1. Record Nr. UNINA9910484800103321

Titolo	Discrete Geometry for Computer Imagery [[electronic resource]] : 15th IAPR International Conference, DGCI 2009, Montréal, Canada, September 30 - October 2, 2009, Proceedings / / edited by Srecko Brlek, Christophe Reutenauer, Xavier Provençal
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2009
ISBN	3-642-04397-6
Edizione	[1st ed. 2009.]
Descrizione fisica	1 online resource (XII, 540 p.)
Collana	Image Processing, Computer Vision, Pattern Recognition, and Graphics ; ; 5810
Classificazione	DAT 756f SS 4800
Disciplina	006.601516
Soggetti	Computer graphics Pattern recognition Optical data processing Computer science—Mathematics Algorithms Computer Graphics Pattern Recognition Image Processing and Computer Vision Computer Imaging, Vision, Pattern Recognition and Graphics Discrete Mathematics in Computer Science Algorithm Analysis and Problem Complexity Kongress. Montreal (2009)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited Papers -- Arithmetic Discrete Planes Are Quasicrystals -- Affine Connections, and Midpoint Formation -- Mathematics in Atmospheric Sciences: An Overview -- Discrete Shape Representation, Recognition and Analysis -- On Three Constrained Versions of the Digital Circular Arc Recognition Problem -- Efficient Lattice Width Computation in

Arbitrary Dimension -- Convergence of Binomial-Based Derivative Estimation for C 2 Noisy Discretized Curves -- Christoffel and Fibonacci Tiles -- Optimal Partial Tiling of Manhattan Polyominoes -- An Improved Coordinate System for Point Correspondences of 2D Articulated Shapes -- Two Linear-Time Algorithms for Computing the Minimum Length Polygon of a Digital Contour -- Multiscale Discrete Geometry -- Discrete and Combinatorial Tools for Image Segmentation and Analysis -- Vanishing Point Detection with an Intersection Point Neighborhood -- Ellipse Detection with Elemental Subsets -- Multi-Label Simple Points Definition for 3D Images Digital Deformable Model -- Marching Triangle Polygonization for Efficient Surface Reconstruction from Its Distance Transform -- Multivariate Watershed Segmentation of Compositional Data -- Pixel Approximation Errors in Common Watershed Algorithms -- Digital Deformable Model Simulating Active Contours -- Discrete and Combinatorial Topology -- Topology-Preserving Thinning in 2-D Pseudomanifolds -- Discrete Versions of Stokes' Theorem Based on Families of Weights on Hypercubes -- Distances on Lozenge Tilings -- Jordan Curve Theorems with Respect to Certain Pretopologies on -- Decomposing Cavities in Digital Volumes into Products of Cycles -- Thinning Algorithms as Multivalued -Retractions -- Characterization of Simple Closed Surfaces in ?3: A New Proposition with a Graph-Theoretical Approach -- Border Operator for Generalized Maps -- Computing Homology: A Global Reduction Approach -- Models for Discrete Geometry -- Surface Sketching with a Voxel-Based Skeleton -- Minimal Offsets That Guarantee Maximal or Minimal Connectivity of Digital Curves in nD -- Arithmetization of a Circular Arc -- On the Connecting Thickness of Arithmetical Discrete Planes -- Patterns in Discretized Parabolas and Length Estimation -- Universal Spaces for Surfaces -- A Linear Time and Space Algorithm for Detecting Path Intersection -- Geometric Transforms -- The Curvilinear Skeleton -- A Discrete ?-Medial Axis -- Appearance Radii in Medial Axis Test Mask for Small Planar Chamfer Norms -- Exact, Scaled Image Rotation Using the Finite Radon Transform -- Lower and Upper Bounds for Scaling Factors Used for Integer Approximation of 3D Anisotropic Chamfer Distance Operator -- A Novel Algorithm for Distance Transformation on Irregular Isothetic Grids -- Fully Parallel 3D Thinning Algorithms Based on Sufficient Conditions for Topology Preservation -- Quasi-Affine Transformation in Higher Dimension -- Discrete Tomography -- Solving Some Instances of the 2-Color Problem -- Grey Level Estimation for Discrete Tomography -- The 1-Color Problem and the Brylawski Model.

Sommario/riassunto

This book constitutes the refereed proceedings of the 15th IAPR International Conference on Discrete Geometry for Computer Imagery, DGCI 2009, held in Montréal, Canada, in September/October 2009. The 42 revised full papers were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on discrete shape, representation, recognition and analysis; discrete and combinatorial tools for image segmentation and analysis; discrete and combinatorial Topology; models for discrete geometry; geometric transforms; and discrete tomography.