1. Record Nr. UNINA9910299690603321

Titolo	New Development in Robot Vision / / edited by Yu Sun, Aman Behal, Chi-Kit Ronald Chung
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2015
ISBN	3-662-43859-3
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (209 p.)
Collana	Cognitive Systems Monographs, , 1867-4925 ; ; 23
Disciplina	629.892
Soggetti	Robotics Automation Artificial intelligence Optical data processing Robotics and Automation Artificial Intelligence Image Processing and Computer Vision
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Intensity-Difference Based Monocular Visual Odometry for Planetary Rovers -- Incremental Light Bundle Adjustment: Probabilistic Analysis and Application to Robotic Navigation -- Online Learning of Vision-Based Robot Control during Autonomous Operation -- Semantic and Spatial Content Fusion for Scene Recognition -- Modeling paired objects and their interaction -- Multi-modal Manhattan World Structure Estimation for Domestic Robots -- Improving RGB-D Scene Reconstruction Using Rolling Shutter Rectification -- RMSD: A 3D Real-time Mid-Level Scene Description System -- Probabilistic Active Recognition of Multiple Objects using Hough-based Geometric Matching Features.
Sommario/riassunto	The field of robotic vision has advanced dramatically recently with the development of new range sensors. Tremendous progress has been made resulting in significant impact on areas such as robotic navigation, scene/environment understanding, and visual learning. This

edited book provides a solid and diversified reference source for some of the most recent important advancements in the field of robotic vision. The book starts with articles that describe new techniques to understand scenes from 2D/3D data such as estimation of planar structures, recognition of multiple objects in the scene using different kinds of features as well as their spatial and semantic relationships, generation of 3D object models, approach to recognize partially occluded objects, etc. Novel techniques are introduced to improve 3D perception accuracy with other sensors such as a gyroscope, positioning accuracy with a visual servoing based alignment strategy for microassembly, and increasing object recognition reliability using related manipulation motion models. For autonomous robot navigation, different vision-based localization and tracking strategies and algorithms are discussed. New approaches using probabilistic analysis for robot navigation, online learning of vision-based robot control, and 3D motion estimation via intensity differences from a monocular camera are described. This collection will be beneficial to graduate students, researchers, and professionals working in the area of robotic vision. .