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Titolo	Robotics, vision and control : fundamental algorithms in MATLAB® / / by Peter Corke, Witold Jachimczyk, Remo Pillat
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Collana	Springer Tracts in Advanced Robotics, , 1610-742X ; ; 147
Disciplina	929.605 629.892637
Soggetti	Automatic control Robotics Automation Artificial intelligence Computer vision Signal processing Cognitive psychology Control, Robotics, Automation Artificial Intelligence Control and Systems Theory Computer Vision Digital and Analog Signal Processing Cognitive Psychology Control automàtic Visió per ordinador Robòtica
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction.-Foundations: Representing Position and Orientation -- Time and Motion -- Mobile Robotics: Mobile Robot Vehicles -- Navigation -- Localization and Mapping -- Robot Manipulators: Robot Arm Kinematics -- Manipulator Velocity -- Dynamics and Control --

Computer Vision: Light and Color -- Images and Image Processing,- Image Feature Extraction,- Image Formation -- Using Multiple Images -- Installing the Toolboxes -- Linear Algebra -- Geometry -- Lie Groups and Algebras.

Sommario/riassunto

This textbook provides a comprehensive, but tutorial, introduction to robotics, computer vision, and control. It is written in a light but informative conversational style, weaving text, figures, mathematics, and lines of code into a cohesive narrative. Over 1600 code examples show how complex problems can be decomposed and solved using just a few simple lines of code. This edition is based on MATLAB® and a number of MathWorks® toolboxes. These provide a set of supported software tools for addressing a broad range of applications in robotics and computer vision. These toolboxes enable the reader to easily bring the algorithmic concepts into practice and work with real, non-trivial, problems. For the beginning student, the book makes the algorithms accessible, the toolbox code can be read to gain understanding, and the examples illustrate how it can be used. The code can also be the starting point for new work, for practitioners, students, or researchers, by writing programs based on toolbox functions. Two co-authors from MathWorks have joined the writing team and bring deep knowledge of these MATLAB toolboxes and workflows.