Practical Methods of Optimization 2nd Edition
R. Fletcher
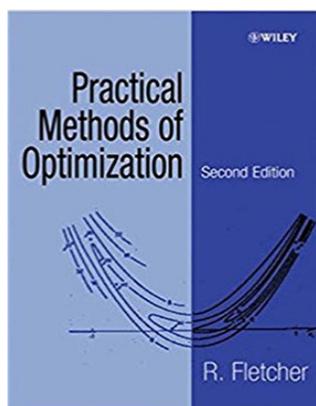
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About the Book

This established textbook is noted for its coverage of optimization methods that are of practical importance. It provides a thorough treatment of standard methods such as linear and quadratic programming, Newton-like methods and the conjugate gradient method. The theoretical aspects of the subject include an extended treatment of optimality conditions and the significance of Lagrange multipliers. The relevance of convexity theory to optimization is also not neglected. A significant proportion of the book is devoted to the solution of nonlinear problems, with an authoritative treatment of current methodology. Thus state of the art techniques such as the BFGS method, trust region methods and the SQP method are described and analysed. Other features are an extensive treatment of nonsmooth optimization and the L_1 penalty function.

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* Structure of Methods
* Newton-like Methods
* Conjugate Direction Methods
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* Sums of Squares and Nonlinear Equations
* Introduction
* Linear Programming
* The Theory of Constrained Optimization
* Quadratic Programming
* General Linearly Constrained Optimization
* Nonlinear Programming
* Other Optimization Problems

About the author Professor Roger Fletcher completed his MA at the University of Cambridge in 1960 and his PhD at the University of Leeds in 1963. He was a lecturer at the University of Leeds from 1963 to 1969, then Principal Scientific Officer at AERE Harwell until 1973. He then joined the University of Dundee where he is Professor of Optimization and holds the Baxter Chair of Mathematics. In 1997 he was awarded the prestigious Dantzig Prize for fundamental contributions to algorithms for nonlinear optimization, awarded jointly by the Society for Industrial and Applied Mathematics and the Mathematical Programming Society. He is a Fellow of the Royal Society of Edinburgh and of the Institute of Mathematics and its Applications.

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