

Table of Contents

Color

- Spectro-Spatial Gradients for Color-Based Object Recognition and Indexing 1
D. Berwick, S. W. Lee

- MCEBC - A Blob Coloring Algorithm for Content-Based Image Retrieval System 9
S. J. Cho, S. I. Yoo

- EigenHistograms: Using Low Dimensional Models of Color Distribution for Real Time Object Recognition 17
J. Vitriá, P. Radeva, X. Binefa

Image Processing

- A Novel Approach to the 2D Analytic Signal 25
T. Bülow, G. Sommer

- Shift Detection by Restoration 33
H. Suesse, K. Voss, W. Ortmann, T. Baumbach

- Edge Preserving Probabilistic Smoothing Algorithm 41
B. Smolka, K. W. Wojciechowski

Image Databases

- Evaluating the Complexity of Databases for Person Identification and Verification 49
G. Thimm, S. Ben-Yacoub, J. Luettin

- Efficient Shape Retrieval by Parts 57
S. Berretti, A. Del Bimbo, P. Pala

- Curvature Scale Space for Shape Similarity Retrieval Under Affine Transforms 65
F. Mokhtarian, S. Abbasi

Image Compression and Watermarking

- FORI-CSDR - A New Approach for Context Sensitive Image Data Reduction 73
U. Strohbeck, U. Jäger, A. Macgregor

- Image Compression by Approximated 2D Karhunen Loeve Transform 81
W. Skarbek, A. Pietrowciew

A New Watermarking Method Using High Frequency Components to Guide the Insertion Process in the Spatial Domain	89
<i>I. Goirizelaia, J. Unzilla, E. Jacob, J. Andiano</i>	

Invited Lecture

Adventurous Tourism for Couch Potatoes	98
<i>L. Van Gool, T. Tuytelaars, M. Pollefeys</i>	

Poster Session I

Linear vs. Quadratic Optimization Algorithms for Bias Correction of Left Ventricle Chamber Boundaries in Low Contrast Projection	
Ventriculograms Produced from Xray Cardiac Catheterization Procedure .	108
<i>J. S. Suri, R. M. Haralick, F. H. Sheehan</i>	

Registration and Composition of Stacks of Serial Optical Slices Captured by a Confocal Microscope	118
<i>M. Čapek</i>	

Tracking Articulators in X-ray Movies of the Vocal Tract	126
<i>G. Thimm</i>	

Modeling Morphological Changes During Contraction of Muscle Fibres by Active Contours	134
<i>A. Klemenčič, F. Pernuš, S. Kovacič</i>	

Fuzzy Similarity Relations for Chromosome Classification and Identification	142
<i>M. E. Karsligil, M. Y. Karsligil</i>	

Enhanced Neural Networks and Medical Imaging.....	149
<i>L. F. Mingo, F. Arroyo, C. Luengo, J. Castellanos</i>	

Learning Behavior Using Multiresolution Recurrent Neural Network	157
<i>S. Morita</i>	

Automatic Classification System of Marble Slabs in Production Line According to Texture and Color Using Artificial Neural Networks	167
<i>J. Martínez-Cabeza-de-Vaca-Alajarín, L.-M. Tomás-Balibrea</i>	

Polygonal Approximation Using Genetic Algorithms	175
<i>P.-Y. Yin</i>	

Computation of Symmetry Measures for Polygonal Shapes	183
<i>S. Sheynin, A. Tuzikov, D. Volgin</i>	

An Interpolative Scheme for Fractal Image Compression in the Wavelet Domain	191
<i>M. Ghazel, E. R. Vrscay, A. K. Khandani</i>	

On Convergence of Discrete and Selective Fractal Operators 201
W. Skarbek

Optimized Fast Algorithms for the Quaternionic Fourier Transform 209
M. Felsberg, G. Sommer

Image Block Coding Based on New Algorithms of Shortlength DCT with Minimal Multiplicative Complexity 217
M. A. Chichyeva, V. M. Chernov

Object and Face Recognition

Object Recognition with Representations Based on Sparsified Gabor Wavelets Used as Local Line Detectors 225
N. Krüger

Effective Implementation of Linear Discriminant Analysis for Face Recognition and Verification 234
Y. Li, J. Kittler, J. Matas

A Scale-Space Approach to Face Recognition from Profiles 243
Z. Liposćak, S. Lončarić

Classification and Fitting

Pattern Recognition Combining De-noising and Linear Discriminant Analysis Within a Real World Application 251
V. Roth, V. Steinhage, S. Schröder, A. B. Cremers, D. Wittmann

Invariant Reference Points Methodology and Applications 259
K. Ignasiak, W. Skarbek, M. Ghuwar

A New Framework of Invariant Fitting 267
K. Voss, H. Suesse

3D Reconstruction and Shape Representation

3D Reconstruction of Volume Defects from Few X-Ray Images 275
C. Lehr, C.-E. Liedtke

Geodesic Path Based Interpolation Using Level Sets Propagation 285
B. Migeon, F. Boissé, P. Deforge, P. Marché

Free-Form Surface Description in Multiple Scales: Extension to Incomplete Surfaces 293
N. Khalili, F. Mokhtarian, P. Yuen

Motion

Complex Analysis for Reconstruction from Controlled Motion 301
R. A. Hicks, D. Pettey, K. Daniilidis, R. Bajcsy

Estimating Consistent Motion from Three Views: An Alternative to Trifocal Analysis	311
<i>S. Trautwein, M. Mühlisch, D. Feiden, R. Mester</i>	

Using Rigid Constraints to Analyse Motion Parameters from Two Sets of 3D Corresponding Point Pattern	321
<i>Y. Liu, M. A. Rodrigues</i>	

Range Image Registration

An Automatic Registration Algorithm for Two Overlapping Range Images	329
<i>G. Roth</i>	

On Registering Front- and Backviews of Rotationally Symmetric Objects .	339
<i>R. Sablatnig, M. Kampel</i>	

Registration of Range Images Based on Segmented Data	347
<i>B. Kverh, A. Leonardis</i>	

Applications

Automatic Grid Fitting for Genetic Spot Array Images Containing Guide Spots	357
<i>N. Brändle, H. Lapp, H. Bischof</i>	

Matching for Shape Defect Detection	367
<i>D. Chetverikov, Y. Khenokh</i>	

A Vision Driven Automatic Assembly Unit	375
<i>G. Bachler, M. Berger, R. Röhrer, S. Scherer, A. Pinz</i>	

Invited Lecture

Scene Reconstruction From Images	383
<i>V. Hlaváč</i>	

Poster Session II

NIIRS and Objective Image Quality Measures	385
<i>K. J. Hermiston, D. M. Booth</i>	

Pyramidal Seeded Region Growing Algorithm and its Use in Image Segmentation	395
<i>Z. Tomori, J. Marcin, P. Vilim</i>	

Multi-image Region Growing for Integrating Disparity Maps	403
<i>U. M. Leloglu, U. Halici</i>	

Contrast Enhancement of Gray Scale Images Based on the Random Walk Model	411
<i>B. Smolka, K. W. Wojciechowski</i>	

Skeletonization on Projection Pictures	419
<i>A. Fazekas</i>	
Computing the Intrinsic Camera Parameters Using Pascal's Theorem	427
<i>B. Rosenhahn, E. Bayro-Corrochano</i>	
Calibration Update Technique for a Zoom Lens	435
<i>M. Kolesnik</i>	
Which Slightly Different View is the Right One?	444
<i>J. Maver</i>	
Convex Layers: A New Tool for Recognition of Projectively Deformed Point Sets	454
<i>T. Suk, J. Flusser</i>	
Measurement of Ski-Jump Distances by the Use of Fuzzy Pattern Comparator	462
<i>V. Guštin, A. Lapajne, R. Kodrič, T. Žitko</i>	
2D Motion Analysis by Fuzzy Pattern Comparator	472
<i>M. Bonković, D. Stipaničev, M. Štula</i>	
Image Retrieval System Based on Machine Learning and Using Color Features	480
<i>J. Demšar, D. Radolović, F. Solina</i>	
Face Parts Extraction Windows Based on Bilateral Symmetry of Gradient Direction	489
<i>S. Katahara, M. Aoki</i>	
Shape from Shading, Texture and Stereo	
Modelling Needle-Map Consistency With Novel Constraints	498
<i>P. L. Worthington, E. R. Hancock</i>	
Improved Orientation Estimation for Texture Planes Using Multiple Vanishing Points	508
<i>E. Ribeiro, E. R. Hancock</i>	
Relating Scene Depth to Image Ratios	516
<i>J. Arnspang, K. Henriksen, F. Bergholm</i>	
Real-Time Tracking	
A Modular Vision Guided System for Tracking 3D Objects in Real-Time . .	526
<i>M. Vincze, M. Ayromlou, W. Kubinger</i>	
Real-Time Optical Edge and Corner Tracking at Subpixel Accuracy	534
<i>S. Brantner, T. Auer, A. Pinz</i>	

Panoramic Images

Three-Dimensional Scene Navigation Through Anaglyphic Panorama Visualization	542
<i>S. K. Wei, Y. F. Huang, R. Klette</i>	
Zero Phase Representation of Panoramic Images for Image Based Localization	550
<i>T. Pajdla, V. Hlaváč</i>	
Panoramic Eigenimages for Spatial Localisation	558
<i>M. Jogan, A. Leonardis</i>	

Grouping

Feature Grouping Based on Graphs and Neural Networks	568
<i>H. Jahn</i>	
Frame-Relative Critical Point Sets in Image Analysis	578
<i>S. N. Kalitzin, J. Staal, B. M. ter Haar Romeny, M. A. Viergever</i>	
A Fast Traffic Sign Recognition Algorithm for Gray Value Images	588
<i>C. Schiekel</i>	

Image Rendering

A Geometric Approach to Lightfield Calibration	596
<i>R. Koch, B. Heigl, M. Pollefeys, L. Van Gool, H. Niemann</i>	
Coding of Dynamic Texture on 3D Scenes	604
<i>B. DeKnuydt, S. Desmet, L. Van Eycken, L. Van Gool</i>	
Image Stitching – Comparisons and New Techniques	615
<i>C.-Y. Chen, R. Klette</i>	

Alignment and Matching

Procrustes Alignment with the EM Algorithm	623
<i>B. Luo, E. R. Hancock</i>	
Structural Constraints for Pose Clustering	632
<i>S. Moss, E. R. Hancock</i>	
Subpixel Stereo Matching by Robust Estimation of Local Distortion Using Gabor Filters	641
<i>P. Werth, S. Scherer, A. Pinz</i>	

Author Index	649
-------------------------------	-----



<http://www.springer.com/978-3-540-66366-9>

Computer Analysis of Images and Patterns
8th International Conference, CAIP'99 Ljubljana,
Slovenia, September 1-3, 1999 Proceedings
Solina, F.; Leonardis, A. (Eds.)
1999, XIV, 654 p., Softcover
ISBN: 978-3-540-66366-9