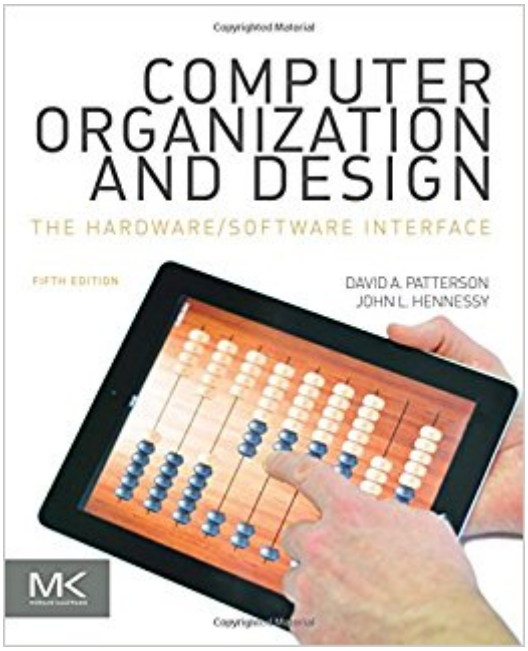
Computer Organization And Design MIPS Edition, Fifth Edition: The Hardware/Software Interface (The Morgan Kaufmann Series In Computer Architecture And Design)



Synopsis

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 AssociationIncludes new examples, exercises, and material highlighting the emergence of mobile computing and the cloudCovers 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 timesDiscusses and highlights the "Eight Great Ideas" of computer architecture:Ã Â 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;Ã Â and Dependability via RedundancyIncludes a full set of updated and improved exercises

Book Information

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Customer Reviews

"...the fundamental computer organization book, both as an introduction for readers with no experience in computer architecture topics, and as an up-to-date reference for computer architects."--Computing Reviews, July 22 2014

David A. Patterson is the Pardee Chair of Computer Science, Emeritus at the University of California Berkeley. His teaching has been honored by the Distinguished Teaching Award from the University of California, the Karlstrom Award from ACM, and the Mulligan Education Medal and Undergraduate Teaching Award from IEEE. Patterson received the IEEE Technical Achievement Award and the ACM Eckert-Mauchly Award for contributions to RISC, and he shared the IEEE Johnson Information Storage Award for contributions to RAID. He also shared the IEEE John von Neumann Medal and the C & C Prize with John Hennessy. Like his co-author, Patterson is a Fellow 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 Information Technology Advisory Committee to the U.S. President, as chair of the CS division in the Berkeley EECS department, as chair of the Computing Research Association, and as President of ACM. This record led to Distinguished Service Awards from ACM, CRA, and SIGARCH.John L. Hennessy is a Professor of Electrical Engineering and Computer Science at Stanford University, where he has been a member of the faculty since 1977 and was, from 2000 to 2016, its tenth President. Prof. Hennessy is a Fellow of the IEEE and ACM; a member of the National Academy of Engineering, the National Academy of Science, and the American Philosophical Society; and a Fellow of the American

Academy of Arts and Sciences. Among his many awards are the 2001 Eckert-Mauchly Award for his contributions to RISC technology, the 2001 Seymour Cray Computer Engineering Award, and the 2000 John von Neumann Award, which he shared with David Patterson. He has also received seven honorary doctorates.

This book is very useful for beginners who want to understand the software design of hardware as I am a computer science major. However, as I read through the book, there are many errors, typos, and inconsistencies in the book. As well, I think the book should provide more examples because one example is not enough especially if the user is dealing with multiple scenarios. The readability is good as font and size are easy on the eyes. One thing to be cautious is that a friend of mine bought this same new book from too, but her's page unravel from the book bindings as she kept flipping the book. I was very careful when I flipped the pages, so it was intact.

This is a wide-ranging and well organized introductory textbook, clearly written by real experts. I especially appreciate the extra sections on the history of the development of computers, and computer software, found on the website. However there are a few too many errors, several of which are not listed in the errata on the website, which hasn't been updated between September 2014 and May 2015. Also some parts are explained too quickly, or not at all, making it quite hard to understand, and the answers to the exercises are only available to registered instructors, so that it's easy for them to set homework/create assessments, but hard for someone who wants to study for their self.

I'm in the middle of homework, and went to reference the IEEE 754 double precision floating point format. The first mention of this in the book is wrong, on page 198 it says that the exponent field is 11 bits, and not two centimetres away has a diagram showing the field with 12 bits.On a previous chapter, page 69, the first introduction the book gives to arrays of words in memory is wrong, with the 'lw' address being calculated incorrectly.Unacceptable on a book in its fifth revision.

It was written by the developers of the MIPS processor so some of the details aren't there. They know the processor so well they leave out some of the details the newbies need. I purchased it for a college course so the Prof. was able to fill in the blanks.

This book is hard to follow, specially the exercises. I would encourage professors to find better

books on the subject matter. Also, these books fall apart. I had to glue pages back onto the binding when they fell out.

This is a crappy set up. I have several text books on Kindle but this one is pretty crappy. No real page numbers. It functions as in you can read it but if your professor says to go to a specific page your screwed. You spend more time trying to figure out where something is. Its just not set up well. I did not return it only because I don't want to carry around the actual book. For $75.00 I expected more.

The book I ordered started falling apart a month after I received it. I realize it was a paperback item but I expect a book I purchase to last longer than a month from the very light use I put it through. Opened it twice a week during the days I had the class that used the book and now the spin is already torn from within. I can't even return the item because it has been a month.

This textbook was required for one of my classes and it was horrible! Explanations in this book just aren't helpful, examples aren't very useful, and the end of chapter questions seem to almost come out of nowhere! With not even odd numbered solutions in the back of the book, it makes it very difficult to figure out if you know any of it. There are many typos and errors throughout the book as well. Just stay away, you are better off googling for everything in this book!

Beginner’s Guide to Programming Images, Animation, and Interaction (The Morgan Kaufmann Series in Computer Graphics) Computer Networks: A Systems Approach (The Morgan Kaufmann Series in Networking) 1st Grade Computer Basics : The Computer and Its Parts: Computers for Kids First Grade (Children’s Computer Hardware Books) VLSI Test Principles and Architectures: Design for Testability (The Morgan Kaufmann Series in Systems on Silicon) Software Engineering: The Current Practice (Chapman & Hall/CRC Innovations in Software Engineering and Software Development Series) Interface Oral Health Science 2014: Innovative Research on Biosis-Abiosis Intelligent Interface Digital Logic Design and Computer Organization with Computer Architecture for Security Game Feel: A Game Designer’s Guide to Virtual Sensation (Morgan Kaufmann Game Design Books) Data Mining: Concepts and Techniques, Third Edition (The Morgan Kaufmann Series in Data Management Systems) Data Mining, Fourth Edition: Practical Machine Learning Tools and Techniques (Morgan Kaufmann Series in Data Management Systems)