

# Contents

Automatic Segmentation of Hippocampus for Longitudinal Infant Brain MR Image Sequence by Spatial-Temporal Hypergraph Learning . . . . .	1
<i>Yanrong Guo, Pei Dong, Shijie Hao, Li Wang, Guorong Wu, and Dinggang Shen</i>	
Construction of Neonatal Diffusion Atlases via Spatio-Angular Consistency . . .	9
<i>Behrouz Saghaei, Geng Chen, Feng Shi, Pew-Thian Yap, and Dinggang Shen</i>	
Selective Labeling: Identifying Representative Sub-volumes for Interactive Segmentation . . . . .	17
<i>Imanol Luengo, Mark Basham, and Andrew P. French</i>	
Robust and Accurate Appearance Models Based on Joint Dictionary Learning: Data from the Osteoarthritis Initiative . . . . .	25
<i>Anirban Mukhopadhyay, Oscar Salvador Morillo Victoria, Stefan Zachow, and Hans Lamecker</i>	
Consistent Multi-Atlas Hippocampus Segmentation for Longitudinal MR Brain Images with Temporal Sparse Representation . . . . .	34
<i>Lin Wang, Yanrong Guo, Xiaohuan Cao, Guorong Wu, and Dinggang Shen</i>	
Sparse-Based Morphometry: Principle and Application to Alzheimer's Disease . . . . .	43
<i>Pierrick Coupé, Charles-Alban Deledalle, Charles Dossal, Michèle Allard, and Alzheimer's Disease Neuroimaging Initiative</i>	
Multi-Atlas Based Segmentation of Brainstem Nuclei from MR Images by Deep Hyper-Graph Learning . . . . .	51
<i>Pei Dong, Yanrong Guo, Yue Gao, Peipeng Liang, Yonghong Shi, Qian Wang, Dinggang Shen, and Guorong Wu</i>	
Patch-Based Discrete Registration of Clinical Brain Images . . . . .	60
<i>Adrian V. Dalca, Andreea Bobu, Natalia S. Rost, and Polina Golland</i>	
Non-local MRI Library-Based Super-Resolution: Application to Hippocampus Subfield Segmentation . . . . .	68
<i>Jose E. Romero, Pierrick Coupé, and Jose V. Manjón</i>	

Patch-Based DTI Grading: Application to Alzheimer’s Disease Classification . . . . .	76
<i>Kilian Hett, Vinh-Thong Ta, Rémi Giraud, Mary Mondino, José V. Manjón, Pierrick Coupé, and Alzheimer’s Disease Neuroimaging Initiative</i>	
Hierarchical Multi-Atlas Segmentation Using Label-Specific Embeddings, Target-Specific Templates and Patch Refinement . . . . .	84
<i>Christoph Arthofer, Paul S. Morgan, and Alain Pitiot</i>	
HIST: HyperIntensity Segmentation Tool . . . . .	92
<i>Jose V. Manjón, Pierrick Coupé, Parnesh Raniga, Ying Xia, Jurgen Fripp, and Olivier Salvado</i>	
Supervoxel-Based Hierarchical Markov Random Field Framework for Multi-atlas Segmentation. . . . .	100
<i>Ning Yu, Hongzhi Wang, and Paul A. Yushkevich</i>	
CapAIBL: Automated Reporting of Cortical PET Quantification Without Need of MRI on Brain Surface Using a Patch-Based Method. . . . .	109
<i>Vincent Dore, Pierrick Bourgeat, Victor L. Villemagne, Jurgen Fripp, Lance Macaulay, Colin L. Masters, David Ames, Christopher C. Rowe, Olivier Salvado, and The AIBL Research Group</i>	
High Resolution Hippocampus Subfield Segmentation Using Multispectral Multiatlas Patch-Based Label Fusion . . . . .	117
<i>José E. Romero, Pierrick Coupe, and José V. Manjón</i>	
Identification of Water and Fat Images in Dixon MRI Using Aggregated Patch-Based Convolutional Neural Networks . . . . .	125
<i>Liang Zhao, Yiqiang Zhan, Dominik Nickel, Matthias Fenchel, Berthold Kiefer, and Xiang Sean Zhou</i>	
Estimating Lung Respiratory Motion Using Combined Global and Local Statistical Models. . . . .	133
<i>Zhong Xue, Ramiro Pino, and Bin Teh</i>	
<b>Author Index . . . . .</b>	<b>141</b>

<http://www.springer.com/978-3-319-47117-4>

Patch-Based Techniques in Medical Imaging

Second International Workshop, Patch-MI 2016, Held in  
Conjunction with MICCAI 2016, Athens, Greece, October  
17, 2016, Proceedings

Wu, G.; Coupé, P.; Zhan, Y.; Munsell, B.c.; Rueckert, D.  
(Eds.)

2016, X, 141 p. 45 illus., Softcover

ISBN: 978-3-319-47117-4