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Collana	Lecture Notes in Computer Science, , 1611-3349 ; ; 13493
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Soggetti	Image processing - Digital techniques Computer vision Computer science Computer science - Mathematics Artificial intelligence Computer Imaging, Vision, Pattern Recognition and Graphics Theory of Computation Mathematics of Computing Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited papers -- Reflections on a Scientific Career and its Possible Legacy -- Hybrid Artificial Intelligence for Knowledge Representation and Model-based Medical Image Understanding - Towards Explainability -- Digital Geometry, Mathematical Morphology, and Discrete Optimization: a survey -- Discrete and combinatorial topology -- Gradient Vector Fields of Discrete Morse Functions and Watershed-cuts -- Towards topological analysis of non-symmetric tensor fields via complexification -- A Heuristic for Short Homology Basis of Digital Objects -- Completions and ramifications -- Algorithms for pixelwise shape deformations preserving digital convexity -- Full convexity for

polyhedral models in digital spaces -- Implicit Encoding and Simplification/Reduction of nGmaps -- Topological analysis of simple segmentation maps -- Discrete tomography and inverse problems -- On the Decomposability of Homogeneous Binary Planar Configurations with respect to a given Exact Polyomino -- Properties of SAT formulas characterizing convex sets with given projections -- Multivariate and PDE-based mathematical morphology, morphological filtering -- Morphological counterpart of Ornstein-Uhlenbeck semigroups and PDEs -- A novel approach for computation of morphological operations using the number theoretic transform -- Equivariance-Based Analysis of PDE Evolutions Related to Multivariate Medians -- Differential Oriented Image Foresting Transform Segmentation by Seed Competition -- Hierarchical and Graph-Based Models, Analysis and Segmentation -- A Topological Tree of Shapes -- Component-Tree Simplification through Fast Alpha Cuts -- Approximation of Digital Surfaces by a Hierarchical Set of Planar Patches -- Component Tree Loss Function: Definition and Optimization -- Fast and Effective Superpixel Segmentation using Accurate Saliency Estimation -- Join, select, and insert: efficient out-of-core algorithms for hierarchical segmentation trees -- Graph-Based Image Segmentation With Shape Priors and Band Constraints -- Discrete geometry - models, transforms, and visualization -- Tangential cover for 3D irregular noisy digital curves -- A Curious Invariance Property of Certain Perfect Legendre Arrays: Stirring Without Mixing -- A Simple Discrete Calculus for Digital Surfaces -- Distance-Driven Curve-Thinning on the Face-Centered Cubic Grid -- A new lattice-based plane-probing algorithm -- Exact and Optimal Conversion of a Hole-free 2D Digital Object into a Union of Balls in Polynomial Time -- Density functions of periodic sequences -- Learning based morphology to Mathematical Morphology -- Morphological adjunctions represented by matrices in max-plus algebra for signal and image processing -- MorphoActivations: Generalizing ReLU activations by mathematical morphology -- Logarithmic Morphological Neural Nets robust to lighting variations -- Distance transform -- Introduction to Discrete Soft Transforms -- On the Validity of the Two Raster Sequences Distance TransformAlgorithm.

Sommario/riassunto

This book constitutes the proceedings of the Second IAPR International Conference on Discrete Geometry and Mathematical Morphology, DGMM 2022, which was held during October 24-27, 2022, in Strasbourg, France. The 33 papers included in this volume were carefully reviewed and selected from 45 submissions. They were organized in topical sections as follows: discrete and combinatorial topology; discrete tomography and inverse problems; multivariate and PDE-based mathematical morphology, morphological filtering; hierarchical and Graph-Based Models, Analysis and Segmentation; discrete geometry - models, transforms, and visualization; learning based morphology to Mathematical Morphology; and distance transform. The book also contains 3 invited keynote papers.