

# COMPUTER ORGANIZATION AND DESIGN RISC-V EDITION

THE HARDWARE SOFTWARE INTERFACE



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# Computer Organization 2nd Edition

**Subrata Dasgupta**



## **Computer Organization 2nd Edition:**

**Computer Organization and Design RISC-V Edition** David A. Patterson, John L. Hennessy, 2020-12-11 Computer Organization and Design RISC V Edition The Hardware Software Interface Second Edition the award winning textbook from Patterson and Hennessy that is used by more than 40 000 students per year continues to present the most comprehensive and readable introduction to this core computer science topic This version of the book features the RISC V open source instruction set architecture the first open source architecture designed for use in modern computing environments such as cloud computing mobile devices and other embedded systems Readers will enjoy an online companion website that provides advanced content for further study appendices glossary references links to software tools and more Covers parallelism in depth with examples and content highlighting parallel hardware and software topics Focuses on 64 bit address ISA to 32 bit address and ISA for RISC V because 32 bit RISC V ISA is simpler to explain and 32 bit address computers are still best for applications like embedded computing and IoT Includes new sections in each chapter on Domain Specific Architectures DSA Provides updates on all the real world examples in the book [Computer Organization and Design](#) David A. Patterson, John L. Hennessy, 2013 Presents the fundamentals of hardware technologies assembly language computer arithmetic pipelining memory hierarchies and I O Provided by publisher **Computer Organization and Design** David A. Patterson, John L. Hennessy, 2024 [Computer Organization and Design](#) David A. Patterson, John L. Hennessy, 2004-08-07 This best selling text on computer organization has been thoroughly updated to reflect the newest technologies Examples highlight the latest processor designs benchmarking standards languages and tools As with previous editions a MIPS processor is the core used to present the fundamentals of hardware technologies at work in a computer system The book presents an entire MIPS instruction set instruction by instruction the fundamentals of assembly language computer arithmetic pipelining memory hierarchies and I O A new aspect of the third edition is the explicit connection between program performance and CPU performance The authors show how hardware and software components such as the specific algorithm programming language compiler ISA and processor implementation impact program performance Throughout the book a new feature focusing on program performance describes how to search for bottlenecks and improve performance in various parts of the system The book digs deeper into the hardware software interface presenting a complete view of the function of the programming language and compiler crucial for understanding computer organization A CD provides a toolkit of simulators and compilers along with tutorials for using them For instructor resources click on the grey companion site button found on the right side of this page This new edition represents a major revision New to this edition Entire Text has been updated to reflect new technology 70% new exercises Includes a CD loaded with software projects and exercises to support courses using a number of tools A new interior design presents defined terms in the margin for quick reference A new feature Understanding Program Performance focuses on performance from the programmer s perspective Two sets of exercises and

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