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KEY=EDITION - PONCE MAURICE

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.

COMPUTER ORGANIZATION AND DESIGN RISC-V EDITION

THE HARDWARE SOFTWARE INTERFACE

Morgan Kaufmann The new RISC-V Edition of Computer Organization and Design features the RISC-V open source instruction set architecture, the first open source architecture designed to be used in modern computing environments such as cloud computing, mobile devices, and other embedded systems. With the post-PC era now upon us, Computer Organization and Design moves forward to explore this generational change with examples, exercises, and material highlighting the emergence of mobile computing and the Cloud. Updated content featuring tablet computers, Cloud infrastructure, and the x86 (cloud computing) and ARM (mobile computing devices) architectures is included. An online companion Web site provides advanced content for further study, appendices, glossary, references, and recommended reading. Features RISC-V, the first such architecture designed to be used in modern computing environments, such as cloud computing, mobile devices, and other embedded systems Includes relevant examples, exercises, and material highlighting the emergence of mobile computing and the cloud

COMPUTER ORGANIZATION AND DESIGN

THE HARDWARE/SOFTWARE INTERFACE

Elsevier "Presents the fundamentals of hardware technologies, assembly language, computer arithmetic, pipelining, memory hierarchies and I/O"--

COMPUTER ORGANIZATION

New York ; Toronto : McGraw-Hill

COMPUTER ARCHITECTURE

A QUANTITATIVE APPROACH

Morgan Kaufmann Computer Architecture: A Quantitative Approach, Sixth Edition has been considered essential reading by instructors, students and practitioners of computer design for over 20 years. The sixth edition of this classic textbook from Hennessy and Patterson, winners of the 2017 ACM A.M. Turing Award recognizing contributions of lasting and major technical importance to the

computing field, is fully revised with the latest developments in processor and system architecture. The text now features examples from the RISC-V (RISC Five) instruction set architecture, a modern RISC instruction set developed and designed to be a free and openly adoptable standard. It also includes a new chapter on domain-specific architectures and an updated chapter on warehouse-scale computing that features the first public information on Google's newest WSC. True to its original mission of demystifying computer architecture, this edition continues the longstanding tradition of focusing on areas where the most exciting computing innovation is happening, while always keeping an emphasis on good engineering design. Winner of a 2019 Textbook Excellence Award (Texty) from the Textbook and Academic Authors Association Includes a new chapter on domain-specific architectures, explaining how they are the only path forward for improved performance and energy efficiency given the end of Moore's Law and Dennard scaling Features the first publication of several DSAs from industry Features extensive updates to the chapter on warehouse-scale computing, with the first public information on the newest Google WSC Offers updates to other chapters including new material dealing with the use of stacked DRAM; data on the performance of new NVIDIA Pascal GPU vs. new AVX-512 Intel Skylake CPU; and extensive additions to content covering multicore architecture and organization Includes "Putting It All Together" sections near the end of every chapter, providing real-world technology examples that demonstrate the principles covered in each chapter Includes review appendices in the printed text and additional reference appendices available online Includes updated and improved case studies and exercises ACM named John L. Hennessy and David A. Patterson, recipients of the 2017 ACM A.M. Turing Award for pioneering a systematic, quantitative approach to the design and evaluation of computer architectures with enduring impact on the microprocessor industry

COMPUTER ORGANIZATION AND DESIGN

THE HARDWARE/SOFTWARE INTERFACE, THIRD EDITION

Elsevier This best selling text on computer organization has been thoroughly updated to reflect the newest technologies. Examples highlight the latest processor designs, benchmarking standards, languages and tools. As with previous editions, a MIPS processor is the core used to present the fundamentals of hardware technologies at work in a computer system. The book presents an entire MIPS instruction set—instruction by instruction—the fundamentals of assembly language, computer arithmetic, pipelining, memory hierarchies and I/O. A new aspect of the third edition is the explicit connection between program performance and CPU performance. The authors show how hardware and software components--such as the specific algorithm, programming language, compiler, ISA and processor implementation--impact program performance. Throughout the book a new feature focusing on program performance describes how to search for bottlenecks and improve performance in various parts of the system. The book digs deeper into the hardware/software interface, presenting a complete view of the function of the programming language and compiler--crucial for

understanding computer organization. A CD provides a toolkit of simulators and compilers along with tutorials for using them. For instructor resources click on the grey "companion site" button found on the right side of this page. This new edition represents a major revision. New to this edition: * Entire Text has been updated to reflect new technology * 70% new exercises. * Includes a CD loaded with software, projects and exercises to support courses using a number of tools * A new interior design presents defined terms in the margin for quick reference * A new feature, "Understanding Program Performance" focuses on performance from the programmer's perspective * Two sets of exercises and solutions, "For More Practice" and "In More Depth," are included on the CD * "Check Yourself" questions help students check their understanding of major concepts * "Computers In the Real World" feature illustrates the diversity of uses for information technology *More detail below...

COMPUTER ARCHITECTURE

A QUANTITATIVE APPROACH

Elsevier This best-selling title, considered for over a decade to be essential reading for every serious student and practitioner of computer design, has been updated throughout to address the most important trends facing computer designers today. In this edition, the authors bring their trademark method of quantitative analysis not only to high performance desktop machine design, but also to the design of embedded and server systems. They have illustrated their principles with designs from all three of these domains, including examples from consumer electronics, multimedia and web technologies, and high performance computing. The book retains its highly rated features: Fallacies and Pitfalls, which share the hard-won lessons of real designers; Historical Perspectives, which provide a deeper look at computer design history; Putting it all Together, which present a design example that illustrates the principles of the chapter; Worked Examples, which challenge the reader to apply the concepts, theories and methods in smaller scale problems; and Cross-Cutting Issues, which show how the ideas covered in one chapter interact with those presented in others. In addition, a new feature, Another View, presents brief design examples in one of the three domains other than the one chosen for Putting It All Together. The authors present a new organization of the material as well, reducing the overlap with their other text, Computer Organization and Design: A Hardware/Software Approach 2/e, and offering more in-depth treatment of advanced topics in multithreading, instruction level parallelism, VLIW architectures, memory hierarchies, storage devices and network technologies. Also new to this edition, is the adoption of the MIPS 64 as the instruction set architecture. In addition to several online appendixes, two new appendixes will be printed in the book: one contains a complete review of the basic concepts of pipelining, the other provides solutions a selection of the exercises. Both will be invaluable to the student or professional learning on her own or in the classroom. Hennessy and Patterson continue to focus on fundamental techniques for designing real machines and for maximizing their

cost/performance. * Presents state-of-the-art design examples including: * IA-64 architecture and its first implementation, the Itanium * Pipeline designs for Pentium III and Pentium IV * The cluster that runs the Google search engine * EMC storage systems and their performance * Sony Playstation 2 * Infiniband, a new storage area and system area network * SunFire 6800 multiprocessor server and its processor the UltraSPARC III * Trimedia TM32 media processor and the Transmeta Crusoe processor * Examines quantitative performance analysis in the commercial server market and the embedded market, as well as the traditional desktop market. Updates all the examples and figures with the most recent benchmarks, such as SPEC 2000. * Expands coverage of instruction sets to include descriptions of digital signal processors, media processors, and multimedia extensions to desktop processors. * Analyzes capacity, cost, and performance of disks over two decades. Surveys the role of clusters in scientific computing and commercial computing. * Presents a survey, taxonomy, and the benchmarks of errors and failures in computer systems. * Presents detailed descriptions of the design of storage systems and of clusters. * Surveys memory hierarchies in modern microprocessors and the key parameters of modern disks. * Presents a glossary of networking terms.

ARM SYSTEM DEVELOPER'S GUIDE

DESIGNING AND OPTIMIZING SYSTEM SOFTWARE

Elsevier Over the last ten years, the ARM architecture has become one of the most pervasive architectures in the world, with more than 2 billion ARM-based processors embedded in products ranging from cell phones to automotive braking systems. A world-wide community of ARM developers in semiconductor and product design companies includes software developers, system designers and hardware engineers. To date no book has directly addressed their need to develop the system and software for an ARM-based system. This text fills that gap. This book provides a comprehensive description of the operation of the ARM core from a developer's perspective with a clear emphasis on software. It demonstrates not only how to write efficient ARM software in C and assembly but also how to optimize code. Example code throughout the book can be integrated into commercial products or used as templates to enable quick creation of productive software. The book covers both the ARM and Thumb instruction sets, covers Intel's XScale Processors, outlines distinctions among the versions of the ARM architecture, demonstrates how to implement DSP algorithms, explains exception and interrupt handling, describes the cache technologies that surround the ARM cores as well as the most efficient memory management techniques. A final chapter looks forward to the future of the ARM architecture considering ARMv6, the latest change to the instruction set, which has been designed to improve the DSP and media processing capabilities of the architecture. * No other book describes the ARM core from a system and software perspective. * Author team combines extensive ARM software engineering experience with an in-depth knowledge of ARM developer needs. * Practical, executable code is fully explained in the

book and available on the publisher's Website. * Includes a simple embedded operating system.

UBIQUITOUS COMMUNICATIONS AND NETWORK COMPUTING

4TH EAI INTERNATIONAL CONFERENCE, UBICNET 2021, VIRTUAL EVENT, MARCH 2021, PROCEEDINGS

Springer Nature This book constitutes the refereed proceedings of the 4th International Conference on Ubiquitous Communications and Network Computing, UBICNET 2021, held in March 2021. Due to COVID-19 pandemic the conference was held virtually. The 17 full papers were selected from 59 submissions and are basically arranged in different sessions on 5G networks, millimeter wave communication systems and emerging applications; quantum communication, IoT and emerging applications; data analytics and cloud computing; artificial neural network, machine learning and emerging applications.

MOBILE AND HANDHELD COMPUTING SOLUTIONS FOR ORGANIZATIONS AND END-USERS

IGI Global Mobile and Handheld Computing Solutions for Organizations and End-Users discusses a broad range of topics in order to advance handheld knowledge and apply the proposed methods to real-world issues for organizations and end users. This book brings together researchers and practitioners involved with mobile and handheld computing solutions useful for IT students, researchers, and scholars.

PARALLEL COMPUTER ARCHITECTURE

A HARDWARE/SOFTWARE APPROACH

Gulf Professional Publishing This book outlines a set of issues that are critical to all of parallel architecture--communication latency, communication bandwidth, and coordination of cooperative work (across modern designs). It describes the set of techniques available in hardware and in software to address each issues and explore how the various techniques interact.

STRUCTURED COMPUTER ORGANIZATION

THE ESSENTIALS OF COMPUTER ORGANIZATION AND ARCHITECTURE

Jones & Bartlett Learning Updated and revised, The Essentials of Computer Organization and Architecture, Third Edition is a comprehensive resource that addresses all of the necessary organization and architecture topics, yet is appropriate for the one-term

course.

INTERCONNECTION NETWORKS

AN ENGINEERING APPROACH

Morgan Kaufmann Foreword -- Foreword to the First Printing -- Preface -- Chapter 1 -- Introduction -- Chapter 2 -- Message Switching Layer -- Chapter 3 -- Deadlock, Livelock, and Starvation -- Chapter 4 -- Routing Algorithms -- Chapter 5 -- CollectiveCommunicationSupport -- Chapter 6 -- Fault-Tolerant Routing -- Chapter 7 -- Network Architectures -- Chapter 8 -- Messaging Layer Software -- Chapter 9 -- Performance Evaluation -- Appendix A -- Formal Definitions for Deadlock Avoidance -- Appendix B -- Acronyms -- References -- Index.

COMPUTER SYSTEMS

DIGITAL DESIGN, FUNDAMENTALS OF COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE

Springer This textbook covers digital design, fundamentals of computer architecture, and assembly language. The book starts by introducing basic number systems, character coding, basic knowledge in digital design, and components of a computer. The book goes on to discuss information representation in computing; Boolean algebra and logic gates; sequential logic; input/output; and CPU performance. The author also covers ARM architecture, ARM instructions and ARM assembly language which is used in a variety of devices such as cell phones, digital TV, automobiles, routers, and switches. The book contains a set of laboratory experiments related to digital design using Logisim software; in addition, each chapter features objectives, summaries, key terms, review questions and problems. The book is targeted to students majoring Computer Science, Information System and IT and follows the ACM/IEEE 2013 guidelines. • Comprehensive textbook covering digital design, computer architecture, and ARM architecture and assembly • Covers basic number system and coding, basic knowledge in digital design, and components of a computer • Features laboratory exercises in addition to objectives, summaries, key terms, review questions, and problems in each chapter

HANDBOOK OF RESEARCH ON MAXIMIZING COGNITIVE LEARNING THROUGH KNOWLEDGE VISUALIZATION

IGI Global The representation of abstract data and ideas can be a difficult and tedious task to handle when learning new concepts; however, the advances of emerging technology have allowed for new methods of representing such conceptual data. The Handbook of Research on Maximizing Cognitive Learning through Knowledge Visualization focuses on the use of visualization technologies to assist

in the process of better comprehending scientific concepts, data, and applications. Highlighting the utilization of visual power and the roles of sensory perceptions, computer graphics, animation, and digital storytelling, this book is an essential reference source for instructors, engineers, programmers, and software developers interested in the exchange of information through the visual depiction of data.

MODERN PROCESSOR DESIGN

FUNDAMENTALS OF SUPERSCALAR PROCESSORS

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.

OPTIMIZING HPC APPLICATIONS WITH INTEL CLUSTER TOOLS

HUNTING PETAFLUPS

Apress Optimizing HPC Applications with Intel® Cluster Tools takes the reader on a tour of the fast-growing area of high performance computing and the optimization of hybrid programs. These programs typically combine distributed memory and shared memory programming models and use the Message Passing Interface (MPI) and OpenMP for multi-threading to achieve the ultimate goal of high performance at low power consumption on enterprise-class workstations and compute clusters. The book focuses on optimization for clusters consisting of the Intel® Xeon processor, but the optimization methodologies also apply to the Intel® Xeon Phi™ coprocessor and heterogeneous clusters mixing both architectures. Besides the tutorial and reference content, the authors address and refute many myths and misconceptions surrounding the topic. The text is augmented and enriched by descriptions of real-life

situations.

VEHICULAR CLOUD COMPUTING FOR TRAFFIC MANAGEMENT AND SYSTEMS

IGI Global Road accidents caused by impaired and distracted driving as well as traffic congestion are on the rise, with the numbers increasing dramatically every day. Intelligent transportation systems (ITS) aim to improve the efficiency and safety of traveling by consolidating vehicle operations, managing vehicle traffic, and notifying drivers with alerts and safety messages in real time. Vehicular Cloud Computing for Traffic Management and Systems provides innovative research on the rapidly advancing applications of vehicle-to-vehicle and vehicle-to-infrastructure communication. It also covers the need to fully utilize vehicular ad-hoc network (VANET) resources to provide updated and dynamic information about the conditions of road traffic so that the number of road accidents can be minimized. Featuring research on topics such as identity management, computational architecture, and resource management, this book is ideally designed for urban planners, researchers, policy makers, graduate-level students, transportation engineers, and technology developers seeking current research on vehicle computational design, architecture, security, and privacy.

OPTIMIZATION OF POWER FLOW COMPUTATION METHODS

BoD - Books on Demand Power flow computations are a cornerstone of many simulations regarding the electric grid. This thesis evaluates the landscape of power flow computation methods with a focus on practical computational performance in large-scale simulations, as they occur in modern distribution grid planning. The investigation involves various model assumptions, different algorithms, implementation details, and unconventional computational optimization methods. As a result, the implementations devised in this thesis are up to a thousand times faster for large scale grid simulations than established solutions.

COMPUTER ORGANIZATION, DESIGN, AND ARCHITECTURE, FIFTH EDITION

CRC Press Suitable for a one- or two-semester undergraduate or beginning graduate course in computer science and computer engineering, Computer Organization, Design, and Architecture, Fifth Edition presents the operating principles, capabilities, and limitations of digital computers to enable the development of complex yet efficient systems. With 11 new sections and four revised sections, this edition takes students through a solid, up-to-date exploration of single- and multiple-processor systems, embedded architectures, and performance evaluation. See What's New in the Fifth Edition Expanded coverage of embedded systems, mobile processors, and cloud computing Material for the "Architecture and Organization" part of the 2013 IEEE/ACM Draft Curricula for Computer Science and Engineering Updated commercial machine architecture examples The backbone of the book is a description of

the complete design of a simple but complete hypothetical computer. The author then details the architectural features of contemporary computer systems (selected from Intel, MIPS, ARM, Motorola, Cray and various microcontrollers, etc.) as enhancements to the structure of the simple computer. He also introduces performance enhancements and advanced architectures including networks, distributed systems, GRIDs, and cloud computing. Computer organization deals with providing just enough details on the operation of the computer system for sophisticated users and programmers. Often, books on digital systems' architecture fall into four categories: logic design, computer organization, hardware design, and system architecture. This book captures the important attributes of these four categories to present a comprehensive text that includes pertinent hardware, software, and system aspects.

SCALABLE AND SECURE INTERNET SERVICES AND ARCHITECTURE

CRC Press Scalable and Secure Internet Services and Architecture provides an in-depth analysis of many key scaling technologies. Topics include: server clusters and load balancing; QoS-aware resource management; server capacity planning; Web caching and prefetching; P2P overlay network; mobile code and security; and mobility support for adaptive grid computing. The author discusses each topic by first defining a problem, then reviewing current representative approaches for solving it. He then describes in detail the underlying principles of the technologies and the application of these principles, along with balanced coverage of concepts and engineering trade-offs. The book demonstrates the effectiveness of the technologies via rigorous mathematical modeling and analysis, simulation, and practical implementations. It blends technologies in a unified framework for scalable and secure Internet services, delivering a systematic treatment based upon the author's cutting-edge research experience. This volume describes in breadth and depth advanced scaling technologies that support media streaming, e-commerce, grid computing, personalized content delivery, distributed file sharing, network management, and other Internet applications.

INSIDE THE MACHINE

AN ILLUSTRATED INTRODUCTION TO MICROPROCESSORS AND COMPUTER ARCHITECTURE

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

COMPUTER ORGANIZATION AND DESIGN MIPS EDITION

THE HARDWARE/SOFTWARE INTERFACE

Newnes Computer Organization and Design, Fifth Edition, is the latest update to the classic introduction to computer organization. The

text now contains new examples and material highlighting the emergence of mobile computing and the cloud. It explores this generational change with updated content featuring tablet computers, cloud infrastructure, and the ARM (mobile computing devices) and x86 (cloud computing) architectures. The book uses a MIPS processor core to present the fundamentals of hardware technologies, assembly language, computer arithmetic, pipelining, memory hierarchies and I/O. Because an understanding of modern hardware is essential to achieving good performance and energy efficiency, this edition adds a new concrete example, Going Faster, used throughout the text to demonstrate extremely effective optimization techniques. There is also a new discussion of the Eight Great Ideas of computer architecture. Parallelism is examined in depth with examples and content highlighting parallel hardware and software topics. The book features the Intel Core i7, ARM Cortex-A8 and NVIDIA Fermi GPU as real-world examples, along with a full set of updated and improved exercises. This new edition is an ideal resource for professional digital system designers, programmers, application developers, and system software developers. It will also be of interest to undergraduate students in Computer Science, Computer Engineering and Electrical Engineering courses in Computer Organization, Computer Design, ranging from Sophomore required courses to Senior Electives. Winner of a 2014 Texty Award from the Text and Academic Authors Association Includes new examples, exercises, and material highlighting the emergence of mobile computing and the cloud Covers parallelism in depth with examples and content highlighting parallel hardware and software topics Features the Intel Core i7, ARM Cortex-A8 and NVIDIA Fermi GPU as real-world examples throughout the book Adds a new concrete example, "Going Faster," to demonstrate how understanding hardware can inspire software optimizations that improve performance by 200 times Discusses and highlights the "Eight Great Ideas" of computer architecture: Performance via Parallelism; Performance via Pipelining; Performance via Prediction; Design for Moore's Law; Hierarchy of Memories; Abstraction to Simplify Design; Make the Common Case Fast; and Dependability via Redundancy Includes a full set of updated and improved exercises

BIOMEDICAL INFORMATICS

COMPUTER APPLICATIONS IN HEALTH CARE AND BIOMEDICINE

Springer Science & Business Media The practice of modern medicine and biomedical research requires sophisticated information technologies with which to manage patient information, plan diagnostic procedures, interpret laboratory results, and carry out investigations. Biomedical Informatics provides both a conceptual framework and a practical inspiration for this swiftly emerging scientific discipline at the intersection of computer science, decision science, information science, cognitive science, and biomedicine. Now revised and in its third edition, this text meets the growing demand by practitioners, researchers, and students for a comprehensive introduction to key topics in the field. Authored by leaders in medical informatics and extensively tested in their

courses, the chapters in this volume constitute an effective textbook for students of medical informatics and its areas of application. The book is also a useful reference work for individual readers needing to understand the role that computers can play in the provision of clinical services and the pursuit of biological questions. The volume is organized so as first to explain basic concepts and then to illustrate them with specific systems and technologies.

MATRIX FUNCTIONS AND MATRIX EQUATIONS

World Scientific "Matrix functions and matrix equations are widely used in science, engineering and social sciences due to the succinct and insightful way in which they allow problems to be formulated and solutions to be expressed. This book covers materials relevant to advanced undergraduate and graduate courses in numerical linear algebra and scientific computing. It is also well-suited for self-study. The broad content makes it convenient as a general reference to the subjects."--

INSTRUCTION SELECTION

PRINCIPLES, METHODS, AND APPLICATIONS

Springer This book presents a comprehensive, structured, up-to-date survey on instruction selection. The survey is structured according to two dimensions: approaches to instruction selection from the past 45 years are organized and discussed according to their fundamental principles, and according to the characteristics of the supported machine instructions. The fundamental principles are macro expansion, tree covering, DAG covering, and graph covering. The machine instruction characteristics introduced are single-output, multi-output, disjoint-output, inter-block, and interdependent machine instructions. The survey also examines problems that have yet to be addressed by existing approaches. The book is suitable for advanced undergraduate students in computer science, graduate students, practitioners, and researchers.

HARDWARE SECURITY

A HANDS-ON LEARNING APPROACH

Morgan Kaufmann Hardware Security: A Hands-On Learning Approach provides a broad, comprehensive and practical overview of hardware security that encompasses all levels of the electronic hardware infrastructure. It covers basic concepts like advanced attack techniques and countermeasures that are illustrated through theory, case studies and well-designed, hands-on laboratory exercises for each key concept. The book is ideal as a textbook for upper-level undergraduate students studying computer engineering,

computer science, electrical engineering, and biomedical engineering, but is also a handy reference for graduate students, researchers and industry professionals. For academic courses, the book contains a robust suite of teaching ancillaries. Users will be able to access schematic, layout and design files for a printed circuit board for hardware hacking (i.e. the HaHa board) that can be used by instructors to fabricate boards, a suite of videos that demonstrate different hardware vulnerabilities, hardware attacks and countermeasures, and a detailed description and user manual for companion materials. Provides a thorough overview of computer hardware, including the fundamentals of computer systems and the implications of security risks Includes discussion of the liability, safety and privacy implications of hardware and software security and interaction Gives insights on a wide range of security, trust issues and emerging attacks and protection mechanisms in the electronic hardware lifecycle, from design, fabrication, test, and distribution, straight through to supply chain and deployment in the field

COMPUTING HANDBOOK, THIRD EDITION

COMPUTER SCIENCE AND SOFTWARE ENGINEERING

CRC Press Computing Handbook, Third Edition: Computer Science and Software Engineering mirrors the modern taxonomy of computer science and software engineering as described by the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS). Written by established leading experts and influential young researchers, the first volume of this popular handbook examines the elements involved in designing and implementing software, new areas in which computers are being used, and ways to solve computing problems. The book also explores our current understanding of software engineering and its effect on the practice of software development and the education of software professionals. Like the second volume, this first volume describes what occurs in research laboratories, educational institutions, and public and private organizations to advance the effective development and use of computers and computing in today's world. Research-level survey articles provide deep insights into the computing discipline, enabling readers to understand the principles and practices that drive computing education, research, and development in the twenty-first century.

ADVANCES IN COMPUTER SYSTEMS ARCHITECTURE

8TH ASIA-PACIFIC CONFERENCE, ACSAC 2003, AIZU-WAKAMATSU, JAPAN, SEPTEMBER 23-26, 2003, PROCEEDINGS

Springer Science & Business Media This book constitutes the refereed proceedings of the 8th Asia-Pacific Computer Systems

Architecture Conference, ACSAC 2003, held in Aizu-Wakamatsu, Japan in September 2003. The 23 revised full papers presented together with 8 invited papers were carefully reviewed and selected from 30 submissions. The papers are organized in topical sections on processor architectures and innovative microarchitectures, parallel computer architectures and computation models, reconfigurable architectures, computer arithmetic, cache and memory architectures, and interconnection networks and network interfaces.

OPERATING SYSTEM CONCEPTS

Wiley The tenth edition of Operating System Concepts has been revised to keep it fresh and up-to-date with contemporary examples of how operating systems function, as well as enhanced interactive elements to improve learning and the student's experience with the material. It combines instruction on concepts with real-world applications so that students can understand the practical usage of the content. End-of-chapter problems, exercises, review questions, and programming exercises help to further reinforce important concepts. New interactive self-assessment problems are provided throughout the text to help students monitor their level of understanding and progress. A Linux virtual machine (including C and Java source code and development tools) allows students to complete programming exercises that help them engage further with the material. The Enhanced E-Text is also available bundled with an abridged print companion and can be ordered by contacting customer service here: ISBN: 9781119456339 Price: \$97.95 Canadian Price: \$111.50

THEORY AND PRACTICE OF COMPUTATION

PROCEEDINGS OF WORKSHOP ON COMPUTATION: THEORY AND PRACTICE WCTP2016

World Scientific This is the proceedings of the Sixth Workshop on Computing: Theory and Practice, WCTP 2016 devoted to theoretical and practical approaches to computation. This workshop was organized by four top universities in Japan and the Philippines: Tokyo Institute of Technology, Osaka University, University of the Philippines - Diliman, and De La Salle University. The proceedings provides a view of the current movement in research in these two countries. The papers included in the proceedings focus on the two research areas: theoretical and practical aspects of computation.

LOGIC GATES, CIRCUITS, PROCESSORS, COMPILERS AND COMPUTERS

Springer Nature This undergraduate textbook first introduces basic electronic circuitry before explaining more advanced elements

such as the Arithmetic Logic Unit, sequential circuits, and finally microprocessors. In keeping with this integrated and graduated approach, the authors then explain the relationship to first assembly programming, then higher-level languages, and finally computer organisation. Authors use the Raspberry Pi and ARM microprocessors for their explanations. The material has been extensively class tested at TU Eindhoven by an experienced team of lecturers and researchers. This is a modern, holistic treatment of well-established topics, valuable for undergraduate students of computer science and electronics engineering and for self-study. The authors use the Raspberry Pi and ARM microprocessors for their explanations.

CIRCUITS AND SYSTEMS FOR THE INTERNET OF THINGS

CAS4IOT

CRC Press Internet-of-Things (IoT) can be envisaged as a dynamic network of interconnected physical and virtual entities (things), with their own identities and attributes, seamlessly integrated in order to e.g. actively participate in economic or societal processes, interact with services, and react autonomously to events while sensing the environment. By enabling things to connect and becoming recognizable, while providing them with intelligence, informed and context based decisions are expected in a broad range of domains spanning from health and elderly care to energy efficiency, either providing business competitive advantages to companies, either addressing key social concerns. The level of connectivity and analytical intelligence provided by the IoT paradigm is expected to allow creating new services that would not be feasible by other means. This CAS4IoT book targets post-graduate students and design engineers, with the skills to understand and design a broader range of analog, digital and mixed-signal circuits and systems, in the field of IoT, spanning from data converters for sensor interfaces to radios, ensuring a good balance between academia and industry, combined with a judicious selection of worldwide distinguished authors.

COMPLEX SYSTEMS AND CLOUDS

A SELF-ORGANIZATION AND SELF-MANAGEMENT PERSPECTIVE

Morgan Kaufmann Complex Systems and Clouds: A Self-Organization and Self-Management Perspective provides insights into the intricate world of self-organizing systems. Large scale distributed computer systems have evolved into very complex systems and are at the point where they need to borrow self-adapting organizing concepts from nature. The book explores complexity in big distributed systems and in the natural processes in physics and chemistry, building a platform for understanding how self-organization in big distributed systems can be achieved. It goes beyond the theoretical description of self-organization to present principles for designing

self-organizing systems, and concludes by showing the need for a paradigm shift in the development of large-scale systems from strictly deterministic to non-deterministic and adaptive. Analyzes the effect of self-organization applied to computer clouds. Furthers research on principles of self-organization of computing and communication systems inspired by a wealth of self-organizing processes and phenomena in nature and society. Presents a unique analysis of the field, with solutions and case studies.

OPTIMIZING JAVA

PRACTICAL TECHNIQUES FOR IMPROVING JVM APPLICATION PERFORMANCE

"O'Reilly Media, Inc." Performance tuning is an experimental science, but that doesn't mean engineers should resort to guesswork and folklore to get the job done. Yet that's often the case. With this practical book, intermediate to advanced Java technologists working with complex technology stacks will learn how to tune Java applications for performance using a quantitative, verifiable approach. Most resources on performance tend to discuss the theory and internals of Java virtual machines, but this book focuses on the practicalities of performance tuning by examining a wide range of aspects. There are no simple recipes, tips and tricks, or algorithms to learn. Performance tuning is a process of defining and determining desired outcomes. And it requires diligence. Learn how Java principles and technology make the best use of modern hardware and operating systems. Explore several performance tests and common anti-patterns that can vex your team. Understand the pitfalls of measuring Java performance numbers and the drawbacks of microbenchmarking. Dive into JVM garbage collection logging, monitoring, tuning, and tools. Explore JIT compilation and Java language performance techniques. Learn performance aspects of the Java Collections API and get an overview of Java concurrency.

THE ARCHITECTURE OF COMPUTER HARDWARE, SYSTEMS SOFTWARE, AND NETWORKING

AN INFORMATION TECHNOLOGY APPROACH

John Wiley & Sons The Architecture of Computer Hardware, Systems Software and Networking is designed help students majoring in information technology (IT) and information systems (IS) understand the structure and operation of computers and computer-based devices. Requiring only basic computer skills, this accessible textbook introduces the basic principles of system architecture and explores current technological practices and trends using clear, easy-to-understand language. Throughout the text, numerous relatable examples, subject-specific illustrations, and in-depth case studies reinforce key learning points and show students how important concepts are applied in the real world. This fully-updated sixth edition features a wealth of new and revised content that reflects today's technological landscape. Organized into five parts, the book first explains the role of the computer in information

systems and provides an overview of its components. Subsequent sections discuss the representation of data in the computer, hardware architecture and operational concepts, the basics of computer networking, system software and operating systems, and various interconnected systems and components. Students are introduced to the material using ideas already familiar to them, allowing them to gradually build upon what they have learned without being overwhelmed and develop a deeper knowledge of computer architecture.

COMPUTER NETWORKS

A SYSTEMS APPROACH

MICROPROCESSOR ARCHITECTURE

FROM SIMPLE PIPELINES TO CHIP MULTIPROCESSORS

Cambridge University Press This book describes the architecture of microprocessors from simple in-order short pipeline designs to out-of-order superscalars.

VLSI DESIGN AND TEST FOR SYSTEMS DEPENDABILITY

Springer This book discusses the new roles that the VLSI (very-large-scale integration of semiconductor circuits) is taking for the safe, secure, and dependable design and operation of electronic systems. The book consists of three parts. Part I, as a general introduction to this vital topic, describes how electronic systems are designed and tested with particular emphasis on dependability engineering, where the simultaneous assessment of the detrimental outcome of failures and cost of their containment is made. This section also describes the related research project "Dependable VLSI Systems," in which the editor and authors of the book were involved for 8 years. Part II addresses various threats to the dependability of VLSIs as key systems components, including time-dependent degradations, variations in device characteristics, ionizing radiation, electromagnetic interference, design errors, and tampering, with discussion of technologies to counter those threats. Part III elaborates on the design and test technologies for dependability in such applications as control of robots and vehicles, data processing, and storage in a cloud environment and heterogeneous wireless telecommunications. This book is intended to be used as a reference for engineers who work on the design and testing of VLSI systems with particular attention to dependability. It can be used as a textbook in graduate courses as well. Readers interested in dependable systems from social and industrial-economic perspectives will also benefit from the discussions in this book.