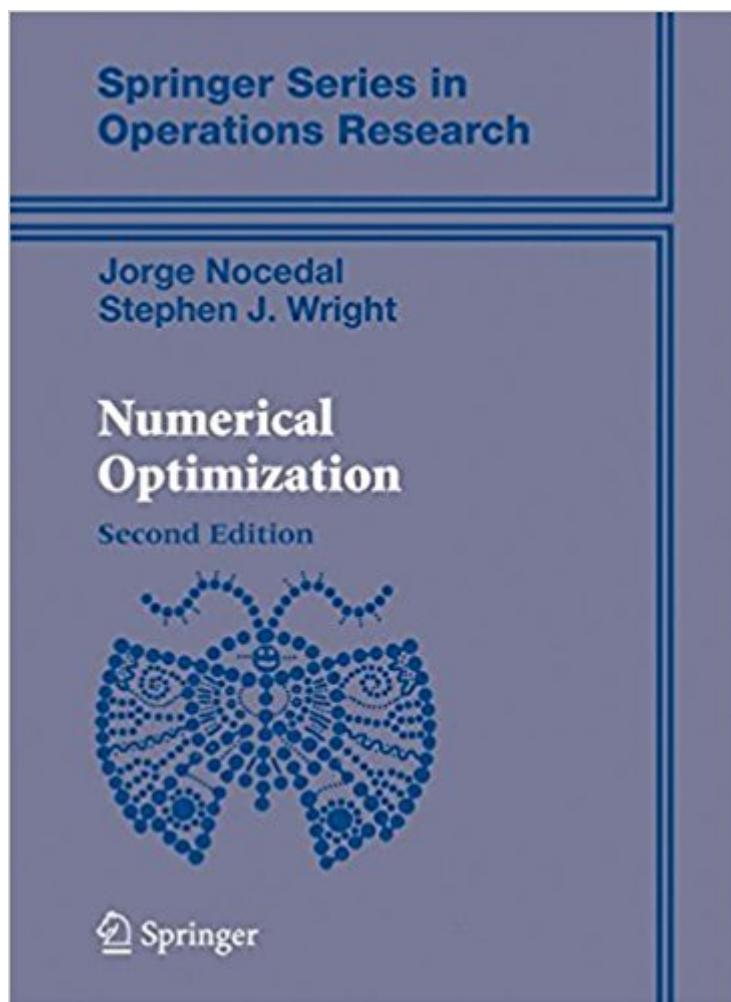


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# Numerical Optimization (Springer Series In Operations Research And Financial Engineering)



## **Synopsis**

Optimization is an important tool used in decision science and for the analysis of physical systems used in engineering. One can trace its roots to the Calculus of Variations and the work of Euler and Lagrange. This natural and reasonable approach to mathematical programming covers numerical methods for finite-dimensional optimization problems. It begins with very simple ideas progressing through more complicated concepts, concentrating on methods for both unconstrained and constrained optimization.

## **Book Information**

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## **Customer Reviews**

Numerical Optimization presents a comprehensive and up-to-date description of the most effective methods in continuous optimization. It responds to the growing interest in optimization in engineering, science, and business by focusing on the methods that are best suited to practical problems. For this new edition the book has been thoroughly updated throughout. There are new chapters on nonlinear interior methods and derivative-free methods for optimization, both of which are used widely in practice and the focus of much current research. Because of the emphasis on practical methods, as well as the extensive illustrations and exercises, the book is accessible to a wide audience. It can be used as a graduate text in engineering, operations research, mathematics, computer science, and business. It also serves as a handbook for researchers and practitioners in the field. The authors have strived to produce a text that is pleasant to read, informative, and

rigorous - one that reveals both the beautiful nature of the discipline and its practical side.

MMOR Mathematical Methods of Operations Research, 2001: "The book looks very suitable to be used in an graduate-level course in optimization for students in mathematics, operations research, engineering, and others. Moreover, it seems to be very helpful to do some self-studies in optimization, to complete own knowledge and can be a source of new ideas.... I recommend this excellent book to everyone who is interested in optimization problems."

Trained a physicist before I went into applied math and computer science I thoroughly enjoy this book. It math is not light but not that heavy either. I wouldn't consider it math at graduate level as most of the material is applicable to an undergrad with 1 year of calculus and another of linear algebra. A bit more of statistical elaborations might be useful for a third edition, given the current focus on machine learning. Anyhow as a first book it is still excellent.

This book is essential for any optimization guy. Provides most of the available methods including: stochastic gradient, steepest descent, newtons, trust-region methodologies. One of the authors was my professor. So, I am biased toward the quality and the material in this book. Because, indeed the author would deliver the material in a much nicer way than others.

Not the easiest to read at times but a classic, solid math and algorithms book. Comprehensive appendix for the math used, detailed (enough) proofs for the material presented and a good balance between examples and theory.

An excellent text on numerical optimization. Thorough but readable.

Amazing book, excellent style. Perfect for an introductory class in numerical optimisation at grad level.

Great book

Excellent as a algorithms reference! Not so good as explaining the mathematical background.

Outstanding text. Very useful. Pushed my research ahead quickly.

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