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Disciplina	006.4/2/01516
Soggetti	Optical data processing Computers Computer graphics Pattern recognition Artificial intelligence Software engineering Image Processing and Computer Vision Theory of Computation Computer Graphics Pattern Recognition Artificial Intelligence Software Engineering/Programming and Operating Systems
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Nota di contenuto	and chapter summary -- Cartan's moving frame method and its application to the geometry and evolution of curves in the euclidean, affine and projective planes -- Representation of three-dimensional object structure as cross-ratios of determinants of stereo image points -- A case against epipolar geometry -- Repeated structures: Image correspondence constraints and 3D structure recovery -- How to use the cross ratio to compute projective invariants from two images -- On geometric and algebraic aspects of 3D affine and projective structures

from perspective 2D views -- The double algebra: An effective tool for computing invariants in computer vision -- Matching perspective views of parallel plane structures -- Invariants for recovering shape from shading -- Fundamental difficulties with projective normalization of planar curves -- Invariant size functions -- Euclidean reconstruction from uncalibrated views -- Accurate projective reconstruction -- Applications of motion field of curves -- Affine reconstruction from perspective image pairs obtained by a translating camera -- Using invariance and quasi-invariance for the segmentation and recovery of curved objects -- Representations of 3D objects that incorporate surface markings -- Model-based invariant functions and their use for recognition -- Integration of multiple feature groups and multiple views into a 3D object recognition system -- Hierarchical object description using invariants -- Generalizing invariants for 3-D to 2-D matching -- Recognition by combinations of model views: Alignment and invariance -- Classification based on the cross ratio -- Correspondence of coplanar features through P2-invariant representations -- Integrating algebraic curves and surfaces, algebraic invariants and Bayesian methods for 2D and 3D object recognition.

Sommario/riassunto

This book is the proceedings of the Second Joint European-US Workshop on Applications of Invariance to Computer Vision, held at Ponta Delgada, Azores, Portugal in October 1993. The book contains 25 carefully refereed papers by distinguished researchers. The papers cover all relevant foundational aspects of geometric and algebraic invariance as well as applications to computer vision, particularly to recovery and reconstruction, object recognition, scene analysis, robotic navigation, and statistical analysis. In total, the collection of papers, together with an introductory survey by the editors, impressively documents that geometry, in its different variants, is the most successful and ubiquitous tool in computer vision.