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Nota di contenuto	Digital Geometry and Topology: Curves and Surfaces -- Connectivity Preserving Voxel Transformation -- Thinning on Quadratic, Triangular, and Hexagonal Cell Complexes -- Experimental Comparison of Continuous and Discrete Tangent Estimators Along Digital Curves -- Polyhedral Surface Approximation of Non-convex Voxel Sets through the Modification of Convex Hulls -- Weighted Neighborhood Sequences in Non-standard Three-Dimensional Grids -- Parameter Optimization -- Computing Homology Generators for Volumes Using Minimal Generalized Maps -- Digital Segments and Hausdorff Discretization --

Combinatorics in Digital Spaces: Lattice Polygons, Polytopes, Tilings, and Patterns -- Scaling of Plane Figures That Assures Faithful Digitization -- Computing Admissible Rotation Angles from Rotated Digital Images -- On the Number of hv-Convex Discrete Sets -- Finding the Orthogonal Hull of a Digital Object: A Combinatorial Approach -- A Discrete Approach for Supervised Pattern Recognition -- Image Representation, Segmentation, Grouping, and Reconstruction -- Robust Decomposition of Thick Digital Shapes -- Segmentation of Noisy Discrete Surfaces -- MRF Labeling with a Graph-Shifts Algorithm -- Label Space: A Multi-object Shape Representation -- A New Image Segmentation Technique Using Maximum Spanning Tree -- Applications of Computational Geometry, Integer and Linear Programming to Image Analysis -- Reducing the Coefficients of a Two-Dimensional Integer Linear Constraint -- A Branch & Bound Algorithm for Medical Image Registration -- Global Optimization for First Order Markov Random Fields with Submodular Priors -- Transformation Polytopes for Line Correspondences in Digital Images -- Linear Boundary and Corner Detection Using Limited Number of Sensor Rows -- Fuzzy and Stochastic Image Analysis, Parallel Architectures and Algorithms -- A Convergence Proof for the Horn-Schunck Optical-Flow Computation Scheme Using Neighborhood Decomposition -- Topologically Correct 3D Surface Reconstruction and Segmentation from Noisy Samples -- Detecting the Most Unusual Part of a Digital Image -- Labeling Irregular Graphs with Belief Propagation -- Grammars and Models for Image or Scene Analysis -- Image Registration Using Markov Random Coefficient Fields -- A Secret Sharing Scheme for Digital Images Based on Two-Dimensional Linear Cellular Automata -- Pure 2D Picture Grammars (P2DPG) and P2DPG with Regular Control -- A Deterministic Turing Machine for Context Sensitive Translation of Braille Codes to Urdu Text -- Rewriting P Systems Generating Iso-picture Languages -- Discrete Tomography, Medical Imaging, and Biometrics -- Reconstructing a Matrix with a Given List of Coefficients and Prescribed Row and Column Sums Is NP-Hard -- A Reasoning Framework for Solving Nonograms -- A Memetic Algorithm for Binary Image Reconstruction -- Personal Identification Based on Weighting Key Point Scheme for Hand Image -- A Min-Cost-Max-Flow Based Algorithm for Reconstructing Binary Image from Two Projections Using Similar Images -- Comparison of Local and Global Region Merging in the Topological Map -- Novel Edge Detector.

Sommario/riassunto

This volume contains the proceedings of the 12th International Workshop on Combinatorial Image Analysis. Coverage includes digital geometry, curves and surfaces, applications of computational geometry, as well as medical imaging and biometrics.