

Contents

Scale Space and Partial Differential Equations Methods

Scale-Space Theory for Auditory Signals.	3
<i>Tony Lindeberg and Anders Friberg</i>	
Spectral Representations of One-Homogeneous Functionals.	16
<i>Martin Burger, Lina Eckardt, Guy Gilboa, and Michael Moeller</i>	
The Morphological Equivalents of Relativistic and Alpha-Scale-Spaces	28
<i>Martin Schmidt and Joachim Weickert</i>	
New Approximation of a Scale Space Kernel on SE(3) and Applications in Neuroimaging.	40
<i>Jorg Portegies, Gonzalo Sanguinetti, Stephan Meesters, and Remco Duits</i>	
Partial Differential Equations of Bivariate Median Filters	53
<i>Martin Welk</i>	
Fundamentals of Non-Local Total Variation Spectral Theory.	66
<i>Jean-François Aujol, Guy Gilboa, and Nicolas Papadakis</i>	
Morphological Scale-Space Operators for Images Supported on Point Clouds	78
<i>Jesús Angulo</i>	
Separable Time-Causal and Time-Recursive Spatio-Temporal Receptive Fields	90
<i>Tony Lindeberg</i>	
A Linear Scale-Space Theory for Continuous Nonlocal Evolutions.	103
<i>Giovanno Marcelo Cárdenas, Joachim Weickert, and Sarah Schäffer</i>	

Denoising, Restoration and Reconstruction

Bilevel Image Denoising Using Gaussianity Tests	117
<i>Jérôme Fehrenbach, Mila Nikolova, Gabriele Steidl, and Pierre Weiss</i>	
On Debiasing Restoration Algorithms: Applications to Total-Variation and Nonlocal-Means	129
<i>Charles-Alban Deledalle, Nicolas Papadakis, and Joseph Salmon</i>	
Cartoon-Texture-Noise Decomposition with Transport Norms	142
<i>Christoph Brauer and Dirk Lorenz</i>	

Compressing Images with Diffusion- and Exemplar-Based Inpainting	154
<i>Pascal Peter and Joachim Weickert</i>	
Some Nonlocal Filters Formulation Using Functional Rearrangements	166
<i>Gonzalo Galiano and Julián Velasco</i>	
Total Variation Restoration of Images Corrupted by Poisson Noise with Iterated Conditional Expectations	178
<i>Rémy Abergel, Cécile Louchet, Lionel Moisan, and Tieyong Zeng</i>	
Regularization with Sparse Vector Fields: From Image Compression to TV-type Reconstruction	191
<i>Eva-Maria Brinkmann, Martin Burger, and Joana Grah</i>	
Solution-Driven Adaptive Total Variation Regularization	203
<i>Frank Lenzen and Johannes Berger</i>	
Artifact-Free Variational MPEG Decompression	216
<i>Kristian Bredies and Martin Holler</i>	
Segmentation and Partitioning	
Probabilistic Correlation Clustering and Image Partitioning Using Perturbed Multicuts	231
<i>Jörg Hendrik Kappes, Paul Swoboda, Bogdan Savchynskyy, Tamir Hazan, and Christoph Schnörr</i>	
Optimizing the Relevance-Redundancy Tradeoff for Efficient Semantic Segmentation	243
<i>Caner Hazırbaş, Julia Diebold, and Daniel Cremers</i>	
Convex Color Image Segmentation with Optimal Transport Distances	256
<i>Julien Rabin and Nicolas Papadakis</i>	
Piecewise Geodesics for Vessel Centerline Extraction and Boundary Delineation with Application to Retina Segmentation	270
<i>Da Chen and Laurent D. Cohen</i>	
Unsupervised Learning Using the Tensor Voting Graph	282
<i>Shay Deutsch and Gérard Medioni</i>	
Interactive Multi-label Segmentation of RGB-D Images	294
<i>Julia Diebold, Nikolaus Demmel, Caner Hazırbaş, Michael Moeller, and Daniel Cremers</i>	
Fast Minimization of Region-Based Active Contours Using the Shape Hessian of the Energy	307
<i>Günay Doğan</i>	

Flow, Motion and Registration

Sparse Aggregation Framework for Optical Flow Estimation	323
<i>Denis Fortun, Patrick Bouthemy, and Charles Kervrann</i>	
An Image Registration Framework for Sliding Motion with Piecewise Smooth Deformations	335
<i>Stefan Heldmann, Thomas Polzin, Alexander Derksen, and Benjamin Berkels</i>	
Nonlocal Joint Segmentation Registration Model	348
<i>Solène Ozeré and Carole Le Guyader</i>	
Deformable Image Registration with Automatic Non-Correspondence Detection	360
<i>Kanglin Chen, Alexander Derksen, Stefan Heldmann, Marc Hallmann, and Benjamin Berkels</i>	
Bézier Curves in the Space of Images	372
<i>Alexander Effland, Martin Rumpf, Stefan Simon, Kirsten Stahn, and Benedikt Wirth</i>	
Computation and Visualization of Local Deformation for Multiphase Metallic Materials by Infimal Convolution of TV-type Functionals	385
<i>Frank Balle, Dietmar Eifler, Jan Henrik Fitschen, Sebastian Schuff, and Gabriele Steidl</i>	
Second Order Minimum Energy Filtering on SE_3 with Nonlinear Measurement Equations.	397
<i>Johannes Berger, Andreas Neufeld, Florian Becker, Frank Lenzen, and Christoph Schnörr</i>	

Photography, Texture and Color Processing

Luminance-Hue Specification in the RGB Space	413
<i>Fabien Pierre, Jean-François Aujol, Aurélie Bugeau, and Vinh-Thong Ta</i>	
Variational Exposure Fusion with Optimal Local Contrast.	425
<i>David Hafner and Joachim Weickert</i>	
A Variational Model for Color Assignment	437
<i>Jan Henrik Fitschen, Mila Nikolova, Fabien Pierre, and Gabriele Steidl</i>	
Duality Principle for Image Regularization and Perceptual Color Correction Models	449
<i>Thomas Batard and Marcelo Bertalmío</i>	

PDE-Based Color Morphology Using Matrix Fields	461
<i>Ali Sharifi Boroujerdi, Michael Breuß, Bernhard Burgeth, and Andreas Kleefeld</i>	
Conditional Gaussian Models for Texture Synthesis	474
<i>Lara Raad, Agnès Desolneux, and Jean-Michel Morel</i>	
Multiscale Texture Orientation Analysis Using Spectral Total-Variation Decomposition	486
<i>Dikla Horeish and Guy Gilboa</i>	
A L^1 -TV Algorithm for Robust Perspective Photometric Stereo with Spatially-Varying Lightings	498
<i>Yvain Quéau, François Lauze, and Jean-Denis Durou</i>	
Shape, Surface and 3D problems	
Discrete Varifolds: A Unified Framework for Discrete Approximations of Surfaces and Mean Curvature.	513
<i>B. Buet, G.P. Leonardi, and S. Masnou</i>	
Robust Poisson Surface Reconstruction	525
<i>Virginia Estellers, Michael Scott, Kevin Tew, and Stefano Soatto</i>	
Variational Perspective Shape from Shading	538
<i>Yong Chul Ju, Andrés Bruhn, and Michael Breuß</i>	
Multiview Depth Parameterisation with Second Order Regularisation	551
<i>Christopher Schroers, David Hafner, and Joachim Weickert</i>	
Invertible Orientation Scores of 3D Images	563
<i>Michiel Janssen, Remco Duits, and Marcel Breeuwer</i>	
Edge-Preserving Integration of a Normal Field: Weighted Least-Squares, TV and L^1 Approaches	576
<i>Yvain Quéau and Jean-Denis Durou</i>	
Reconstruction of Surfaces from Point Clouds Using a Lagrangian Surface Evolution Model.	589
<i>Patrik Daniel, Matej Medl'a, Karol Mikula, and Mariana Remešíková</i>	
Solving Minimal Surface Problems on Surfaces and Point Clouds	601
<i>Daniel Tenbrinck, François Lozes, and Abderrahim Elmoataz</i>	
Data-driven Sub-Riemannian Geodesics in $SE(2)$	613
<i>E.J. Bekkers, R. Duits, A. Mashtakov, and G.R. Sanguinetti</i>	

Optimization Theory and Methods in Imaging

A Sparse Algorithm for Dense Optimal Transport	629
<i>Bernhard Schmitzer</i>	
Activity Identification and Local Linear Convergence of Douglas–Rachford/ADMM under Partial Smoothness	642
<i>Jingwei Liang, Jalal Fadili, Gabriel Peyré, and Russell Luke</i>	
Bilevel Optimization with Nonsmooth Lower Level Problems	654
<i>Peter Ochs, René Ranftl, Thomas Brox, and Thomas Pock</i>	
Convex Image Denoising via Non-Convex Regularization	666
<i>Alessandro Lanza, Serena Morigi, and Fiorella Sgallari</i>	
Infinite Dimensional Optimization Models and PDEs for Dejittering.	678
<i>Guozhi Dong, Aniello Raffaele Patrone, Otmar Scherzer, and Ozan Öktem</i>	
Alternating Direction Method of Multiplier for Euler’s Elastica-Based Denoising	690
<i>Maryam Yashtini and Sung Ha Kang</i>	
Asymptotic Behaviour of Total Generalised Variation.	702
<i>Konstantinos Papafitsoros and Tuomo Valkonen</i>	
Author Index	715

Scale Space and Variational Methods in Computer
Vision

5th International Conference, SSVM 2015, Lège-Cap
Ferret, France, May 31 - June 4, 2015, Proceedings
Aujol, J.-F.; Nikolova, M.; Papadakis, N. (Eds.)
2015, XV, 716 p. 235 illus., Softcover
ISBN: 978-3-319-18460-9