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Descrizione fisica	1 online resource (xvii, 223 pages) : illustrations (some color)
Collana	Technology in action Practical OpenCV
Disciplina	004 006.3 006.42
Soggetti	Computer vision Image processing - Digital techniques Image analysis Open source software
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Hands on projects for computer vision on the Windows, Linux and Raspberry Pi platforms"--Cover. Includes index.
Nota di contenuto	""Contents at a Glance""; ""Contents""; ""About the Author""; ""About the Technical Reviewer""; ""Acknowledgments""; ""Part 1: Getting Comfortable""; ""Chapter 1: Introduction to Computer Vision and OpenCV""; ""Why Was This Book Written?""; ""OpenCV""; ""History of OpenCV""; ""Built-in Modules""; ""Summary""; ""Chapter 2: Setting up OpenCV on Your Computer""; ""Operating Systems""; ""Ubuntu""; ""Simple Install""; ""Customized Install (32-bit)""; ""Customized Install (64-bit)""; ""Checking the Installation""; ""Installing Without Superuser Privileges"" ""Using an Integrated Development Environment""""Windows""; ""Mac OSX""; ""Summary""; ""Chapter 3: CV Bling€?OpenCV Inbuilt Demos""; ""Camshift""; ""Stereo Matching""; ""Homography Estimation in Video""; ""Circle and Line Detection""; ""Image Segmentation""; ""Bounding Box and Circle""; ""Image Inpainting""; ""Summary""; ""Chapter 4: Basic Operations on Images and GUI Windows""; ""Displaying Images from Disk in a Window""; ""The cv::Mat Structure""; ""Creating a cv::Mat""; ""Accessing elements of a cv::Mat""; ""Expressions with cv::Mat"";

""Converting Between Color-spaces""
""GUI Track-Bars and Callback Functions""""Callback Functions""; ""ROIs: Cropping a Rectangular Portion out of an Image""; ""Region of Interest in an Image""; ""Accessing Individual Pixels of an Image""; ""Exercise""; ""Videos""; ""Displaying the Feed from Your Webcam or USB Camera/File""; ""Writing Videos to Disk""; ""Summary""; ""Part 2: Advanced Computer Vision Problems and Coding Them in OpenCV""; ""Chapter 5: Image Filtering""; ""Image Filters""; ""Blurring Images""; ""Resizing Imagesa€?Up and Down""; ""Eroding and Dilating Images""; ""Detecting Edges and Corners Efficiently in Images""
""Edges""""Canny Edges""; ""Corners""; ""Object Detector App""; ""Morphological Opening and Closing of Images to Remove Noise""; ""Summary""; ""Chapter 6: Shapes in Images""; ""Contours""; ""Point Polygon Test""; ""Hough Transform""; ""Detecting Lines with Hough Transform""; ""Detecting Circles with Hough Transform""; ""Generalized Hough Transform""; ""RANdom Sample Consensus (RANSAC)""; ""Bounding Boxes and Circles""; ""Convex Hulls""; ""Summary""; ""Chapter 7: Image Segmentation and Histograms""; ""Image Segmentation""; ""Simple Segmentation by Thresholding""; ""Floodfill""
""Watershed Segmentation""""GrabCut Segmentation""; ""Histograms""; ""Equalizing Histograms""; ""Histogram Backprojections""; ""Meanshift and Camshift""; ""Summary""; ""Chapter 8: Basic Machine Learning and Object a€?Detection Based on Keypoints""; ""Keypoints and Keypoint Descriptors: Introduction and Terminology""; ""General Terms""; ""How Does the Keypoint-Based Method Work?""; ""SIFT Keypoints and Descriptors""; ""Keypoint Detection and Orientation Estimation""; ""SIFT Keypoint Descriptors""; ""Matching SIFT Descriptors""; ""SURF Keypoints and Descriptors""; ""SURF Keypoint Detection""
""SURF Descriptor""

Sommario/riassunto

Practical OpenCV is a hands-on project book that shows you how to get the best results from OpenCV, the open-source computer vision library. Computer vision is key to technologies like object recognition, shape detection, and depth estimation. OpenCV is an open-source library with over 2500 algorithms that you can use to do all of these, as well as track moving objects, extract 3D models, and overlay augmented reality. It's used by major companies like Google (in its autonomous car), Intel, and Sony; and it is the backbone of the Robot Operating System's computer vision capability. In short, if you're working with computer vision at all, you need to know OpenCV. With Practical OpenCV, you'll be able to: Get OpenCV up and running on Windows or Linux. Use OpenCV to control the camera board and run vision algorithms on Raspberry Pi. Understand what goes on behind the scenes in computer vision applications like object detection, image stitching, filtering, stereo vision, and more. Code complex computer vision projects for your class/hobby/robot/job, many of which can execute in real time on off-the-shelf processors. Combine different modules that you develop to create your own interactive computer vision app.
