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V. Voevodin, S. Sobolev

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This book constitutes the refereed proceedings of the 4th Russian Supercomputing Days, RuSCDays 2018, held in Moscow, Russia, in September 2018. The 59 revised full papers and one revised short paper presented were carefully reviewed and selected from 136 submissions. The papers are organized in topical sections on parallel algorithms; supercomputer simulation; high performance architectures, tools and technologies.

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S. Kurgalin, S. Borzunov

# A Practical Approach to High-Performance Computing

- Critical field in the sphere of fundamental and applied sciences
- Authors combine visualization, comprehensibility, and strictness in their presentation
- Suitable for undergraduate and graduate students, and for researchers and practitioners engaged with high-performance computing systems

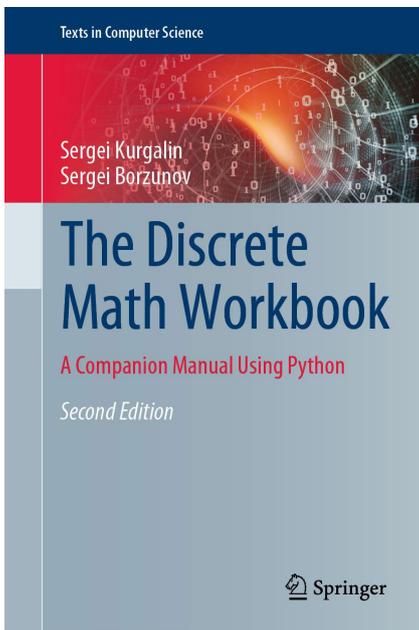
The book discusses the fundamentals of high-performance computing. The authors combine visualization, comprehensibility, and strictness in their material presentation, and thus influence the reader towards practical application and learning how to solve real computing problems. They address both key approaches to programming modern computing systems: multithreading-based parallelizing in shared memory systems, and applying message-passing technologies in distributed systems. The book is suitable for undergraduate and graduate students, and for researchers and practitioners engaged with high-performance computing systems. Each chapter begins with a theoretical part, where the relevant terminology is introduced along with the basic theoretical results and methods of parallel programming, and concludes with a list of test questions and problems of varying difficulty. The authors include many solutions and hints, and often sample code.

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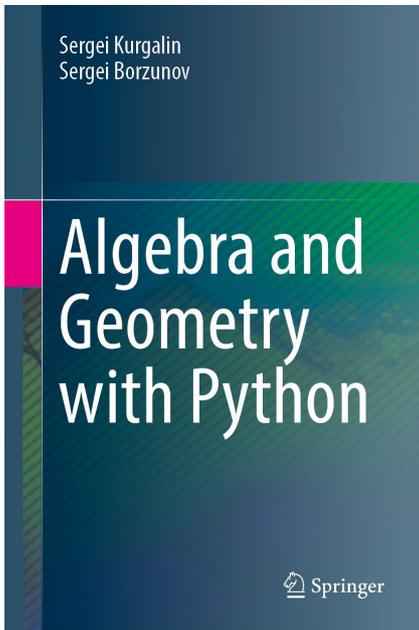
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2021. Approx. 200 p. 30 illus.

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- Suitable for advanced undergraduate and graduate students in computer science

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