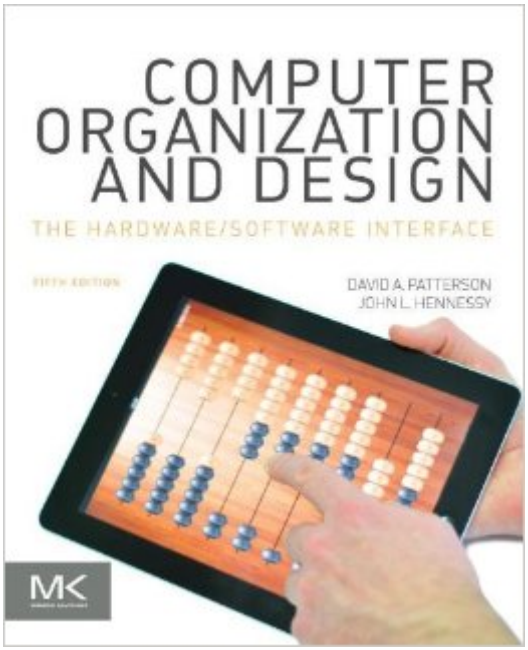
Computer Organization And Design: The Hardware/Software Interface (The Morgan Kaufmann Series In Computer Architecture And Design)



Synopsis

The fifth edition of Computer Organization and Designâ ”winner of a 2014 Textbook Excellence Award (Texty) from The Text and Academic Authors Associationâ ”moves forward into the post-PC era with new examples, exercises, and material highlighting the emergence of mobile computing and the cloud. This generational change is emphasized and explored with updated content featuring tablet computers, cloud infrastructure, and the ARM (mobile computing devices) and x86 (cloud computing) architectures. 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. Also new to this edition is discussion of the "Eight Great Ideas" of computer architecture. 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. Instructors looking for fourth edition teaching materials should e-mail textbook@elsevier.com.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: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;Â and Dependability via RedundancyIncludes a full set of updated and improved exercises

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Customer Reviews

The content of this book is definitely good, but the digital packaging of it is utter crap. This book is designed as a textbook, and as such, when my professor refers to page numbers, I would expect to be able to simply go to the specified page.Except I can’t. Because the digital version is just one long manuscript. One of my friends purchased the actual physical book, and not only does it have page numbers (as it should), the layout itself is both quite different and far superior.Bottom line, unless they fix the incredibly poor formatting of the digital version, get the physical one if you’re using at as a textbook.

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.

This book is littered with typos. Do not purchase. Example: Page 238, Question 3.18 asks to divide 74 by 21 using unsigned 6-bit integers. Last I recall, the highest 6-bit unsigned integers can go is 64.I’d stay away from this book as much as you can. I used this textbook for a course and even the professor has a strong disliking towards it. Do not buy.

OK content but for the price, the book is very poorly made. It has a cheap paper binding that looks like it will not last. The price is waaaay too high. Many college and universities are starting to discontinue the use of textbooks. This is one of the reasons why.

Got this as reference material for my Introduction to Computer Architecture and Organization course at university. Computer Architecture and Organization is a very, very interesting topic for those in electronics based engineering as well as computing fields as a whole, and this book attempts to delve into that very deep subject.The book is well written, and has many diagrams, tables, charts, and definitions, making it a very good book in my opinion. It was fairly simple to follow, although the subject matter is not simple. The writers seem to do a pretty good job of explaining everything for beginners (I can't speak from an experienced perspective). While the book was not required for the course, I did use it from time to time to brush up on the topics covered in class in a bit of a different way than what I was getting from the lecture, in the hopes of better retention. I believe there are practice problems throughout the book (although I was never required and didn't look at them).All in all, I think this book does as good of a job as it can with the subject matter, and conveys it well to beginners in the area. I would recommend this to anyone interested in the subject.

The index was spectacular (the only book which I have seen which doesn't expect you to read the reference sections) but I have one complaint. This only applies to the memory hierarchies/organization part of the book. The only qualm I had, which is specific to my learning style (which I"m sure isn't unique) is that the chapters are not organized in a way that relates to the flow or organization of the computer. Sometimes it was hard to relate two topics or subjects together because they weren't sequential in the book and they weren't explicitly linked.

Used this as a textbook for computer architecture. Doesn't always explain connections between previous chapters and new material being introduced to the student.

This not just a textbook, it is a reference that shows the details of the design of computers from processor architecture to busses and communications. If you don't know what a TLB - Translation Lookaside Buffer - does, you don't know how a computer works.

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