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Nota di contenuto	Chapter 1 - Introduction -- Chapter 2 - Optimization -- Chapter 3 - Spatial representations -- Chapter 4 - Manipulator kinematics -- Chapter 5 - The Manipulator Jacobian -- Chapter 6 - Path and trajectory planning -- Chapter 7 - Dynamics -- Chapter 8 - Structural optimization and stiffness analysis -- Chapter 9 - Kinematic Synthesis.
Sommario/riassunto	This book addresses optimization in robotics, in terms of both the configuration space and the metal structure of the robot arm itself; and discusses, describes and builds different types of heuristics and algorithms in MATLAB. In addition, the book includes a wealth of examples and exercises. In particular, it enables the reader to write a MATLAB code for all the related problems in robotics. The book also offers detailed descriptions of and builds from scratch several types of optimization algorithms using MATLAB and simplified methods, especially for inverse problems and avoiding singularities. Each chapter features examples and exercises to enhance the reader’s comprehension. Accordingly, the book offers the reader a better understanding of robot analysis from an optimization standpoint.