

Contents

International Workshop on Fetal and Infant Image Analysis, FIFI 2017

Template-Free Estimation of Intracranial Volume: A Preterm Birth Animal Model Study	3
<i>Juan Eugenio Iglesias, Sebastiano Ferraris, Marc Modat, Willy Gsell, Jan Deprest, Johannes L. van der Merwe, and Tom Vercauteren</i>	
Assessing Reorganisation of Functional Connectivity in the Infant Brain	14
<i>Roxane Licandro, Karl-Heinz Nennung, Ernst Schwartz, Kathrin Kollndorfer, Lisa Bartha-Doering, Hesheng Liu, and Georg Langs</i>	
Fetal Skull Segmentation in 3D Ultrasound via Structured Geodesic Random Forest	25
<i>Juan J. Cerrolaza, Ozan Oktay, Alberto Gomez, Jacqueline Matthew, Caroline Knight, Bernhard Kainz, and Daniel Rueckert</i>	
Fast Registration of 3D Fetal Ultrasound Images Using Learned Corresponding Salient Points	33
<i>Alberto Gomez, Kanwal Bhatia, Sarjana Tharin, James Housden, Nicolas Toussaint, and Julia A. Schnabel</i>	
Automatic Segmentation of the Intracranial Volume in Fetal MR Images	42
<i>N. Khalili, P. Moeskops, N.H.P. Claessens, S. Scherpenzeel, E. Turk, R. de Heus, M.J.N.L. Benders, M.A. Viergever, J.P.W. Pluim, and I. Išgum</i>	
Abdomen Segmentation in 3D Fetal Ultrasound Using CNN-powered Deformable Models	52
<i>Alexander Schmidt-Richberg, Tom Brosch, Nicole Schadewaldt, Tobias Klinder, Angelo Cavallaro, Ibtisam Salim, David Roundhill, Aris Papageorghiou, and Cristian Lorenz</i>	
Multi-organ Detection in 3D Fetal Ultrasound with Machine Learning.	62
<i>Caroline Raynaud, Cybèle Ciofolo-Veit, Thierry Lefèvre, Roberto Ardon, Angelo Cavallaro, Ibtisam Salim, Aris Papageorghiou, and Laurence Rouet</i>	
Robust Regression of Brain Maturation from 3D Fetal Neurosonography Using CRNs.	73
<i>Ana I.L. Namburete, Weidi Xie, and J. Alison Noble</i>	

4th International Workshop on Ophthalmic Medical Image Analysis, OMIA 2017

Segmentation of Retinal Blood Vessels Using Dictionary Learning Techniques	83
<i>Taibou Birgui Sekou, Moncef Hidane, Julien Olivier, and Hubert Cardot</i>	
Detecting Early Choroidal Changes Using Piecewise Rigid Image Registration and Eye-Shape Adherent Regularization	92
<i>Tiziano Ronchetti, Peter Maloca, Christoph Jud, Christoph Meier, Selim Orgül, Hendrik P.N. Scholl, Boris Považay, and Philippe C. Cattin</i>	
Patch-Based Deep Convolutional Neural Network for Corneal Ulcer Area Segmentation	101
<i>Qichao Sun, Lijie Deng, Jianwei Liu, Haixiang Huang, Jin Yuan, and Xiaoying Tang</i>	
Model-Driven 3-D Regularisation for Robust Segmentation of the Refractive Corneal Surfaces in Spiral OCT Scans	109
<i>Joerg Wagner, Simon Pezold, and Philippe C. Cattin</i>	
Automatic Retinal Layer Segmentation Based on Live Wire for Central Serous Retinopathy	118
<i>Dehui Xiang, Geng Chen, Fei Shi, Weifang Zhu, and Xinjian Chen</i>	
Retinal Image Quality Classification Using Fine-Tuned CNN	126
<i>Jing Sun, Cheng Wan, Jun Cheng, Fengli Yu, and Jiang Liu</i>	
Optic Disc Detection via Deep Learning in Fundus Images	134
<i>Peiyuan Xu, Cheng Wan, Jun Cheng, Di Niu, and Jiang Liu</i>	
3D Choroid Neovascularization Growth Prediction with Combined Hyperelastic Biomechanical Model and Reaction-Diffusion Model	142
<i>Chang Zuo, Fei Shi, Weifang Zhu, Haoyu Chen, and Xinjian Chen</i>	
Retinal Biomarker Discovery for Dementia in an Elderly Diabetic Population	150
<i>Ahmed E. Fetit, Siyamalan Manivannan, Sarah McGrory, Lucia Ballerini, Alexander Doney, Thomas J. MacGillivray, Ian J. Deary, Joanna M. Wardlaw, Fergus Doubal, Gareth J. McKay, Stephen J. McKenna, and Emanuele Trucco</i>	
Non-rigid Registration of Retinal OCT Images Using Conditional Correlation Ratio.	159
<i>Xueying Du, Lun Gong, Fei Shi, Xinjian Chen, Xiaodong Yang, and Jian Zheng</i>	

Joint Optic Disc and Cup Segmentation Using Fully Convolutional and Adversarial Networks 168
Sharath M. Shankaranarayana, Keerthi Ram, Kaushik Mitra, and Mohanasankar Sivaprakasam

Automated Segmentation of the Choroid in EDI-OCT Images with Retinal Pathology Using Convolution Neural Networks 177
Min Chen, Jiancong Wang, Ipek Oguz, Brian L. VanderBeek, and James C. Gee

Spatiotemporal Analysis of Structural Changes of the Lamina Cribrosa 185
Charly Girot, Hiroshi Ishikawa, James Fishbaugh, Gadi Wollstein, Joel Schuman, and Guido Gerig

Fast Blur Detection and Parametric Deconvolution of Retinal Fundus Images 194
Bryan M. Williams, Baidaa Al-Bander, Harry Pratt, Samuel Lawman, Yitian Zhao, Yalin Zheng, and Yaochun Shen

Towards Topological Correct Segmentation of Macular OCT from Cascaded FCNs. 202
Yufan He, Aaron Carass, Yeyi Yun, Can Zhao, Bruno M. Jedynek, Sharon D. Solomon, Shiv Saidha, Peter A. Calabresi, and Jerry L. Prince

Boosted Exudate Segmentation in Retinal Images Using Residual Nets 210
Samaneh Abbasi-Sureshjani, Behdad Dashtbozorg, Bart M. ter Haar Romeny, and François Fleuret

Development of Clinically Based Corneal Nerves Tortuosity Indexes. 219
Fabio Scarpa and Alfredo Ruggeri

A Comparative Study Towards the Establishment of an Automatic Retinal Vessel Width Measurement Technique 227
Fan Huang, Behdad Dashtbozorg, Alexander Ka Shing Yeung, Jiong Zhang, Tos T.J.M. Berendschot, and Bart M. ter Haar Romeny

Automatic Detection of Folds and Wrinkles Due to Swelling of the Optic Disc 235
Jason Agne, Jui-Kai Wang, Randy H. Kardon, and Mona K. Garvin

Representation Learning for Retinal Vasculature Embeddings 243
Luca Giancardo, Kirk Roberts, and Zhongming Zhao

Author Index 251

Fetal, Infant and Ophthalmic Medical Image Analysis
International Workshop, FIFI 2017, and 4th
International Workshop, OMIA 2017, Held in Conjunction
with MICCAI 2017, Québec City, QC, Canada, September
14, Proceedings

Cardoso, J.; Arbel, T.; Melbourne, A.; Bogunovic, H.;
Moeskops, P.; Chen, X.; Schwartz, E.; Garvin, M.K.;
Robinson, E.; Trucco, E.; Ebner, M.; Xu, Y.; Makropoulos,
A.; Desjardin, A.; Vercauteren, T. (Eds.)
2017, XIII, 252 p. 109 illus., Softcover
ISBN: 978-3-319-67560-2