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   Nota di contenuto   Visual Features: From Early Concepts to Modern Computer Vision --
                         Where Next in Object Recognition and How Much Supervision Do We
                         Need? -- Recognizing Human Actions by Using Effective Codebooks
                         and Tracking -- Evaluating and Extending Trajectory Features for
                         Activity Recognition -- Co-Recognition of Images and Videos:
                         Unsupervised Matching of Identical Object Patterns and its Applications
                         -- Stereo Matching: State-of-the-Art and Research Challenges --
                         Visual Localization for Micro Aerial Vehicles in Urban Outdoor
                         Environments -- Moment Constraints in Convex Optimization for
                         Segmentation and Tracking -- Large Scale Metric Learning for
                         Distance-Based Image Classification on Open Ended Data Sets -- Top-
                         Down Bayesian Inference of Indoor Scenes -- Efficient Loopy Belief
                         Propagation Using the Four Color Theorem -- Boosting k-Nearest
                         Neighbors Classification -- Learning Object Detectors in Stationary
                         Environments -- Video Temporal Super-Resolution Based on Self-
                         Similarity.

   Sommario/riassunto   Computer vision is the science and technology of making machines that
                         see. It is concerned with the theory, design and implementation of
                         algorithms that can automatically process visual data to recognize
                         objects, track and recover their shape and spatial layout. This unique
                         text/reference presents a broad selection of cutting-edge research,
                         covering both theoretical and practical aspects of the three main areas
                         in computer vision: reconstruction, registration, and recognition. The
                         book provides an in-depth overview of challenging areas, in addition to

descriptions of novel algorithms that exploit machine learning and pattern recognition techniques to infer the semantic content of images and videos. Topics and features: Investigates visual features, trajectory features, and stereo matching Reviews the main challenges of semi-supervised object recognition, and a novel method for human action categorization Presents a framework for the visual localization of MAVs, and for the use of moment constraints in convex shape optimization Examines solutions to the co-recognition problem, and distance-based classifiers for large-scale image classification Describes how the four-color theorem can be used in early computer vision for solving MRF problems where an energy is to be minimized Introduces a Bayesian generative model for understanding indoor environments, and a boosting approach for generalizing the k-NN rule Discusses the issue of scene-specific object detection, and an approach for making temporal super resolution video from a single input image sequence This must-read collection will be of great value to advanced undergraduate and graduate students of computer vision, pattern recognition and machine learning. Researchers and practitioners will also find the book useful for understanding and reviewing current approaches in computer vision.