device. Shows how the basic data types and data structures are supported in hardware. Besides students, practising engineers should find reading this design-oriented text both useful and rewarding.

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#### INSIDE THE MACHINE

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#### AN ILLUSTRATED INTRODUCTION TO MICROPROCESSORS AND COMPUTER ARCHITECTURE

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No Starch Press Om hvordan mikroprocessorer fungerer, med undersøgelse af de nyeste mikroprocessorer fra Intel, IBM og Motorola.

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#### LESIKAR'S BUSINESS COMMUNICATION

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#### CONNECTING IN A DIGITAL WORLD

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Irwin/McGraw-Hill Business Communication: Making Connections in a Digital World, 12/e by Lesikar, Flatley, and Rentz provides both student and instructor with all the tools needed to navigate through the complexity of the modern business communication environment. At their disposal, teachers have access to an online Tools & Techniques Blog that continually keeps them abreast of the latest research and developments in the field while providing a host of teaching materials. Business Communication attends to the dynamic, fast-paced, and ever-changing means by which business communication occurs by being the most technologically current and pedagogically effective books in the field. It has realistic examples that are both consumer-and business-oriented.

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#### ADVANCED COMPUTER ARCHITECTURE AND PARALLEL PROCESSING

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John Wiley & Sons Computer architecture deals with the physical configuration, logical structure, formats, protocols, and operational sequences for processing data, controlling the configuration, and controlling the operations over a computer. It also encompasses word lengths, instruction codes, and the interrelationships among the main parts of a computer or group of computers. This two-volume set offers a comprehensive coverage of the field of computer organization and architecture.

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## INTRODUCTION TO PARALLEL PROCESSING

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### ALGORITHMS AND ARCHITECTURES

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Springer Science & Business Media **THE CONTEXT OF PARALLEL PROCESSING** The field of digital computer architecture has grown explosively in the past two decades. Through a steady stream of experimental research, tool-building efforts, and theoretical studies, the design of an instruction-set architecture, once considered an art, has been transformed into one of the most quantitative branches of computer technology. At the same time, better understanding of various forms of concurrency, from standard pipelining to massive parallelism, and invention of architectural structures to support a reasonably efficient and user-friendly programming model for such systems, has allowed hardware performance to continue its exponential growth. This trend is expected to continue in the near future. This explosive growth, linked with the expectation that performance will continue its exponential rise with each new generation of hardware and that (in stark contrast to software) computer hardware will function correctly as soon as it comes off the assembly line, has its down side. It has led to unprecedented hardware complexity and almost intolerable development costs. The challenge facing current and future computer designers is to institute simplicity where we now have complexity; to use fundamental theories being developed in this area to gain performance and ease-of-use benefits from simpler circuits; to understand the interplay between technological capabilities and limitations, on the one hand, and design decisions based on user and application requirements on the other.

### NEURAL ENGINEERING

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Springer Science & Business Media **Neural Engineering, 2nd Edition**, contains reviews and discussions of contemporary and relevant topics by leading investigators in the field. It is intended to serve as a textbook at the graduate and advanced undergraduate level in a bioengineering curriculum. This principles and applications approach to neural engineering is essential reading for all academics, biomedical engineers, neuroscientists, neurophysiologists, and industry professionals wishing to take advantage of the latest and greatest in this emerging field.

### PARALLEL PROCESSING FOR SUPERCOMPUTERS AND ARTIFICIAL INTELLIGENCE

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McGraw-Hill Companies

### ADVANCED COMPUTER ARCHITECTURES: A DESIGN SPACE APPROACH

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Pearson Education India

### THE COMPUTER ENGINEERING HANDBOOK

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CRC Press **There is arguably no field in greater need of a comprehensive handbook than computer engineering.** The unparalleled rate of technological advancement, the explosion of computer applications, and the now-in-progress migration to a wireless world have made it difficult for engineers to keep up with all the developments in specialties outside their own

### MODERN PROCESSOR DESIGN

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### FUNDAMENTALS OF SUPERSCALAR PROCESSORS

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Waveland Press **Conceptual and precise, Modern Processor Design brings together numerous microarchitectural techniques in a clear, understandable framework that is easily accessible to both graduate and undergraduate students.** Complex practices are distilled into foundational principles to reveal the authors insights and hands-on experience in the effective design of contemporary high-performance micro-processors for mobile, desktop, and server markets. Key theoretical and foundational principles are presented in a systematic way to ensure comprehension of important implementation issues. The text presents fundamental concepts and foundational techniques such as processor design, pipelined processors, memory and I/O systems, and especially superscalar organization and implementations. Two case studies and an extensive survey of actual commercial superscalar processors reveal real-world developments in processor design and performance. A thorough overview of advanced instruction flow techniques, including developments in advanced branch predictors, is incorporated. Each chapter concludes with homework problems that will institute the groundwork for emerging techniques in the field and an introduction to multiprocessor systems.

### THE ADVERTISING RED BOOKS: BUSINESS CLASSIFICATIONS

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### NANOSCALE MATERIALS

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Springer Science & Business Media **Organized nanoassemblies of inorganic nanoparticles and organic molecules are building blocks of nanodevices, whether they are designed to perform molecular level computing, sense the environment or improve the catalytic properties of a material.** The key to creation of these hybrid nanostructures lies in understanding the chemistry at a fundamental level. This book serves as a reference book for researchers by providing fundamental understanding of many nanoscopic materials.

### ESSENTIALS OF COMPUTER ARCHITECTURE, SECOND EDITION

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CRC Press **This easy to read textbook provides an introduction to computer architecture, while focusing on the essential aspects of hardware that programmers need to know.** The topics are explained from a programmer's point of view, and the text emphasizes consequences for programmers. Divided in five parts, the book covers the basics of digital logic, gates, and data paths, as well as the three primary aspects of architecture: processors, memories, and I/O systems. The book also covers advanced topics of parallelism, pipelining, power and energy, and performance. A hands-on lab is also included. The second edition contains three new chapters as well as changes and updates throughout.

### COMPUTER ARITHMETIC

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### PRINCIPLES, ARCHITECTURE, AND DESIGN

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### COMPUTER ARCHITECTURE

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### PIPELINED AND PARALLEL PROCESSOR DESIGN

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Jones & Bartlett Learning **Computer Architecture/Software Engineering**