Computer Architecture

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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.

作者介绍:

John L. Hennessy is the president of Stanford University, where he has been a member

of the faculty since 1977 in the departments of electrical engineering and computer science. Hennessy is a fellow of the IEEE and the ACM, a member of the National Academy of Engineering, the National Academy of Science, the American Academy of Arts and Sciences, and the Spanish Royal Academy of Engineering. He received the 2001 Eckert-Mauchly Award for his contributions to RISC technology, the 2001 Seymour Cray Computer Engineering Award, and shared the John von Neumann award in 2000 with David Patterson. After completing the project in 1984, he took a one-year leave from the university to co-found MIPS Computer Systems, which developed one of the first commercial RISC microprocessors. After being acquired by Silicon Graphics in 1991, MIPS Technologies became an independent company in 1998, focusing on microprocessors for the embedded marketplace. As of 2004, over 300 million MIPS microprocessors have been shipped in devices ranging from video games and palmtop computers to laser printers and network switches. Hennessy's more recent research at Stanford focuses on the area of designing and exploiting multiprocessors. He helped lead the design of the DASH multiprocessor architecture, the first distributed shared-memory multiprocessors supporting cache coherency, and the basis for several commercial multiprocessor designs, including the Silicon Graphics Origin multiprocessors. Since becoming president of Stanford, revising and updating this text and the more advanced Computer Architecture: A Quantitative Approach has become a primary form of recreation and relaxation.

David A. Patterson was the first in his family to graduate from college (1969 A.B UCLA), and he enjoyed it so much that he didn't stop until a PhD, (1976 UCLA). After 4 years developing a wafer-scale computer at Hughes Aircraft, he joined U.C. Berkeley in 1977. He spent 1979 at DEC working on the VAX minicomputer. He and colleagues later developed the Reduced Instruction Set Computer (RISC). By joining forces with IBM's 801 and Stanford's MIPS projects, RISC became widespread. In 1984 Sun Microsystems recruited him to start the SPARC architecture. In 1987, Patterson and colleagues wondered if tried building dependable storage systems from the new PC disks. This led to the popular Redundant Array of Inexpensive Disks (RAID). He spent 1989 working on the CM-5 supercomputer. Patterson and colleagues later tried building a supercomputer using standard desktop computers and switches. The resulting Network of Workstations (NOW) project led to cluster technology used by many startups. He is now working on the Recovery Oriented Computing (ROC) project. In the past, he served as Chair of Berkeley's CS Division, Chair and CRA. He is currently serving on the IT advisory committee to the U.S. President and has just been elected President of the ACM. All this resulted in 150 papers, 5 books, and the following honors, some shared with friends: election to the National Academy of Engineering; from the University of California: Outstanding Alumnus Award (UCLA Computer Science Department), McEntyre Award for Excellence in Teaching (Berkeley Computer Science), Distinguished Teaching Award (Berkeley); from ACM: fellow, SIGMOD Test of Time Award, Karlstrom Outstanding Educator Award; from IEEE: fellow, Johnson Information Storage Award, Undergraduate Teaching Award, Mulligan Education Medal, and von Neumann Medal.

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标签

体系结构

计算机系统

计算机

计算机科学

计算机体系结构

ComputerArchitecture

architecture

Programming

评论

以前面试的时候，我经常说，我问的这个问题在 csapp 第某章里，你回去可以看一下。最近提这本书也比较多。

作为Stanford的校长，Hennessy真是太厉害了。BTW，这本书是在跟Professor David Wentzlaff在Coursera上的Advanced Computer Architecture时读的。对我这种机械电子+流体力学背景的人来说，非常难啃，非常有意思。

杰作，获益匪浅

不是研究 Architecture 的没必要细读, Computer Organization and Design 和 CSAPP 就足够了

果然经典!

关于并行运算讲得挺多，我因此也走入了CUDA的世界

这种常读常新的经典真的不好意思标记“读过”，但一直“在读”也说不过去，那就恭贺 Hennessy 和 Patterson 二位爷喜获图灵奖吧 :p

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CSAPP进阶，很赞 有深度，有时间把附录材料刷一遍，加油

讲系统的性能。实际上大多数it从业者关注的是实现。所以对本书的话题感兴趣的我估计是：大型应用的系统工程师，基础软硬件设备制造商的总工程师。可能还有计算中心的从业人员。

Bible

血和泪...

传说中每翻一遍都能有新收获的书： 从低到高的视角思考并行 1. instruction level parallelism 2. thread level parallelism 3. data level parallelism 4. request level parallelism

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上课的课本，书是好书，可惜我太菜。以后有时间应该仔细重读。

重读好书，相对于第四版，对SIMD，GPU等data level parallelism有入门性的讲解。

圣经般的存在啊 但是难度还是有的 初学者慎入

杰作，美国计算机研究生教材

看了几个介绍都说不适合新手，我这个新手只好硬着头皮逆流而上了。

GPU那章太恶心了，terminology hell。。。。。。

今年的图灵奖获主，本书经典中的经典。

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书评

Computer
Architecture的另一个名字是Trade-off。看着整个体系结构的发展历程中种种新技术的使用，无不体现了Trade-off的设计思想。硬件一直都是并行工作的，不管是pipeline, out-of-order, superscale, VLIW, Instruction Level
Parallelism抑或是现在的Multicore，硬件的发展...

我个人认为任何一个学计算机的，你可以不把自己的研究方向设在架构，编译器等等，但你必须要懂架构，编译器，操作系统。我个人认为这些东西对于一个CS的人来说不亚于结构，算法，以及标准库的重要。
我一直觉得英文书比中文书好懂，因为中文书喜欢咬文嚼字装专业，也或者是译...

书籍说明 计算机体系结构领域最经典著作 两位作者都是该领域的大牛
特别是附录部分，对计算机硬件的基础知识有一个全面介绍
适合基础不好的同学认真阅读(比如我。。。) 阅读建议
计算机体系结构最经典书籍，适合和第四章结合起来阅读 另外：
还是英文原版比较靠谱。。。

看第三版是因为家里已经有了。因为实在太厚（比乔布斯传还厚），拿起来太不方便，于是在网上寻找电子版。结果找到的大都是第4版的了，也挺好的。
第三版是2002年的，第四版这是2006年出版的。从封面的照片上就可以看出不同了：从一根柱子，变成了一堆柱子。 这真是一本与时...

这本书能够很全面的介绍计算机体系结构方面的知识，对于有兴趣在计算机体系结构，编译原理等方面进行发展的学生来说，个人觉得是必看的书。即使你的兴趣不在体系结构这个方面，读这本书对你也会有很大的帮助。
不过现在已经出到第四版了，建议大家还是参考最新的文献。

我只是刚刚开始读,
但是已经明白为什么L1Cache有ICache和DCache之分,为什么有N-way Cache,
为什么Pipeline让CPU更快, CPU的Pipeline的风险以及解决之道...
总之这本书让我大开眼界!

本书总的来说还是比较高级的内容，对内存模型，缓存结构方式的概念原理等都略过不讲。专心讲 quantitative 的部分。如果对体系结构不熟悉，应该先读 或者 。
本书最大的特点就是...

为了图速度，就买了中文，太坑了，翻译完全没逻辑，请翻译的老师不要找你的学生翻译这种经典书籍了。还得网上下载原版英文看，更浪费时间，建议直接买英文版，如果英语不太好，那也别买中文版，汉字你是认识，但放在一起，那句子。。。fk
把我整的很凌乱。计算机类的经典书籍建...

翻译太差，汉字是认识，但句子没逻辑，很多翻译
是错的。还得看原版，浪费时间，教授们没时间自己翻译，都是研究生做的。书绝对是经典，一定要买原版，不要看翻译，太坑了。。...

“《计算机体系结构：量化研究方法》（第5版）继续发扬传统，为学习计算机体系结构的学生提供了有关当前计算平台的最新信息，使他们能够洞悉体系结构，为设计未来系统提供帮助。这一新版本的亮点在于大幅修订了数据级并行章节，用传统的计算机体系结构术语进行了清晰的解读，褪...

书对应的CD资源在这：https://booksite.elsevier.com/9780123747501/downloads/Resources.zip 勿需多言，此书让我大开眼界！相见恨晚！截止明年3月，必须啃完！
此版增加了一个新的章节，定制化的架构，因为在特定领域里，定制化的架构比通用架构有更好的性能 此版最大改动是从...

如题，翻译差，差，差。。。。。。。。。。。。。。。。。。。。。！！！！！！！！！！！！翻译差，差，翻译差，差，翻译差，差，翻译差，差，翻译差，差，如题，翻译差，差，差。。。。。。。。。。。。。。。。。。。。。！！！！！！！！！！！！翻译差，差，翻译差，差，...

每一个搞计算机的必读之一，如果想让你的程序运行的快，那么你就读完这本书。

这本书会让你真正的理解什么是cache，
cache并不是对程序员是透明的，在编程的时候是需要考虑到的。
这本书需要读至少两遍才能真正体会其中的奥秘。
这本书是我们公司人手必读的一本书之一。

最近在关注多核计算机体系结构方面的内容，颇感当年读书不用功，很多基本的东西都忘记了。好在当你读书记住的东西不多，书倒是不少。于是翻箱倒柜的把这本体系结构的圣经给翻了出来。
《计算机体系结构：量化研究方法》不愧是此中的经典，把体系结构层次化的展现出来，同时把...

北大东门附近交易吧。 第五版，英文版，机械工业出版的，9成新，原价138，80出。
电话：133411267三七 啦啦啊啦啦啦啊啦啦啦啊啦啦啦啊啦
啦啦啊啦啦啦啊啦啦啦啊啦啦啦啊啦啦啦啊啦啦啦啊啦啦啦啊啦啦啦啊啦

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