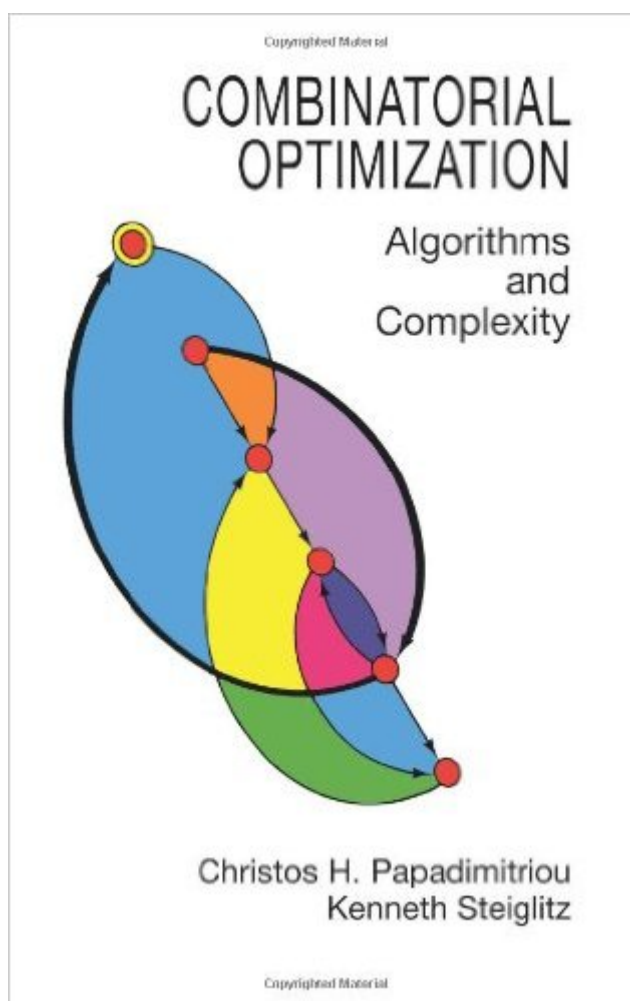The book was found

Combinatorial Optimization: Algorithms And Complexity (Dover Books On Computer Science)

Synopsis

This clearly written, mathematically rigorous text includes a novel algorithmic exposition of the simplex method and also discusses the Soviet ellipsoid algorithm for linear programming; efficient algorithms for network flow, matching, spanning trees, and matroids; the theory of NP-complete problems; approximation algorithms, local search heuristics for NP-complete problems, more. All chapters are supplemented by thought-provoking problems. A useful work for graduate-level students with backgrounds in computer science, operations research, and electrical engineering. "Mathematicians wishing a self-contained introduction need look no further." â " American Mathematical Monthly.

Book Information

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Average Customer Review: 4.2 out of 5 stars   27 customer reviews

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Customer Reviews

The book is good. The only issue I have is the Kindle e-book for it. The text is great since there are real text, hence scalable and can reflow when I rotate my tablet. However, the equations are just too tiny to read. I have similiar problem with other ebooks I ordered - e.g. Scattered Data Interpolation.I wish the equation are not just a tiny image and is done probably - e.g. using Latex.

The content is interesting, but very dense. It takes quite a while and often several passes to go through a chapter.

This book was a present for my son , who is a student (undergraduate studies) in the School of

electrical and computer engineering in NTUA, that is the same technical university in which was student years ago , and I think professor for a little time , the writer Christos H. Papadimitriou . My son's first impressions is - despite the fact it is a little dated - about an excellent book . Recommended for all those interested in specialized knowledge,in this topic of science.

One could buy this book for different reasons: interests in combinatorial optimization, of course; interests in what Papadimitriou has to say, since his thoughts on this subject are definitely invaluable; perhaps the price is a good reason alone.Whatever the reason, however, I think that would be a rare event to remain duped.I was preparing my exam in Computability and Complexity when I first used it. I've been wonderfully surprised by the amount of definitions, algorithms, concepts I've found in this book. I think one could use this book for a simple course on Algorithms, on Computability and/or Complexity, on the whole Combinatorial Optimization, and the book would be always and costantly useful.The chapters on algorithms and complexity, or those on NP completeness have proved to be gems. The chapters on Approximation and Local Search are great, and they feature a bunch of detailed and excellent quality stuff (e.g. there is a detailed treatment of Christofides' algorithm to approximate the TSP, that is quite an idiosyncratic topic).All in all, a very great book, with a value exponentially greater than the very insignificant price.

I had this book on my shelf for two years before taking a serious look at it, and only wish I had read it much earlier in life. Christos Papadimitriou has written quite a gem! On one hand this book serves as a good introduction to combinatorial optimization algorithms, in that it provides a flawless introduction to the simplex algorithm, linear and integer programming, and search techniques such as Branch-and-Bound and dynamic programming. On another, it serves as a good reference for many graph-theoretic algorithms. But most importantly Papadimitriou and Steiglitz seem to be on a quest to understand why some problems, such as Minimum Path or Matching, have efficient solutions, while others, such as Traveling Salesman, do not. And in doing so they end up providing the reader with a big picture behind algorithms and complexity, and the connection between optimization problems and complexity.After reading this and Papadimitriou's "Introduction to Computational Complexity" (which I also highly recommend), I now consider him one of the best at conveying complex ideas in a way that rarely confuses the reader. I also had the priviledge of attending one of his talks on complexity, and he seems just as effusive and transparent as a lecturer as he does a writer. Ah, for once I bought a Dover book that did not disappoint.

Effortless five stars. This is now almost 30 years old, and it is still a standard reference for the sorts of problems it addresses, in spite of the fact that those problems are mathematically interesting and often economically important, And of the standard references it is easily the cheapest, at least of those you have to pay anything at all for.My only caveat is that I personally would have appreciated a more geometric tilt, rather than the algebraic one that the authors favour. Results tend to be derived first and primarily using algebra, and only then discussed from a geometric point of view. In particular, e.g., the discussion of duality is heavily algebraic, with Farkas' lemma tacked onto the end, _and proved using the previous algebraic result_. This seemed perverse to me, but your mileage may differ.You could profitably also look at Boyd and Vandenberghe as well (speaking of things you don't _have_ to pay for).

So this is not a book for a programmer looking to optimize real world problems with combinatorial approaches, is a book for someone who has studied a lot of linear algebra and wants to learn a little bit about linear programming and combinatorial algorithms, it is super dense, doesn't explain the math notation when it is introduced... not light reading... I have TACP Vol 4A, I was looking for something a little lighter, I have avoided some of the robert sedgewick stuff mainly because of a personal bias against java... but that is going to be much easier for me to overcome.I don't know if this is a print on demand book or if the typesetting is just ugly, but it looks like it was photocopied from some PMT's shot off of some blue lines of linotype... I am going to keep it and try to keep referring to it, but it is going to be of very limited value to me.if you are going to reply that: I am mentally deficient because I haven't studied a lot of linear algebra... I will save you the trouble:Clearly I am mentally deficient because I haven't studied a lot of linear algebra.

It is a classical and introduction-level book about combinatorial optimization. Although the book is published in 1998, the contents are still useful for current readers who would like to get further understanding of optimization techniques.

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