

Table of Contents

Shape, Geometry and Registration

Conditional Point Distribution Models	1
<i>Kersten Petersen, Mads Nielsen, and Sami S. Brandt</i>	
Deformable Registration of Organic Shapes via Surface Intrinsic Integrals: Application to Outer Ear Surfaces	11
<i>Sajjad Baloch, Alexander Zouhar, and Tong Fang</i>	
Iterative Training of Discriminative Models for the Generalized Hough Transform	21
<i>Heike Ruppertshofen, Cristian Lorenz, Sarah Schmidt, Peter Beyerlein, Zein Salah, Georg Rose, and Hauke Schramm</i>	
Topology Noise Removal for Curve and Surface Evolution	31
<i>Chao Chen and Daniel Freedman</i>	
Exploring Cortical Folding Pattern Variability Using Local Image Features	43
<i>Rishi Rajalingham, Matthew Toews, D. Louis Collins, and Tal Arbel</i>	

Markov Models for Image Reconstruction and Analysis

Surgical Phases Detection from Microscope Videos by Combining SVM and HMM	54
<i>Florent Lalys, Laurent Riffaud, Xavier Morandi, and Pierre Jannin</i>	
Motion Artifact Reduction in 4D Helical CT: Graph-Based Structure Alignment	63
<i>Dongfeng Han, John Bayouth, Sudershan Bhatia, Milan Sonka, and Xiaodong Wu</i>	
Comparative Validation of Graphical Models for Learning Tumor Segmentations from Noisy Manual Annotations	74
<i>Frederik O. Kaster, Bjoern H. Menze, Marc-André Weber, and Fred A. Hamprecht</i>	

Automatic Anatomy Localization via Classification

Localization of 3D Anatomical Structures Using Random Forests and Discrete Optimization	86
<i>René Donner, Erich Birngruber, Helmut Steiner, Horst Bischof, and Georg Langs</i>	
Detection of 3D Spinal Geometry Using Iterated Marginal Space Learning	96
<i>B. Michael Kelm, S. Kevin Zhou, Michael Suehling, Yefeng Zheng, Michael Wels, and Dorin Comaniciu</i>	
Regression Forests for Efficient Anatomy Detection and Localization in CT Studies	106
<i>Antonio Criminisi, Jamie Shotton, Duncan Robertson, and Ender Konukoglu</i>	
Correcting Misalignment of Automatic 3D Detection by Classification: Ileo-Cecal Valve False Positive Reduction in CT Colonography	118
<i>Le Lu, Matthias Wolf, Jinbo Bi, and Marcos Salganicoff</i>	
Learning Adaptive and Sparse Representations of Medical Images	130
<i>Alessandra Staglianò, Gabriele Chiusano, Curzio Basso, and Matteo Santoro</i>	
Feature Selection for SVM-Based Vascular Anomaly Detection	141
<i>Maria A. Zuluaga, Edgar J.F. Delgado Leyton, Marcela Hernández Hoyos, and Maciej Orkisz</i>	

Texture Analysis

Multiple Classifier Systems in Texton-Based Approach for the Classification of CT Images of Lung	153
<i>Mehrdad J. Gangeh, Lauge Sørensen, Saher B. Shaker, Mohamed S. Kamel, and Marleen de Bruijne</i>	
Imaging as a Surrogate for the Early Prediction and Assessment of Treatment Response through the Analysis of 4-D Texture Ensembles (ISEPARATE)	164
<i>Peter Maday, Parmeshwar Khurd, Lance Ladic, Mitchell Schnall, Mark Rosen, Christos Davatzikos, and Ali Kamen</i>	
A Texture Manifold for Curve-Based Morphometry of the Cerebral Cortex	174
<i>Marime Boucher, Alan Evans, and Kaleem Siddiqi</i>	

Semisupervised Probabilistic Clustering of Brain MR Images Including Prior Clinical Information	184
<i>Annemie Ribbens, Frederik Maes, Dirk Vandermeulen, and Paul Suetens</i>	

Segmentation

Simultaneous Multi-object Segmentation Using Local Robust Statistics and Contour Interaction	195
<i>Yi Gao, Allen Tannenbaum, and Ron Kikinis</i>	
Spotlight: Automated Confidence-Based User Guidance for Increasing Efficiency in Interactive 3D Image Segmentation	204
<i>Andrew Top, Ghassan Hamarneh, and Rafeef Abugharbieh</i>	
Automated Segmentation of 3D CT Images Based on Statistical Atlas and Graph Cuts	214
<i>Akinobu Shimizu, Keita Nakagomi, Takuya Narihira, Hidefumi Kobatake, Shigeru Nawano, Kenji Shinozaki, Koich Ishizu, and Kaori Togashi</i>	
Author Index	225