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Descrizione fisica	1 online resource (XIV, 552 p. 194 illus., 146 illus. in color.)
Collana	Lecture Notes in Computer Science ; ; 12708
Disciplina	516.11
Soggetti	Discrete geometry Combinatorial geometry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Invited papers -- Some Open Questions on Morphological Operators and Representations in the Deep Learning Era -- Split Trees -A Unifying Model For Many Important Random Trees Of Logarithmic Height: A Brief Survey -- On topological analysis of cells organization in biological images -- Applications in Image Processing, Computer Vision, and Pattern Recognition -- A New Matching Algorithm between Trees of Shapes and its Application to Brain Tumor Segmentation -- Combining Deep Learning and Mathematical Morphology for Historical Map Segmentation -- Automatic forest road extraction from LiDAR data of mountainous areas -- Fast Pattern Spectra using Tree Representation of the Image for Patch Retrieval -- Watershed-based attribute profiles for pixel classification of remote sensing data -- Discrete and Combinatorial Topology -- Completions, perforations and fillings -- Body Centered Cubic Grid --- Coordinate System and Discrete Analytical Plane Definition -- Digital convex + unimodular mapping = almost 4-connected -- Distance-Oriented Surface Skeletonization on the Face-Centered Cubic Grid -- Homotopic Digital Rigid Motion: An Optimization Approach on Cellular Complexes -- Locally turn-bounded curves are quasi-regular -- Discrete Geometry - Models, Transforms, Visualization.-Shear based Bijective Digital Rotation in Hexagonal Grids

-- An isometry classification of periodic point sets -- Visiting bijective digitized reflections and rotations using geometric algebra -- Digital Straight Segment Filter for Geometric Description -- An alternative definition for digital convexity -- Digital geometry for the dual of some semi-regular tessellations -- Discrete Tomography and Inverse Problems -- On the geometric aspects of the class of hv-convex switching components -- Properties of unique degree sequences of 3-uniform hypergraphs -- Power sum polynomials in a discrete tomography perspective.-On the reconstruction of 3-uniform hypergraphs from step-two degree sequences.-Hierarchical and Graph-based Models, Analysis and Segmentation -- Towards Interactive Image Segmentation by Dynamic and Iterative Spanning Forest -- Stability of the tree of shapes to additive noise -- An algebraic framework for out-of-core hierarchical segmentation algorithms.-Fuzzy-marker-based segmentation using hierarchies.-Graph-based Supervoxel Computation from Iterative Spanning Forest -- Graph-based M-tortuosity estimation -- A maximum-flow model for digital elastica shape optimization -- Image Segmentation by Relaxed Deep Extreme Cut with Connected Extreme Points -- Learning-based Approaches to Mathematical Morphology -- On some associations between mathematical morphology and artificial intelligence -- Going beyond p-convolutions to learn grayscale morphological operators -- Scale Equivariant Neural Networks with Morphological Scale-Spaces -- Multivariate and PDE-based Mathematical morphology, Morphological Filtering -- Eigenfunctions of Ultrametric Morphological Openings and Closings -- Measuring the Irregularity of Vector-valued Morphological Operators using Wasserstein Metric -- An Equivalence Relation between Morphological Dynamics and Persistent Homology in n-D -- Sparse Approximate Solutions to Max-Plus Equations.

Sommario/riassunto

This book constitutes the proceedings of the First IAPR International Conference on Discrete Geometry and Mathematical Morphology, DGMM 2021, which was held during May 24-27, 2021, in Uppsala, Sweden. The conference was created by joining the International Conference on Discrete Geometry for computer Imagery, DGCI, with the International Symposium on Mathematical Morphology, ISMM. The 36 papers included in this volume were carefully reviewed and selected from 59 submissions. They were organized in topical sections as follows: applications in image processing, computer vision, and pattern recognition; discrete and combinatorial topology; discrete geometry - models, transforms, visualization; discrete tomography and inverse problems; hierarchical and graph-based models, analysis and segmentation; learning-based approaches to mathematical morphology; multivariate and PDE-based mathematical morphology, morphological filtering. The book also contains 3 invited keynote papers.