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	Nota di contenuto	The Optimization Problem -- Basic Principles -- General Properties of Algorithms -- One-Dimensional Optimization -- Basic Multidimensional Gradient Methods -- Conjugate-Direction Methods -- Quasi-Newton Methods -- Minimax Methods -- Applications of Unconstrained Optimization -- Fundamentals of Constrained Optimization -- Linear Programming Part I: The Simplex Method -- Linear Programming Part II: Interior-Point Methods -- Quadratic and Convex Programming -- Semidefinite and Second-Order Cone Programming -- General Nonlinear Optimization Problems -- Applications of Constrained Optimization.
	Sommario/riassunto	In recent decades, advancements in the efficiency of digital computers and the evolution of reliable software for numerical computation have led to a rapid growth in the theory, methods, and algorithms of numerical optimization. This body of knowledge has motivated widespread applications of optimization methods in many disciplines (e.g., engineering, business, and science) and has subsequently led to problem solutions that were considered intractable not long ago. This unique and comprehensive textbook provides an extensive and practical treatment of the subject of optimization. Each half of the book contains a full semester's worth of complementary, yet stand-alone

material. In this substantially enhanced second edition, the authors have added sections on recent innovations, techniques, methodologies, and many problems and examples. These features make the book suitable for use in one or two semesters of a first-year graduate course or an advanced undergraduate course. Key features: proven and extensively class-tested content presents a unified treatment of unconstrained and constrained optimization, making it a dual-use textbook introduces new material on convex programming, sequential quadratic programming, alternating direction methods of multipliers (ADMM), and convex-concave procedures includes methods such as semi-definite and second-order cone programming adds new material to state-of-the-art applications for both unconstrained and constrained optimization provides a complete teaching package with many MATLAB examples and online solutions to the end-of-chapter problems uses a practical and accessible treatment of optimization provides two appendices that cover background theory so that non-experts can understand the underlying theory With its strong and practical treatment of optimization, this significantly enhanced revision of a classic textbook will be indispensable to the learning of university and college students and will also serve as a useful reference volume for scientists and industry professionals. Andreas Antoniou is Professor Emeritus in the Dept. of Electrical and Computer Engineering at the University of Victoria, Canada. Wu-Sheng Lu is Professor in the same department and university.