1. **Record Nr.** UNINA9910647782503321

   Autore Zhang Yu-Jin

   Titolo 3-D Computer Vision : Principles, Algorithms and Applications / / by Yu-Jin Zhang

   Pubbl/distr/stampa Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023

   ISBN 981-19-7580-9

   Edizione [1st ed. 2023.]

   Descrizione fisica 1 online resource (453 pages)

   Disciplina 006.37

   Soggetti Computer vision
   Image processing—Digital techniques
   Image processing
   Computer science
   User interfaces (Computer systems)
   Human-computer interaction
   Computer Vision
   Computer Imaging, Vision, Pattern Recognition and Graphics
   Image Processing
   Theory and Algorithms for Application Domains
   Computer Science
   User Interfaces and Human Computer Interaction
   Visió per ordinador
   Processament digital d'imatges
   Llibres electrònics

   Lingua di pubblicazione Inglese

   Formato Materiale a stampa

   Livello bibliografico Monografia

   Nota di bibliografia Includes bibliographical references and index.

   Nota di contenuto Chapter 1. Introduction -- Chapter 2. Camera Calibration -- Chapter 3. 3-D Image Acquisition -- Chapter 4. Video and Motion Information -- Chapter 5. Moving Object Detection and Tracking -- Chapter 6. Binocular Stereo Vision -- Chapter 7. Monocular Multiple Image Reconstruction -- Chapter 8. Monocular Single Image Reconstruction -- Chapter 9. 3-D Scene Representation -- Chapter 10. Scene Matching -- Chapter 11. Knowledge and Scene Interpretation -- Chapter 12. Spatial-Temporal Behavior Understanding.

Sommario/riassunto

This textbook offers advanced content on computer vision (basic content can be found in its prerequisite textbook, "2D Computer Vision: Principles, Algorithms and Applications"), including the basic principles, typical methods and practical techniques. It is intended for graduate courses on related topics, e.g. Computer Vision, 3-D Computer Vision, Graphics, Artificial Intelligence, etc. The book is mainly based on my lecture notes for several undergraduate and graduate classes I have offered over the past several years, while a number of topics stem from my research publications co-authored with my students. This book takes into account the needs of learners with various professional backgrounds, as well as those of self-learners. Furthermore, it can be used as a reference guide for practitioners and professionals in related fields. To aid in comprehension, the book includes a wealth of self-test questions (with hints and answers). On the one hand, these questions help teachers to carry out online teaching and interact with students during lectures; on the other, self-learners can use them to assess whether they have grasped the key content.