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Titolo	Digital and Image Geometry [[electronic resource]] : Advanced Lectures / / edited by Gilles Bertrand, Atsushi Imiya, Reinhard Klette
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Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 2243
Disciplina	621.36/7
Soggetti	Application software Geometry Computer graphics Optical data processing Computer science—Mathematics Computer Applications Computer Graphics Image Processing and Computer Vision Discrete Mathematics in Computer Science Mathematics of Computing
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Topology -- An Axiomatic Approach to Digital Topology -- Generic Programming Techniques that Make Planar Cell Complexes Easy to Use -- Algorithms and Data Structures for Computer Topology -- Computer Presentation of 3-Manifolds -- “Continuous” Multifunctions in Discrete Spaces with Applications to Fixed Point Theory -- Representation -- SpaMod: Design of a Spatial Modeling Tool -- to Combinatorial Pyramids -- Representing Vertex-Based Simplicial Multi-complexes -- Discrete Polyhedrization of a Lattice Point Set -- Digital Partitions Encoding -- Geometry -- Stability and Instability in Discrete Tomography -- Point-to-Line Mappings and Hough Transforms -- Digital Lines and Digital Convexity -- Curvature Flow in Discrete Space -- Hausdorff Sampling of Closed Sets into a Boundedly Compact Space -- Cell Complexes and Digital Convexity -- Multigrid Convergence --

Approximation of 3D Shortest Polygons in Simple Cube Curves -- Segmentation and Length Estimation of 3D Discrete Curves -- Multigrid Convergence of Geometric Features -- Length Estimation for Curves with Different Samplings -- The 2-D Leap-Frog: Integrability, Noise, and Digitization -- On Approximation of Jordan Surfaces in 3D -- Shape Similarity and Simplification -- Similarity Measure Computation of Convex Polyhedra Revisited -- Reversible Surface Skeletons of 3D Objects by Iterative Thinning of Distance Transforms -- Distance Transformation and Skeletonization of 3D Pictures and Their Applications to Medical Images -- About the Limiting Behaviour of Iterated Robust Morphological Operators -- Collinearity and Weak Collinearity in the Digital Plane.

Sommario/riassunto

Images or discrete objects, to be analyzed based on digital image data, need to be represented, analyzed, transformed, recovered etc. These problems have stimulated many interesting developments in theoretical foundations of image processing. This coherent anthology presents 27 state-of-the-art surveys and research papers on digital image geometry and topology. It is based on a winter school held at Dagstuhl Castle, Germany in December 2000 and offers topical sections on topology, representation, geometry, multigrid convergence, and shape similarity and simplification.