

1. Record Nr.	UNISA996466362303316
Titolo	Combinatorial Image Analysis [[electronic resource] ] : 10th International Workshop, IWCIA 2004, Auckland, New Zealand, December 1-3, 2004, Proceedings / / edited by Reinhard Klette, Jovisa Zunic
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2005
ISBN	3-540-30503-3
Edizione	[1st ed. 2005.]
Descrizione fisica	1 online resource (XII, 760 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 3322
Disciplina	006.4
Soggetti	Pattern recognition Discrete mathematics Optical data processing Algorithms Numerical analysis Computer science—Mathematics Pattern Recognition Discrete Mathematics Image Processing and Computer Vision Algorithm Analysis and Problem Complexity Numeric Computing Discrete Mathematics in Computer Science
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 author index.
Nota di contenuto	Discrete Tomography -- Binary Matrices Under the Microscope: A Tomographical Problem -- On the Reconstruction of Crystals Through Discrete Tomography -- Binary Tomography by Iterating Linear Programs from Noisy Projections -- Combinatorics and Computational Models -- Hexagonal Pattern Languages -- A Combinatorial Transparent Surface Modeling from Polarization Images -- Integral Trees: Subtree Depth and Diameter -- Supercovers of Non-square and Non-cubic Grids -- Calculating Distance with Neighborhood Sequences

in the Hexagonal Grid -- On Correcting the Unevenness of Angle Distributions Arising from Integer Ratios Lying in Restricted Portions of the Farey Plane -- Combinatorial Algorithms -- Equivalence Between Regular  $n$ -G-Maps and  $n$ -Surfaces -- Z-Tilings of Polyominoes and Standard Basis -- Curve Tracking by Hypothesis Propagation and Voting-Based Verification -- 3D Topological Thinning by Identifying Non-simple Voxels -- Convex Hulls in a 3-Dimensional Space -- A Near-linear Time Algorithm for Binarization of Fingerprint Images Using Distance Transform -- Combinatorial Mathematics -- On Recognizable Infinite Array Languages -- On the Number of Digitizations of a Disc Depending on Its Position -- On the Language of Standard Discrete Planes and Surfaces -- Characterization of Bijective Discretized Rotations -- Digital Topology -- Magnification in Digital Topology -- Curves, Hypersurfaces, and Good Pairs of Adjacency Relations -- A Maximum Set of  $(26,6)$ -Connected Digital Surfaces -- Simple Points and Generic Axiomatized Digital Surface-Structures -- Minimal Non-simple Sets in 4-Dimensional Binary Images with  $(8,80)$ -Adjacency -- Jordan Surfaces in Discrete Antimatroid Topologies -- How to Find a Khalimsky-Continuous Approximation of a Real-Valued Function -- Digital Geometry -- Algorithms in Digital Geometry Based on Cellular Topology -- An Efficient Euclidean Distance Transform -- Two-Dimensional Discrete Morphing -- A Comparison of Property Estimators in Stereology and Digital Geometry -- Thinning by Curvature Flow -- Convex Functions on Discrete Sets -- Discrete Surfaces Segmentation into Discrete Planes -- Approximation of Digital Sets by Curves and Surfaces -- Sketch-Based Shape Retrieval Using Length and Curvature of 2D Digital Contours -- Surface Smoothing for Enhancement of 3D Data Using Curvature-Based Adaptive Regularization -- Minimum-Length Polygon of a Simple Cube-Curve in 3D Space -- Corner Detection and Curve Partitioning Using Arc-Chord Distance -- Shape Preserving Sampling and Reconstruction of Grayscale Images -- Algebraic Approaches -- Comparison of Nonparametric Transformations and Bit Vector Matching for Stereo Correlation -- Exact Optimization of Discrete Constrained Total Variation Minimization Problems -- Tensor Algebra: A Combinatorial Approach to the Projective Geometry of Figures -- Junction and Corner Detection Through the Extraction and Analysis of Line Segments -- Geometric Algebra for Pose Estimation and Surface Morphing in Human Motion Estimation -- Fuzzy Image Analysis -- A Study on Supervised Classification of Remote Sensing Satellite Image by Bayesian Algorithm Using Average Fuzzy Intracluster Distance -- Tree Species Recognition with Fuzzy Texture Parameters -- Image Segmentation -- Fast Segmentation of High-Resolution Satellite Images Using Watershed Transform Combined with an Efficient Region Merging Approach -- Joint Non-rigid Motion Estimation and Segmentation -- Sequential Probabilistic Grass Field Segmentation of Soccer Video Images -- Adaptive Local Binarization Method for Recognition of Vehicle License Plates -- Blur Identification and Image Restoration Based on Evolutionary Multiple Object Segmentation for Digital Auto-focusing -- Performance Evaluation of Binarizations of Scanned Insect Footprints -- Matching and Recognition -- 2D Shape Recognition Using Discrete Wavelet Descriptor Under Similitude Transform -- Which Stereo Matching Algorithm for Accurate 3D Face Creation ? -- Video Cataloging System for Real-Time Scene Change Detection of News Video -- Automatic Face Recognition by Support Vector Machines -- Practical Region-Based Matching for Stereo Vision -- Video Program Clustering Indexing Based on Face Recognition Hybrid Model of Hidden Markov Model and Support Vector Machine -- Texture Feature

Sommario/riassunto

This volume presents the proceedings of the 10th International Workshop on Combinatorial Image Analysis, held December 1–3, 2004, in Auckland, New Zealand. Prior meetings took place in Paris (France, 1991), Ube (Japan, 1992), Washington DC (USA, 1994), Lyon (France, 1995), Hiroshima (Japan, 1997), Madras (India, 1999), Caen (France, 2000), Philadelphia (USA, 2001), and - lermo (Italy, 2003). For this workshop we received 86 submitted papers from 23 countries. Each paper was evaluated by at least two independent referees. We selected 55 papers for the conference. Three invited lectures by Vladimir Kovalevsky (Berlin), Akira Nakamura (Hiroshima), and Maurice Nivat (Paris) completed the program. Conference papers are presented in this volume under the following topical part titles: discrete tomography (3 papers), combinatorics and computational models (6), combinatorial algorithms (6), combinatorial mathematics (4), d- ital topology (7), digital geometry (7), approximation of digital sets by curves and surfaces (5), algebraic approaches (5), fuzzy image analysis (2), image s- mentation (6), and matching and recognition (7). These subjects are dealt with in the context of digital image analysis or computer vision.

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