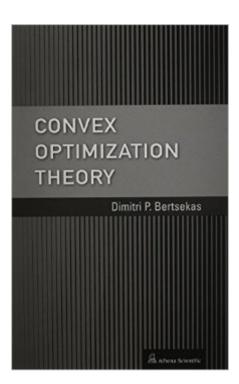
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# **Convex Optimization Theory**





# Synopsis

An insightful, concise, and rigorous treatment of the basic theory of convex sets and functions in finite dimensions, and the analytical/geometrical foundations of convex optimization and duality theory. Convexity theory is first developed in a simple accessible manner, using easily visualized proofs. Then the focus shifts to a transparent geometrical line of analysis to develop the fundamental duality between descriptions of convex sets and functions in terms of points and in terms of hyperplanes. Finally, convexity theory and abstract duality are applied to problems of constrained optimization, Fenchel and conic duality, and game theory to develop the sharpest possible duality results within a highly visual geometric framework. The book may be used as a text for a theoretical convex optimization course; the author has taught several variants of such a course at MIT and elsewhere over the last ten years. It may also be used as a supplementary source for nonlinear programming classes, and as a theoretical foundation for classes focused on convex optimization models (rather than theory). It is an ideal companion to our "Convex Optimization Algorithms book (2015).

## **Book Information**

Hardcover: 256 pages Publisher: Athena Scientific; 1st edition (June 30, 2009) Language: English ISBN-10: 1886529310 ISBN-13: 978-1886529311 Product Dimensions: 0.8 x 6.2 x 9.2 inches Shipping Weight: 1.2 pounds (View shipping rates and policies) Average Customer Review: 2.0 out of 5 stars Â See all reviews (1 customer review) Best Sellers Rank: #261,134 in Books (See Top 100 in Books) #26 in Books > Science & Math > Mathematics > Applied > Linear Programming #2536 in Books > Textbooks > Science & Mathematics > Mathematics

## **Customer Reviews**

sucks. The book is all about proofs with no applications. There are some supplementary problems on the website though. As an engineering guy, I was very disappointed with this book. The book is full of proofs with overwhelming math notations, and there is no worked out examples or anything to explain the concepts to beginners. If you are a mathematician looking for proofs of fancy theorems, this book is for you. Be aware that there are many errata so you need to manually go to the website

### and fix them yourself.

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