

## <<计算机组成与设计>>

### 图书基本信息

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### 前言

About This Book We believe that learning in computer science and engineering should reflect the current state of the field, as well as introduce the principles that are shaping computing. We also feel that readers in every specialty of computing need to appreciate the organizational paradigms that determine the capabilities, performance, and, ultimately, the success of computer systems. . Modern computer technology requires professionals of every computing specialty to understand both hardware and software. The interaction between hardware..

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### 内容概要

软件设计者对软件系统运行环境硬件技术是否了解、了解多少会很大程度地影响软件系统的性能，同样，硬件设计者也必须了解他们的设计决策将对软件产生怎样的影响。

本书着眼于当前计算机设计中最基本的概念，展示了软硬件间的关系。

无论上述的哪一类读者，本书的内容都会使他们对计算机有更深入的认识。

同以往版本一样，本书采用MIPS处理器作为展示计算机硬件技术基本功能的核心。

本书逐条指令地列举了完整的MIPS指令集——汇编语言的核心、计算机算术运算、流水线、存储器层次结构以及I/O，并介绍了网络和多处理结构的基本内容。

将CPU性能和程序性能紧密地联系起来是本版的另一个新增内容。

作者展示了软硬件部件（如算法、编程语言、编译器、指令集系统结构以及处理器的实现）如何影响程序的性能。

另外，本版对软硬件的讨论更加深入，并在光盘中为侧重硬件和侧重软件的读者分别提供了相关资料

。随书光盘的内容非常丰富，不仅包括第9章、附录、本书网站内容、附加习题、术语表、参考文献、索引等，而且还提供了HDL模拟器、MIPS模拟器以及FPGA设计工具等软件。

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