



Contents

Volume 2

Cataloging data

Preface

Author index

How to cite an article

Volume 1

Part I Lattice theory

Part II Geometry and topology

Part III Segmentation

Part IV Machine learning

Part V Algorithms and architectures

Part VI Applications

Part I Lattice theory

Mathematical morphology on bipolar fuzzy sets 3
Bloch, I.

Mathematical morphology for two valued gray-scale images with
undefined information 5
Cruz, M. M. C.; Doria Neto, A. D.; Santiago, R. H. N.

Associative memories based on fuzzy mathematical morphology and an
application in prediction 7
Valle, M. E.; Sussner, P.

Part II Geometry and topology

Topological monsters in Z^3 : A non-exhaustive bestiary 11
Passat, N.; Couprie, M.; Bertrand, G.

Shape parameters estimating the symmetry with respect to a point 13
Robert-Inacio, F.

Distance transform to seeds: Computation and application 15
Saúde, A. V.; Couprie, M.; Lotufo, R. A.

On a generative topology for the digital plane 17
Slapal, J.

Centres of maximal balls extracted from a fuzzy distance transform 19
Svensson, S.

Part III Segmentation

Gray-level hit-or-miss transform based region-growing for automatic
segmentation of 3D coronary arteries 23
Bouraoui, B.; Ronse, C.; Baruthio, J.; Passat, N.; Germain, P.

Robust 3D segmentation of composite materials fibres <i>Combarete, N.; Talbot, H.</i>	25
Automatic microarray gridding by mathematical morphology <i>Dantas, D. O.; Barrera, J.</i>	27
Watershed segmentation: Switching back and forth between markers and hierarchies <i>Klava, B.; Hirata, N. S. T.</i>	29
Contour segmentation of the transversal section of photonic fibers in SEM images using mathematical morphology <i>Mariano, A.; Castellano, G.</i>	31
Topologically-based segmentation of brain structures from T1 MRI <i>Miri, S.; Passat, N.; Armspach, J.</i>	33
J-image based color-texture segmentation using watershed and hierarchical clustering <i>Santos, T. T.; Morimoto, C. H.; Chellappa, R.</i>	35
Segmentation of 3D nano-scale polystyrene balls <i>Tankyevych, O.; Marak, L.; Talbot, H.; Dokladal, P.</i>	37
Part IV Machine learning	
Exploring window selection strategies for two-level binary image operator design <i>Santos, C. S.; Hirata Jr., R.</i>	41
An entropy minimization approach for designing W-operators <i>Vaquero, D. A.; Barrera, J.; Hirata Jr, R.</i>	43
Part V Algorithms and architectures	
Attribute sub-tree matching algorithm <i>Körbes, A.; Silva, A. G.; Lotufo, R. A.</i>	47
Efficient binary erosion algorithm based on a string-matching-like technique <i>Machado, A. F.; Hashimoto, R. F.; Lago, A. P.</i>	49
Some theoretical aspects and experimental results on feedforward morphological neural networks <i>Monteiro da Silva, A.; Sussner, P.</i>	51
SIMEA: An advanced framework for random media simulation <i>Nion, T.; Jeulin, D.; Fricout, G.</i>	53
A branch-and-bound optimization algorithm for U-shaped cost functions on Boolean lattices <i>Ris, M.; Barrera, J.</i>	55
A brief introduction to a two-layer morphological associative memory based on fuzzy operations <i>Sussner, P.; Esmi Laureano, E.</i>	57
Part VI Applications	

Rotation, scale and translation-invariant segmentation-free grayscale shape recognition using mathematical morphology <i>Araujo, S. A.; Kim, H. Y.</i>	61
Chromaticity constant: a new ordering for automated extraction of grain-size data from true colour images <i>Calixto, E. P.; Conci, A.</i>	63
Fingerprint minutiae extraction using topographic distances <i>Climent, J.</i>	65
Computing rotation centers of the heart from tagged MRI <i>Jacob, J.; Vachier, C.; Daire, J.; Hyacinthe, J.; Vallée, J.</i>	67
Fiducial markers detection in anthropometric images <i>Kogler Junior, J. E.; Camargo, P. F. F.; Junoir, T. W. T.; Coelho, E.</i>	69
A morphological gradient-based method to motion segmentation <i>Lara, A. C.; Hirata Jr., R.</i>	71
Granulometric and morphometric characterization of sand grains <i>Lira, C.; Pina, P.</i>	73
A JavaScript tool to present Mathematical Morphology to beginner <i>Nuñez, C. C.; Conci, A.</i>	75
Perceptual hashing for hardcopy document authentication using morphological segmentation <i>Shimizu, D. M.; Kim, H. Y.</i>	77
A structural PGN model for control of cell-cycle progression <i>Trepode, N. W.; Armelin, H. A.; Büttner, M.; Barrera, J.; Gubitoso, M. D.; Hashimoto, R. F.</i>	79
Classification of objects consisting of multiple segments with application to crater detection <i>Urbach, E. R.</i>	81