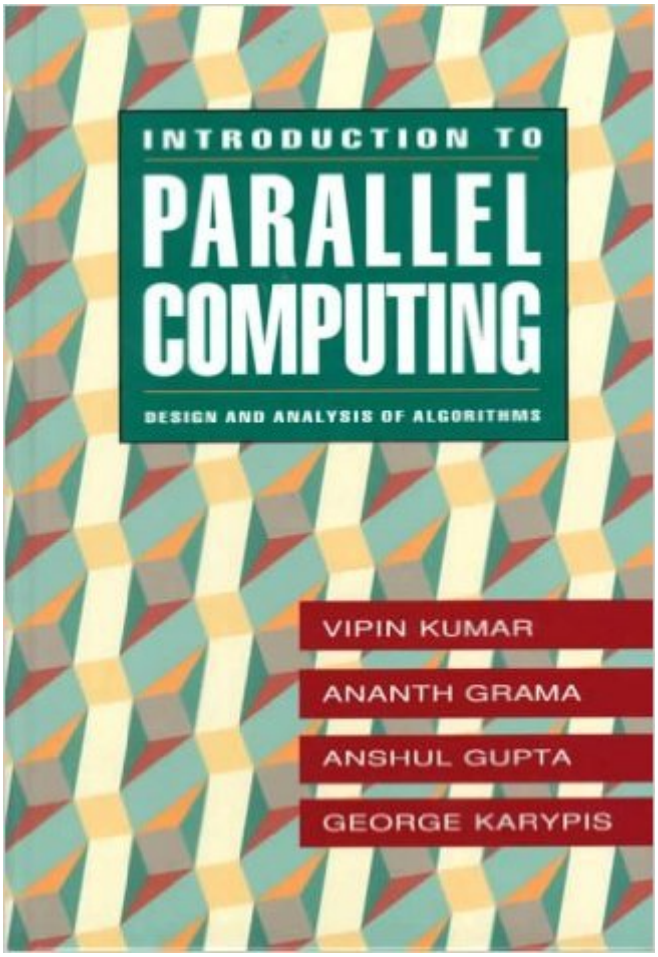
Introduction To Parallel Computing: Design And Analysis Of Parallel Algorithms



Synopsis

Take an in-depth look at techniques for the design and analysis of parallel algorithms with this new text. The broad, balanced coverage of important core topics includes sorting and graph algorithms, discrete optimization techniques, and scientific computing applications. The authors focus on parallel algorithms for realistic machine models while avoiding architectures that are unrealizable in practice. They provide numerous examples and diagrams illustrating potentially difficult subjects and conclude each chapter with an extensive list of bibliographic references. In addition, problems of varying degrees of difficulty challenge readers at different levels. Introduction to Parallel Computing is an ideal tool for students and professionals who want insight into problem-solving with parallel computers. Features: *Presents parallel algorithms in terms of a small set of basic data communication operations, greatly simplifying the design and understanding of these algorithms. *Emphasizes practical issues of performance, efficiency, and scalability. *Provides a self-contained discussion of the basic concepts of parallel computer architectures. *Covers algorithms for scientific computation, such as dense and sparse matrix computations, linear system solving, finite elements, and FFT. *Discusses algorithms for combinatorial optimization, including branch-and-bound, unstructured tree search, and dynamic programming. *Incorporates various parallel programming models and languages as well as illustrative examples for commercially-available computers. Audience: Junior/Senior/Graduate Computer Science and Computer Engineering majors Professional/Reference Courses: Distributed Computing Parallel Programming Parallel Algorithms Prerequisites: Operating Systems and Analysis of Algorithms 0805331700B04062001

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Customer Reviews

I bought this book when I was a 2nd grade CS student. I planned to start my research project in supercomputing field. So I decided to study the aspects of parallel computing starting by its concepts and programming. As a programmer I found that I would need the general view before coding. Kumar’s book is great in which it gives you generalized overview of hardware and software architectures. He and his contributors don’t take care of what system nor language you’re using. Instead, they want you to learn Parallel Programming. Scientific and non-numerical algorithms are overviewed and explained mathematically. They prove everything they state by using mathematics. I don’t know any better way. Do you? It’s worth every penny.

I will keep this *very* short because of the disclaimer. I purchased mine, approximately 2 years ago, for $20, but it’s now available, new for as little as $7. I think that the book is worth a lot more than $20 (let alone $7). It’s well-written, informative, technically accurate, and "well constructed" (it puts things in the right order ... in my opinion). Also, it’s a good book if you are starting out or have some experience in the domain (I had been working in the area for ~15 years when I read this text and *very much* wish that I had read it sooner).Disclaimer: I know 3 of the Authors and work with 1 of them

This book is a very good one for the parallel computing fields. The most interesting parts of the book to me are the parallel alogrithms design & analysis. The ideas are explained clearly and the exercises are nice too. I would like to recommend this book to all my friends who are interested in parallel computing.

This one is must for someone who has needs an introductory course for parallel computing. It dealt with the fundamental of parallel computing in terms of algorithms decide.

Excellent introduction to the field, specially for the beginner. There is no other book as clear and concise as this one. If you need an introduction to parallel computing / programming, buy the second edition of this book now!

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