Computer organization and design 5th edition patterson

The 5th edition of Computer Organization and Design is moving into the post-PC era with new examples, exercises and materials, highlighting the advent of mobile computing and the cloud. This generational change is emphasized and explored with updated content with tablet computers, cloud infrastructure, and ARM (mobile computing) and x86 (cloud computing) architectures. Since understanding modern equipment 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. Also new for this edition is the discussion of eight great ideas of computer architecture. As in previous editions, the MIPS processor is the core used to represent the basics of hardware technology, the language of audience, computer arithmetic, pipelines, memory hierarchies, and I/O. Instructors looking for 4th edition training materials must e-mail protected by e-mail includes new examples, exercises, and materials highlighting the advent of mobile computing and cloud. Covers parallelism in depth with examples and content highlighting the parallel hardware and software themes features Intel Core i7, ARM Cortex-A8 and NVIDIA Fermi GPU as real examples throughout the book adds a new specific example, Going Faster, to demonstrate how understanding hardware can inspire software optimization that improves performance by 200 times. Discusses and illuminates eight great ideas of computer architecture: Performance through parallelism; Performance through the pipeline; Performance through forecast; Design for Moore's Law; A hierarchy of memories; Abstraction to simplify design; Make common cause quickly; and reliability through redundancy. Includes a full set of updated and improved exercises. 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The text now contains new examples and materials highlighting the advent of mobile computing and the cloud. It explores this generational change with updated content with tablet computers, cloud infrastructure, and ARM (mobile computing) and x86 (cloud computing) architectures. The book uses the core of the MIPS processor to present the basics of hardware technology, the language of astretics, computer arithmetic, pipelines, memory hierarchies and I/O.Because understanding of modern hardware is essential to achieve 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 eight great ideas of computer architecture. Parallelism is studied in detail with examples and content, emphasizing parallel hardware and software themes. The book features the Intel Core i7 processor, ARM Cortex-A8 and NVIDIA Fermi GPU in the real world, as well as a full set of updated and improved exercises. This new edition is an ideal resource for professional digital system developers, programmers, app developers, and system software developers. It will also be of interest to students in computer science, computer technology and electrical engineering courses in computer design organizations ranging from sophomore required courses to senior electives. The 2014 Texty Award from the Association of Texty and Academic Authors includes new examples, exercises and materials highlighting the advent of mobile computing and the concurrency of cloud covers in depth with examples and content, Emphasizing the parallel hardware and software themes features Of 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 optimization that improves performance 200 times Discusses and highlights eight great computer architecture ideas: Performance through parallelism; Performance through the pipeline; Performance through forecast; Design for Moore's Law; A hierarchy of memories; Abstraction to simplify design; Make common cause quickly; and reliability through redundancy includes a full set of updated and improved exercise professional developers systems, programmers, app developers and system software developers. Students in computer science, computer engineering and electrical engineering courses in a computer organization, computer design ranging from sophomore required required For Senior Electives No pages: 800 Language: English Copyright: © Morgan Kaufmann 2014 Published: 26 September 2013 Imprint: Morgan Kaufmann Paperback ISBN: 9780124077263 E-book ISBN: 9780124078864 2014 Textbook Award Excellence - 2nd or later edition, edition text and academic authors of the association ... a fundamental computer organization book, as an introduction for readers with no experience in computer architecture topics, and as an up-to-date reference for computer architects. --Computer Reviews, July 22 2014 Thank you for posting a review! We appreciate your contribution. Share your review so everyone else can enjoy it too. Thank you for posting the review! Your review was sent successfully and is now waiting for our team to publish it. Review JetseSpijkstra on April 30, 2019 review stating The Great Book is a good book with a great detail explanation on computer architecture. A comprehensive book on MIPS Instruction Architecture Review Tsz T. on April 8, 2020 review stating a comprehensive book on MIPS Instruction Architecture is comprehensive and easy to understand. Good for beginners, as ACM named David A. Patterson recipient of the 2017 ACM A.M. Turing Award for Pioneer's systematic, quantitative approach to designing and evaluating computer architecture with a sustainable impact on the microprocessor industry. David A. Patterson is a Pardy Department of Computer Science, an honorary student at the University of California Berkeley. His teaching was awarded the Distinguished Teaching Merit Award from the University of California, the ACM Carlstrom Award, and the Mulligan Medal for Education and the IEEE Student Tuition Award. Patterson received the IEEE Technical Achievement Award and the ACM Eckert-Mauchly Award for his contribution to THE RISC, and he shared the IEEE Johnson Information Storage Award for contribution to RAID. He also shared the John von Neumann IEEE Medal and the C and C Award with John Hennessy. Like his co-author, Patterson is a member of the American Academy of Arts and Sciences, the Computer History Museum, ACM and IEEE, and he was elected to the National Academy of Engineering, the National Academy of Sciences and the Silicon Valley Engineering Hall of Fame. He served on the President's Information Technology Advisory Committee, as Chairman of CS's Department in the Berkeley EECS Division, as Chairman of the Association for Computing Research, and as President of ACM. This record led to awards for outstanding services from ACM, CRA and SIGARCH. ACM named John L. Hennessy the 2017 ACM A.M. Turing Award for his innovative systematic quantitative approach to designing and evaluating computer architectures with sustained impact on the microprocessor industry. John L. Hennessy is a professor of electrical engineering and computer science at Stanford University, where he has been a faculty member since 1977 and has been, since 2016, the tenth president. Professor Hennessy is a member of IEEE and ACM; Member of the National Academy of Engineering, the National Academy of Sciences and the American Philosophical Society; and a member of the American Academy of Arts and Sciences. Among his numerous awards are the 2001 Eckert-Mauchly Award for his contribution to RISC technology, the 2001 Seymour Krei Computer Engineering Award, and the 2000 John von Neumann Award, which he shared with David Patterson. He also received seven honorary doctorates. 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