

Computer Organization And Design Hennessy Patterson

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Computer Organization and Design *Morgan Kaufmann*

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

Computer Organization and Design *Morgan Kaufmann*

The performance of software systems is dramatically affected by how well software designers understand the basic hardware technologies at work in a system. Similarly, hardware designers must understand the far-reaching effects their design decisions have on software applications. For readers in either category, this classic introduction to the field provides a look deep into the computer. It demonstrates the relationships between the software and hardware and focuses on the foundational concepts that are the basis for current computer design.

Computer Organization and Design *Elsevier*

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

Computer Organization and Design RISC-V Edition *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 *Morgan Kaufmann Publishers*

This book presents the fundamentals of hardware technologies, assembly language, computer arithmetic, pipelining, memory hierarchies and I/O. This edition is updated for mobile computing and the cloud!

Computer Organization and Design *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 *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 Architecture *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 MIPS Edition *Morgan Kaufmann*

Modern computer technology requires professionals of every computing specialty to understand both hardware and software. The interaction between hardware and software at a variety of levels offers a framework for understanding the concepts that are the basis for current computers. Computer Organization and Design, the leading, award-winning textbook from Patterson and Hennessy, used by more than 40,000 students per year, continues to present the most comprehensive and readable introduction to this core computer science topic. Improvements to the new 6th edition, including new sections in each chapter on Domain Specific Architectures (DSA) and updates of all of the real-world examples in the book, will help to keep it fresh and relevant for a new generation of students.

Modern Computer Architecture and Organization *Packt Publishing Ltd*

A no-nonsense, practical guide to current and future processor and computer architectures, enabling you to design computer systems and develop better software applications across a variety of domains Key FeaturesUnderstand digital circuitry with the help of transistors, logic gates, and sequential logicExamine the architecture and instruction sets of x86, x64, ARM, and RISC-V processorsExplore the architecture of modern devices such as the iPhone X and high-performance gaming PCsBook Description Are you a software developer, systems designer, or computer architecture student looking for a methodical introduction to digital device architectures but overwhelmed by their complexity? This book will help you to learn how modern computer systems work, from the lowest level of transistor switching to the macro view of collaborating multiprocessor servers. You'll gain unique insights into the internal behavior of processors that execute the code developed in high-level languages and enable you to design more efficient and scalable software systems. The book will teach you the fundamentals of computer systems including transistors, logic gates, sequential logic, and instruction operations. You will learn details of modern processor architectures and instruction sets including x86, x64, ARM, and RISC-V. You will see how to implement a RISC-V processor in a low-cost FPGA board and how to write a quantum computing program and run it on an actual quantum computer. By the end of this book, you will have a thorough understanding of modern processor and computer architectures and the future directions these architectures are likely to take. What you will learnGet to grips with transistor technology and digital circuit principlesDiscover the functional elements of computer processorsUnderstand pipelining and superscalar executionWork with floating-point data formatsUnderstand the purpose and operation of the supervisor modelImplement a complete RISC-V processor in a low-cost FPGAExplore the techniques used in virtual machine implementationWrite a quantum computing program and run it on a quantum computerWho this book is for This book is for software developers, computer engineering students, system designers, reverse engineers, and anyone looking to understand the architecture and design principles underlying modern computer systems from tiny embedded devices to warehouse-size cloud server farms. A general understanding of computer processors is helpful but not required.

Mac OS X Snow Leopard For Dummies *John Wiley & Sons*

Mac OS X Snow Leopard is the newest version of the Macintosh operating system, and “Dr. Mac” Bob LeVitus is the ideal expert to introduce you to Snow Leopard. Mac OS X Snow Leopard For Dummies covers all the cool stuff and prepares you for the quirks, so whether it’s your first Mac or an upgrade, you’ll enjoy a truly rewarding relationship. From starting up your Mac to setting up a network and keeping in touch via iChat AV, Mac OS X Snow Leopard For Dummies gives you the scoop on the new features and improvements that help you do more work in less time. Learn when to shut down your Mac and when not to, how to secure it, and how to back it up with Time Machine Organize your life with iCal and your stuff with files and folders, and be able to find what you’re looking for Set up your Internet connection and e-mail, manage spam, surf with Safari, and start iChatting Download and organize songs, podcasts, and movies with iTunes and plan a playlist with Genius Create documents with TextEdit, print them, fax them, and make PDFs Set up a network and share files, printers, and Internet connections Find out about operating system updates, firewalls, troubleshooting, and other ways to keep your Mac safe, healthy, and happy Technology columnist Bob LeVitus has been a Mac guru for nearly two decades. Mac OS X Snow Leopard For Dummies provides just what you need to get up and running with Snow Leopard.

The RISC-V Reader

ARM Assembly Language *CRC Press*

Delivering a solid introduction to assembly language and embedded systems, ARM Assembly Language: Fundamentals and Techniques, Second Edition continues to support the popular ARM7TDMI, but also addresses the latest architectures from ARM, including CortexTM-A, Cortex-R, and Cortex-M processors—all of which have slightly different instruction sets, programmer’s models, and exception handling. Featuring three brand-new chapters, a new appendix, and expanded coverage of the ARM7Tm, this edition: Discusses IEEE 754 floating-point arithmetic and explains how to program with the IEEE standard notation Contains step-by-step directions for the use of KeilTM MDK-ARM and Texas Instruments (TI) Code Composer StudioTM Provides a resource to be used alongside a variety of hardware evaluation modules, such as TI’s Tiva Launchpad, STMicroelectronics’ iNemo and Discovery, and NXP Semiconductors’ Xplorer boards Written by experienced ARM processor designers, ARM Assembly Language: Fundamentals and Techniques, Second Edition covers the topics essential to writing meaningful assembly programs, making it an ideal textbook and professional reference.

Computer Systems *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

Instructors Manual

The Architecture of Computer Hardware, Systems Software, and Networking 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 Architecture 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.

Exploring Raspberry Pi John Wiley & Sons

Expand Raspberry Pi capabilities with fundamental engineering principles Exploring Raspberry Pi is the innovators guide to bringing Raspberry Pi to life. This book favors engineering principles over a 'recipe' approach to give you the skills you need to design and build your own projects. You'll understand the fundamental principles in a way that transfers to any type of electronics, electronic modules, or external peripherals, using a "learning by doing" approach that caters to both beginners and experts. The book begins with basic Linux and programming skills, and helps you stock your inventory with common parts and supplies. Next, you'll learn how to make parts work together to achieve the goals of your project, no matter what type of components you use. The companion website provides a full repository that structures all of the code and scripts, along with links to video

tutorials and supplementary content that takes you deeper into your project. The Raspberry Pi's most famous feature is its adaptability. It can be used for thousands of electronic applications, and using the Linux OS expands the functionality even more. This book helps you get the most from your Raspberry Pi, but it also gives you the fundamental engineering skills you need to incorporate any electronics into any project. Develop the Linux and programming skills you need to build basic applications Build your inventory of parts so you can always "make it work" Understand interfacing, controlling, and communicating with almost any component Explore advanced applications with video, audio, real-world interactions, and more Be free to adapt and create with Exploring Raspberry Pi.

Microprocessors and Microcomputers Prentice Hall

Recovering Histories University of California Press

Heroin first reached Gejiu, a Chinese city in southern Yunnan known as Tin Capital, in the 1980s. Widespread use of the drug, which for a short period became “easier to buy than vegetables,” coincided with radical changes in the local economy caused by the marketization of the mining industry. More than two decades later, both the heroin epidemic and the mining boom are often discussed as recent history. Middle-aged long-term heroin users, however, complain that they feel stuck in an earlier moment of the country’s rapid reforms, navigating a world that no longer resembles either the tightly knit Maoist work units of their childhood or the disorienting but opportunity-filled chaos of their early careers. Overcoming addiction in Gejiu has become inseparable from broader attempts to reimagine laboring lives in a rapidly shifting social world. Drawing on more than eighteen months of fieldwork, Nicholas Bartlett explores how individuals’ varying experiences of recovery highlight shared challenges of inhabiting China’s contested present.

MIPS Assembly Language Programming Pearson

Users of this book will gain an understanding of the fundamental concepts of contemporary computer architecture, starting with a Reduced Instruction Set Computer (RISC). An understanding of computer architecture needs to begin with the basics of modern computer organization. The MIPS architecture embodies the fundamental design principles of all contemporary RISC architectures. This book provides an understanding of how the functional components of modern computers are put together and how a computer works at the machine-language level. Well-written and clearly organized, this book covers the basics of MIPS architecture, including algorithm development, number systems, function calls, reentrant functions, memory-mapped I/O, exceptions and interrupts, and floating-point instructions. For employees in the field of systems, systems development, systems analysis, and systems maintenance.

Instructors manual for Computer organization and design: the hardware

Beginning Software Engineering John Wiley & Sons

A complete introduction to building robust and reliable software Beginning Software Engineering demystifies the software engineering methodologies and techniques that professional developers use to design and build robust, efficient, and consistently reliable software. Free of jargon and assuming no previous programming, development, or management experience, this accessible guide explains important concepts and techniques that can be applied to any programming language. Each chapter ends with exercises that let you test your understanding and help you elaborate on the chapter's main concepts. Everything you need to understand waterfall, Sashimi, agile, RAD, Scrum, Kanban, Extreme Programming, and many other development models is inside! Describes in plain English what software engineering is Explains the roles and responsibilities of team members working on a software engineering project Outlines key phases that any software engineering effort must handle to produce applications that are powerful and dependable Details the most popular software development methodologies and explains the different ways they handle critical development tasks Incorporates exercises that expand upon each chapter's main ideas Includes an extensive glossary of software engineering terms

Leading Matters Stanford University Press

In Leading Matters, current Chairman of Alphabet (Google's parent company), former President of Stanford University, and "Godfather of Silicon Valley," John L. Hennessy shares the core elements of leadership that helped him become a successful tech entrepreneur, esteemed academic, and venerated administrator. Hennessy's approach to leadership is laser-focused on the journey rather than the destination. Each chapter in Leading Matters looks at valuable elements that have shaped Hennessy's career in practice and philosophy. He discusses the pivotal role that humility, authenticity and trust, service, empathy, courage, collaboration, innovation, intellectual curiosity, storytelling, and legacy have all played in his prolific, interdisciplinary career. Hennessy takes these elements and applies them to instructive stories, such as his encounters with other Silicon Valley leaders including Jim Clark, founder of Netscape; Condoleezza Rice, former U.S. Secretary of State and Stanford provost; John Arrillaga, one of the most successful Silicon Valley commercial real estate developers; and Phil Knight, founder of Nike and philanthropist with whom Hennessy cofounded Knight-Hennessy Scholars at Stanford University. Across government, education, commerce, and non-profits, the need for effective leadership could not be more pressing. This book is essential reading for those tasked with leading any complex enterprise in the academic, not-for-profit, or for-profit sector.

Inside the Machine No Starch Press

Om hvordan mikroprocessorer fungerer, med undersøgelse af de nyeste mikroprocessorer fra Intel, IBM og Motorola.

Fundamentals of Computer Organization and Design Springer Science & Business Media

A new advanced textbook/reference providing a comprehensive survey of hardware and software architectural principles and methods of computer systems organization and design. The book is suitable for a first course in computer organization. The style is similar to that of the author's book on assembly language in that it strongly supports self-study by students. This organization facilitates compressed presentation of material. Emphasis is also placed on related concepts to practical designs/chips. Topics: material presentation suitable for self- study; concepts related to practical designs and implementations; extensive examples and figures; details provided on several digital logic simulation packages; free MASM download instructions provided; and end-of-chapter exercises.

Computer Organization and Design

Programming Massively Parallel Processors *Newnes*

Programming Massively Parallel Processors: A Hands-on Approach, Second Edition, teaches students how to program massively parallel processors. It offers a detailed discussion of various techniques for constructing parallel programs. Case studies are used to demonstrate the development process, which begins with computational thinking and ends with effective and efficient parallel programs. This guide shows both student and professional alike the basic concepts of parallel programming and GPU architecture. Topics of performance, floating-point format, parallel patterns, and dynamic parallelism are covered in depth. This revised edition contains more parallel programming examples, commonly-used libraries such as Thrust, and explanations of the latest tools. It also provides new coverage of CUDA 5.0, improved performance, enhanced development tools, increased hardware support, and more; increased coverage of related technology, OpenCL and new material on algorithm patterns, GPU clusters, host programming, and data parallelism; and two new case studies (on MRI reconstruction and molecular visualization) that explore the latest applications of CUDA and GPUs for scientific research and high-performance computing. This book should be a valuable resource for advanced students, software engineers, programmers, and hardware engineers. New coverage of CUDA 5.0, improved performance, enhanced development tools, increased hardware support, and more Increased coverage of related technology, OpenCL and new material on algorithm patterns, GPU clusters, host programming, and data parallelism Two new case studies (on MRI reconstruction and molecular visualization) explore the latest applications of CUDA and GPUs for scientific research and high-performance computing

The Designer's Guide to VHDL *Morgan Kaufmann*

"The second edition of The Designer's Guide to VHDL sets a new standard in VHDL texts. I am certain that you will find it a very valuable addition to your library." --From the foreword by Paul Menchini, Menchini & AssociatesSince the publication of the first edition of The Designer's Guide to VHDL in 1996, digital electronic systems have increased exponentially in their complexity, product lifetimes have dramatically shrunk, and reliability requirements have shot through the roof. As a result more and more designers have turned to VHDL to help them dramatically improve productivity as well as the quality of their designs.VHDL, the IEEE standard hardware description language for describing digital electronic systems, allows engineers to describe the structure and specify the function of a digital system as well as simulate and test it before manufacturing. In addition, designers use VHDL to synthesize a more detailed structure of the design, freeing them to concentrate on more strategic design decisions and reduce time to market. Adopted by designers around the world, the VHDL family of standards have recently been revised to address a range of issues, including portability across synthesis tools.This best-selling comprehensive tutorial for the language and authoritative reference on its use in hardware design at all levels--from system to gates--has been revised to reflect the new IEEE standard, VHDL-2001. Peter Ashenden, a member of the IEEE VHDL standards committee, presents the entire description language and builds a modeling methodology based on successful software engineering techniques. Reviewers on Amazon.com have consistently rated the first edition with five stars. This second edition updates the first, retaining the authors unique ability to teach this complex subject to a broad audience of students and practicing professionals.Features: Details how the new standard allows for increased portability across tools. Covers related standards, including the Numeric Synthesis Package and the Synthesis Operability Package, demonstrating how they can be used for digital systems design. Presents four extensive case studies to demonstrate and combine features of the language taught across multiple chapters. Requires only a minimal background in programming, making it an excellent tutorial for anyone in computer architecture, digital systems engineering, or CAD.

Modern Digital Designs with EDA, VHDL and FPGA

Computer Organization and Design, Enhanced *Morgan Kaufmann*

Computer Organization and Design, Fifth Edition, moves into the post-PC era with new examples and material highlighting the emergence of mobile computing and the cloud. The book explores this generational change with updated content featuring tablet computers, cloud infrastructure, and the ARM (mobile computing devices) and x86 (cloud computing) architectures. This new edition provides in-depth coverage of parallelism with examples and content highlighting parallel hardware and software topics. It features the Intel Core i7, ARM Cortex-A8 and NVIDIA Fermi GPU as real-world examples throughout the book. It also adds a new concrete example, Going Faster, to demonstrate how understanding hardware can inspire software optimizations that improve performance by 200 times. Other topics covered include: 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; and dependability via redundancy. The book includes a full set of updated and improved exercises as well as pop-up definitions for technical terms and concepts. Furthermore, it features interactive learning assessments that provide instant feedback in the form of true/false, multiple choice, and short essay questions. This book will appeal to professionals in computer organization and design as well as students with interest or are taking courses in this subject. 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 Features interactive learning assessments that provide instant feedback in the form of true/false, multiple choice, and short essay questions. Includes pop-up definitions for technical terms and concepts.

The Planet Remade *Princeton University Press*

First published in Great Britain by Granta Books, 2015.

Essentials of Computer Architecture, Second Edition *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 ORGANIZATION AND DESIGN THE HARDWARE

Computer Organization and Design *Morgan Kaufmann*

The classic textbook for computer systems analysis and design, Computer Organization and Design, has been thoroughly updated to provide a new focus on the revolutionary change taking place in industry today: the switch from uniprocessor to multicore microprocessors. This new emphasis on parallelism is supported by updates reflecting the newest technologies with examples highlighting 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, assembly language, computer arithmetic, pipelining, memory hierarchies and I/O. Along with its increased coverage of parallelism, this new edition offers new content on Flash memory and virtual machines as well as a new and important appendix written by industry experts covering the emergence and importance of the modern GPU (graphics processing unit), the highly parallel, highly multithreaded multiprocessor optimized for visual computing. A new exercise paradigm allows instructors to reconfigure the 600 exercises included in the book to easily generate new exercises and solutions of their own. The companion CD provides a toolkit of simulators and compilers along with tutorials for using them, as well as advanced content for further study and a search utility for finding content on the CD and in the printed text. For the convenience of readers who have purchased an ebook edition or who may have misplaced the CD-ROM, all CD content is available as a download at <http://bit.ly/12XinUx>.

Thriller: Stories to Keep You Up All Night *MIRA*

BE PREPARED TO BE THRILLED AS YOU'VE NEVER BEEN BEFORE Featuring North America's foremost thriller authors, Thriller is the first collection of pure thriller stories ever published. Offering up heart-pumping tales of suspense in all its guises are thirty-two of the most critically acclaimed and award-winning names in the business. From the signature characters that made such authors as David Morrell and John Lescroart famous to four of the hottest new voices in the genre, this blockbuster will tantalize and terrify. LOCK THE DOORS, DRAW THE SHADES, PULL UP THE COVERS AND BE PREPARED FOR THRILLER TO KEEP YOU UP ALL NIGHT.

ARM System Developer's Guide *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.

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.

Computer design

Computer Networking: A Top-Down Approach Featuring the Internet, 3/e *Pearson Education India*