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Medical Image Computing and Computer-Assisted Intervention – MICCAI 2012

15th International Conference
Nice, France, October 1-5, 2012
Proceedings, Part III

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Preface

The 15th International Conference on Medical Image Computing and Computer Assisted Intervention, MICCAI 2012, was held in Nice, France, at the Acropolis Convention Center during October 1–5, 2012.

Over the past 14 years, the MICCAI conferences have become a premier international event with full articles of high standard, indexed by Pubmed, and annually attracting leading scientists, engineers and clinicians working at the intersection of sciences, technologies and medicine.

It is interesting to recall that the MICCAI conference series was formed in 1998 by the merger of CVRMed (Computer Vision, Virtual Reality and Robotics in Medicine), MRCAS (Medical Robotics and Computer Assisted Surgery) and VBC (Visualization in Biomedical Computing) conferences, and that the first CVRMed conference was held in Nice in April 1995. At that time the CVRMed conference was a single event and the proceedings, also published in Lecture Notes in Computer Science (LNCS), consisted of a single volume of 570 pages. In 2012 the MICCAI proceedings span three volumes and more than 2000 pages, and the conference was complemented by 32 MICCAI satellite events (workshops, challenges, tutorials) publishing their own proceedings, several of them in LNCS.

MICCAI contributions were selected through a rigorous reviewing process involving an international Program Committee (PC) of 100 specialists coordinated by a Program Chair and 2 Program Co-chairs from 3 continents. Decisions were based on anonymous reviews made by 913 expert reviewers. The process was double blind as authors did not know the names of the PC members/reviewers evaluating their papers, and the PC members/reviewers did not know the names of the authors of the papers they were evaluating.

We received 781 submissions and after the collection of over 3000 anonymous review forms, the final selection was prepared during a 2-day meeting in Nice (12–13 May 2012) attended by 50 PC members. They finalized the acceptance of 252 papers (i.e., acceptance rate of 32%) and also prepared a short list of candidate papers for plenary presentations. The accepted contributions came from 21 countries and 5 continents: about 50% from North America (40% USA and 8% Canada), 40% from Europe (mainly from France, Germany, the UK, Switzerland and The Netherlands), and 10% from Asia and the rest of the world.

All accepted papers were presented during 6 poster sessions of 90 minutes with the option, this year for the first time, of displaying additional dynamic material on large screens during the whole poster session. In addition, a subset of 37 carefully selected papers (mainly chosen among the short list of candidate papers recommended by PC members) were presented during 7 single-track plenary oral sessions.

Prof. Alain Carpentier, President of the French Academy of Sciences, was the Honored Guest of MICCAI 2012 for his pioneering and visionary role in several of the domains covered by MICCAI. Prof. Carpentier addressed the audience during the opening ceremony along with Prof. Michel Cosnard, the CEO of Inria, and introduced one of the keynote lectures.

Prof. Jacques Marescaux, director of the Strasbourg IHU (Institut Hospitalo-Universitaire) delivered the keynote lecture “Surgery for Life Innovation: Information Age and Robotics” and Prof. Michel Haïssaguerre, director of the Bordeaux IHU, delivered the keynote lecture “Preventing Sudden Cardiac Death: Role of Structural and Functional Imaging”. Both of these lectures were outstanding and inspiring.

The conference would not have been possible without the commitment and hard work of many people whom we want to thank wholeheartedly:

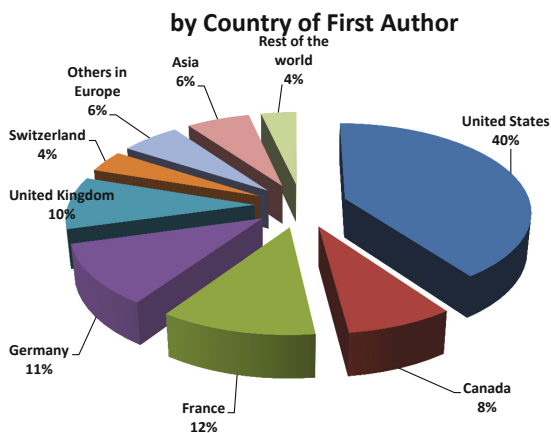
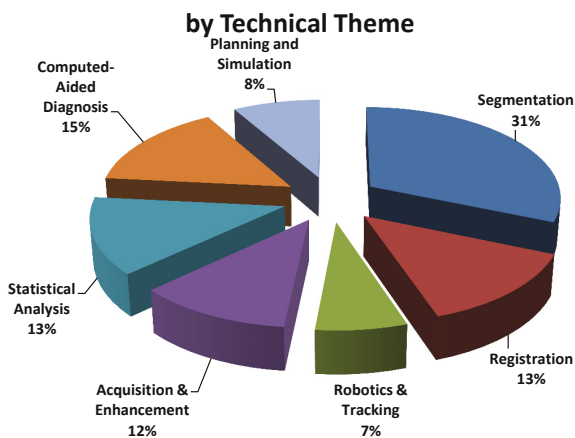
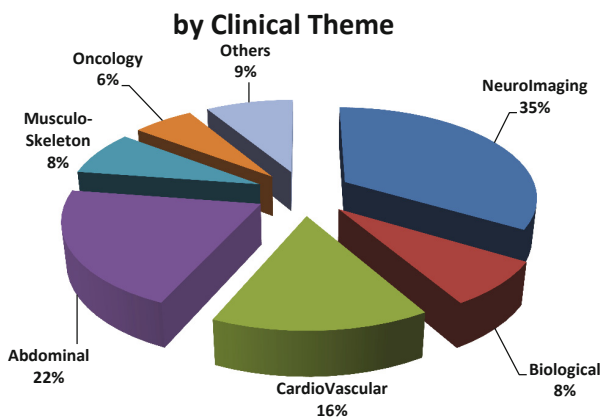
- The 100 Program Committee members and 913 scientific reviewers, listed in this book, who worked closely with us and prepared many written reviews and recommendations for acceptance or rejection,
- Xavier Pennec as the Chair for the organization of the 32 satellite events (workshops, challenges, tutorials) with the assistance of Tobias Heimann, Kilian Pohl and Akinobu Shimizu as Co-chairs, and all the organizers of these events,
- Agnès Cortell as the Local Organization Chair, who successfully coordinated all the details of the organization of the event with the support of a local organizing team (composed of Marc Barret, Grégoire Malandain, Xavier Pennec, Maxime Sermesant and two of us), several Inria services (involving heavily Odile Carron and Matthieu Oricelli), and the MCI company,
- Maxime Sermesant as MICCAI Website Chair,
- Grégoire Malandain for the new organization of posters including digital screens,
- Isabelle Strobant for the organization of the PC meeting in Nice, the invitations of the MICCAI guests, and her constant support during the preparation of the event,
- Gérard Giraudon, director of Inria in Sophia Antipolis, for his constant support,
- Sebastien Ourselin for his help in coordinating industrial sponsorship,
- All students and engineers (mainly from Asclepios and Athena Inria teams) who helped with the scientific and local organization,
- Emmanuelle Viau, who coordinated the team at MCI including in particular Thibault Claisse and Thibault Lestiboudois,
- Jim Duncan as the President of the MICCAI Society and its board of directors who elected MICCAI 2012 to be held in Nice,
- Janette Wallace, Johanne Guillemette and Chris Wedlake for the liaison with the MICCAI Society,
- James Stewart for his precious help with the Precision Conference System,
- All our industrial and institutional sponsors and partners for their fantastic support of the conference.

Finally, we would like to thank all the MICCAI 2012 attendees who came to Nice from 34 countries from all around the world, and we look forward to meeting them again at MICCAI 2013 in Nagoya, Japan, at MICCAI 2014 in Cambridge, Massachusetts, USA and at MICCAI 2015 in Munich, Germany.

October 2012

Nicholas Ayache
Hervé Delingette
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Accepted MICCAI 2012 Papers



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 Linguraru, Marius George
 Linte, Cristian
 Litjens, Geert
 Liu, Huafeng
 Liu, Jiamin
 Liu, Manhua
 Liu, Meizhu
 Liu, Sheena
 Liu, Tianming
 Liu, Xiaofeng
 Liu, Xiaoxiao
 Liu, Zhao
 Lo, Pechin
 Loeckx, Dirk
 Loew, Murray
 Lohmann, Gabriele
 Lombaert, Herve
 Loog, Marco
 Lötjönen, Jyrki
 Lu, Chao
 Lu, Le
 Lu, Xiaoguang
 Luboz, Vincent
 Lucas, Blake
 Lui, Lok Ming
 Luo, Yishan
 Lynch, John

Ma, YingLiang
Machiraju, Raghu
MacLeod, Robert
Madany Mamlouk, Amir
Maddah, Mahnaz
Magee, Derek
Magnotta, Vincent
Maier-Hein, Lena
Malandain, Grégoire
Manduca, Armando
Mani, Meena
Manjón, José V.
Manniesing, Rashindra
Mansi, Tommaso
Manzke, Robert
Marchal, Maud
Marsland, Stephen
Martí, Robert
Masamune, Ken
Mattes, Julian
Maurel, Pierre
Mavroforakis, Michael
McClelland, Jamie
McCormick, Matthew
Medrano-Gracia, Pau
Meine, Hans
Meinzer, Hans-Peter
Meisner, Eric
Mekada, Yoshito
Melbourne, Andrew
Mertins, Alfred
Metz, Coert
Meyer, Chuck
Meyer, François
Michailovich, Oleg
Michel, Fabrice
Mihalef, Viorel
Miller, James
Modat, Marc
Modersitzki, Jan
Mohamed, Ashraf
Monaco, James
Montillo, Albert
Moore, John
Moradi, Mehdi

Mory, Benoit
Müller, Henning
Murgasova, Maria
Murphy, Keelin
Mylonas, George
Najman, Laurent
Nakajima, Yoshikazu
Nakamura, Ryoichi
Nassiri-Avanaki, Mohammad-Reza
Negahdar, Mohammadjavad
Negahdar, Mohammadreza
Nekolla, Stephan
Neumuth, Thomas
Ng, Bernard
Nichols, Thomas
Nicolau, Stéphane
Nie, Jingxin
Niederer, Steven
Niethammer, Marc
Noble, Jack
Noël, Peter
Nolte, Lutz
Nordsletten, David
Nuyts, Johan
O'Brien, Kieran
Oda, Masahiro
O'Donnell, Lauren
O'Donnell, Thomas
Oguz, Ipek
Okada, Kazunori
Olabarriaga, Silvia
Olesch, Janine
Oliver, Arnau
Olmos, Salvador
Oost, Elco
Orihuela-Espina, Felipe
Orkisz, Maciej
Otake, Yoshito
Ou, Yangming
Pace, Danielle
Padfield, Dirk
Padoy, Nicolas
Palaniappan, Kannappan
Pallavaram, Srivatsan
Panagiotaki, Eleftheria

Paniagua, Beatriz
Paolillo, Alfredo
Papademetris, Xenios
Papadopoulo, Theo
Park, Mi-Ae
Parthasarathy, Vijay
Passat, Nicolas
Pasternak, Ofer
Patriciu, Alexandru
Paul, Perrine
Paulsen, Keith
Paulsen, Rasmus
Pauly, Olivier
Pavlidis, Ioannis
Pearlman, Paul
Pedemonte, Stefano
Peitgen, Heinz-Otto
Pekar, Vladimir
Peng, Hanchuan
Penney, Graeme
Pernus, Franjo
Perperidis, Antonios
Perrot, Matthieu
Peters, Amanda
Petersen, Jens
Petitjean, Caroline
Peyrat, Jean-Marc
Peyré, Gabriel
Pham, Dzung
Phlypo, Ronald
Piella, Gemma
Pitiot, Alain
Pizaine, Guillaume
Pizer, Stephen
Platel, Bram
Podder, Tarun
Poignet, Philippe
Poline, Jean-Baptiste
Polzehl, Joerg
Pontre, Beau
Poot, Dirk
Popovic, Aleksandra
Poupon, Cyril
Poynton, Clare
Pozo, José Maria

Prasad, Gautam
Prastawa, Marcel
Pratt, Philip
Prima, Sylvain
Prince, Jerry
Punithakumar, Kumaradevan
Puy, Gilles
Qazi, Arish A.
Qian, Zhen
Quellec, Gwenole
Radau, Perry
Radeva, Petia
Radulescu, Emil
Rahman, Md Mahmudur
Raj, Ashish
Rajagopalan, Srinivasan
Rajagopalan, Vidya
Rajpoot, Nasir
Rangarajan, Anand
Rasoulia, Abtin
Rathi, Yogesh
Ratnanather, Tilak
Ravishankar, Saiprasad
Reichl, Tobias
Reilhac-Laborde, Anthonin
Rettmann, Maryam
Reuter, Martin
Reyes, Mauricio
Reyes-Aldasoro, Constantino
Rhode, Kawal
Ribbens, Annemie
Richa, Rogerio
Riddell, Cyril
Ridgway, Gerard
Riklin Raviv, Tammy
Risholm, Petter
Risser, Laurent
Rit, Simon
Rittscher, Jens
Rivaz, Hassan
Riviere, Cameron
Riviere, Denis
Roche, Alexis
Rohkohl, Christopher
Rohling, Robert

Rohr, Karl	Simonyan, Karen
Rousseau, François	Simpson, Amber
Roysam, Badrinath	Simpson, Ivor
Ruehaak, Jan	Singh, Maneesh
Russakoff, Daniel	Singh, Nikhil
Rusu, Mirabela	Singh, Vikas
Ruthotto, Lars	Sinkus, Ralph
Sabczynski, Jörg	Siqueira, Marcelo
Sadeghi-Naini, Ali	Sjöstrand, Karl
Sadowsky, Ofri	Slabaugh, Greg
Saha, Punam Kumar	Slagmolen, Pieter
Salvado, Olivier	Smal, Ihor
San Jose Estepar, Raul	Smeets, Dirk
Sanchez, Clarisa	Soeller, Christian
Sanderson, Allen	Sofka, Michal
Sands, Greg	Soler, Luc
Sarrut, David	Song, Sang-Eun
Sarry, Laurent	Song, Xubo
Savadjiev, Peter	Sonka, Milan
Scherer, Reinhold	Srensen, Lauge
Scherrer, Benoit	Sotiras, Aristeidis
Schindelin, Johannes	Sparks, Rachel
Schmidt, Michael	Sporring, Jon
Schmidt-Richberg, Alexander	Staal, Joes
Schneider, Caitlin	Staring, Marius
Schneider, Torben	Staroswiecki, Ernesto
Schoonenberg, Gert	Stehle, Thomas
Schultz, Thomas	Stewart, James
Schweikard, Achim	Stolka, Philipp
Sebastian, Rafael	Stoyanov, Danail
Seiler, Christof	Styles, Iain
Serre, Thomas	Subramanian, Navneeth
Seshamani, Sharmishta	Suinesiaputra, Avan
Shah, Shishir	Sundar, Hari
Shamir, Reuben R.	Suthau, Tim
Shen, Li	Suzuki, Kenji
Shen, Tian	Syeda-Mahmood, Tanveer
Shi, Feng	Szczerba, Dominik
Shi, Kuangyu	Tagare, Hemant
Shi, Pengcheng	Tahmasebi, Amir
Shi, Yonggang	Tai, Xue-Cheng
Shi, Yonghong	Tannenbaum, Allen
Shi, Yubing	Tanner, Christine
Sijbers, Jan	Tao, Xiaodong
Simaan, Nabil	Tasdizen, Tolga

Tavakoli, Vahid	Vosburgh, Kirby
Taylor, Zeike	Vrooman, Henri
Thévenaz, Philippe	Vrtovec, Tomaz
Thiriet, Marc	Wachinger, Christian
Tiwari, Pallavi	Waechter-Stehle, Irina
Tobon-Gomez, Catalina	Wahle, Andreas
Toews, Matthew	Waldman, Lew
Tohka, Jussi	Wang, Chaohui
Tokuda, Junichi	Wang, Fei
Tosun, Duygu	Wang, Hongzhi
Toth, Robert	Wang, Hui
Toussaint, Nicolas	Wang, Lejing
Tristán-Vega, Antonio	Wang, Li
Tsekos, Nikolaos V.	Wang, Liansheng
Turaga, Srinivas	Wang, Peng
Tustison, Nicholas	Wang, Qian
Uchiyama, Yoshikazu	Wang, Song
Udupa, Jayaram K.	Wang, Vicky
Unal, Gozde	Wang, Yalin
Uzunbas, Mustafa	Wang, Yang
van Assen, Hans	Wang, Ying
van der Geest, Rob	Wanyu, Liu
van der Lijn, Fedde	Warfield, Simon
van Rikxoort, Eva	Wassermann, Demian
van Stralen, Marijn	Weber, Stefan
van Walsum, Theo	Wee, Chong-Yaw
Vannier, Michael	Wei, Liu
Varoquaux, Gael	Weiskopf, Nikolaus
Vegas-Sánchez-Ferrero, Gonzalo	Wells, William
Venkataraman, Archana	Wels, Michael
Vercauteren, Tom	Werner, Rene
Vialard, François-Xavier	Whitaker, Ross
Vignon, François	Whitmarsh, Tristan
Villain, Nicolas	Wiles, Andrew
Villard, Pierre-Frédéric	Wirtz, Stefan
Vincent, Nicole	Witteck, Adam
Visentini-Scarzanella, Marco	Wolf, Ivo
Visvikis, Dimitris	Wolz, Robin
Viswanath, Satish	Wörz, Stefan
Vitanovski, Dime	Wu, Guorong
Vogel, Jakob	Wu, Wen
Voigt, Ingmar	Wu, Xiaodong
von Berg, Jens	Xenos, Michalis
Voros, Sandrine	Xie, Jun
Vos, Pieter	Xiong, Guanglei

Xu, Jun
 Xu, Lei
 Xu, Sheng
 Xu, Xiayu
 Xue, Hui
 Xue, Zhong
 Yan, Pingkun
 Yan, Zhenan
 Yang, Fei
 Yang, Lin
 Yang, Xiaofeng
 Yang, Xiaoyun
 Yaniv, Ziv
 Yao, Jianhua
 Yap, Pew-Thian
 Yaqub, Mohammad
 Ye, Dong Hye
 Yener, Bülent
 Yeniaras, Erol
 Yeo, B.T. Thomas
 Yin, Zhaozheng
 Ying, Leslie
 Yoo, Terry
 Yoshida, Hiro
 Yotter, Rachel
 Yushkevich, Paul
 Zagorchev, Lyubomir
 Zahiri Azar, Reza
 Zaidi, Habib
 Zeng, Wei

Zhan, Liang
 Zhan, Yiqiang
 Zhang, Chong
 Zhang, Daoqiang
 Zhang, Honghai
 Zhang, Hui
 Zhang, Jingdan
 Zhang, Pei
 Zhang, Shaoting
 Zhao, Fei
 Zheng, Guoyan
 Zheng, Yefeng
 Zheng, Yuanjie
 Zhong, Hua
 Zhong, Lin
 Zhou, Jinghao
 Zhou, Luping
 Zhou, S. Kevin
 Zhou, X. Sean
 Zhou, Xiaobo
 Zhou, Yan
 Zhu, Hongtu
 Zhu, Ning
 Zhu, Yuemin
 Zhuang, Xiahai
 Zijdenbos, Alex
 Zikic, Darko
 Zion, Tse
 Zollei, Lilla
 Zwiggelaar, Reyer

Awards Presented at MICCAI 2011, Toronto

MICCAI Society Enduring Impact Award Sponsored by Philips: The Enduring Impact Award is the highest award of the MICCAI Society. It is a career award for continued excellence in the MICCAI research field. The 2011 Enduring Impact Award was presented to *Chris Taylor*, Manchester University, UK.

MICCAI Society Fellowships: MICCAI Fellowships are bestowed annually on a small number of senior members of the society in recognition of substantial scientific contributions to the MICCAI research field and service to the MICCAI community. In 2011, fellowships were awarded to:

- *Christian Barillot* (IRISA-CNRS, France)
- *Gabor Fichtinger* (Queens University, Canada)
- *Jerry Prince* (Johns Hopkins University, USA)

Medical Image Analysis Journal Award Sponsored by Elsevier: *Ola Friman*, for the article entitled: “Probabilistic 4D Blood Flow Tracking and Uncertainty Estimation”, co-authored by: *Ola Friman*, *Anja Hennemuth*, *Andreas Harloff*, *Jelena Bock*, *Michael Markl*, and *Heinz-Otto Peitgen*

Best Paper in Computer-Assisted Intervention Systems and Medical Robotics, Sponsored by Intuitive Surgical Inc.: *Jay Mung*, for the article entitled “A Non-disruptive Technology for Robust 3D Tool Tracking for Ultrasound-Guided Interventions”, co-authored by: *Jay Mung*, *Francois Vignon*, and *Ameet Jain*.

MICCAI Young Scientist Awards: The Young Scientist Awards are stimulation prizes awarded for the best first authors of MICCAI contributions in distinct subject areas. The nominees had to be full-time students at a recognized university at, or within, two years prior to submission. The 2011 MICCAI Young Scientist Awards were given to:

- *Mattias Heinrich* for his paper entitled “Non-local Shape Descriptor: A New Similarity Metric for Deformable Multi-modal Registration”
- *Tommaso Mansi* for his paper entitled “Towards Patient-Specific Finite-Element Simulation of Mitral Clip Procedure”
- *Siyang Zuo* for his paper entitled “Nonmetallic Rigid-Flexible Outer Sheath with Pneumatic Shapelocking Mechanism and Double Curvature Structure”
- *Christof Seiler* for his paper entitled “Geometry-Aware Multiscale Image Registration via OBB Tree-Based Polyaffine Log-Demons”
- *Ting Chen* for her paper entitled “Mixture of Segmenters with Discriminative Spatial Regularization and Sparse Weight Selection”

Table of Contents – Part III

Diffusion Imaging: From Acquisition to Tractography

Accelerated Diffusion Spectrum Imaging with Compressed Sensing Using Adaptive Dictionaries	1
<i>Berkin Bilgic, Kawin Setsompop, Julien Cohen-Adad, Van Wedeen, Lawrence L. Wald, and Elfar Adalsteinsson</i>	
Parametric Dictionary Learning for Modeling EAP and ODF in Diffusion MRI	10
<i>Sylvain Merlet, Emmanuel Caruyer, and Rachid Deriche</i>	
Resolution Enhancement of Diffusion-Weighted Images by Local Fiber Profiling	18
<i>Pew-Thian Yap and Dinggang Shen</i>	
Geodesic Shape-Based Averaging	26
<i>M. Jorge Cardoso, Gavin Winston, Marc Modat, Shiva Keihaninejad, John Duncan, and Sebastien Ourselin</i>	
Multi-scale Characterization of White Matter Tract Geometry	34
<i>Peter Savadjiev, Yogesh Rathi, Sylvain Bouix, Ragini Verma, and Carl-Fredrik Westin</i>	

Image Acquisition, Segmentation and Recognition

Optimization of Acquisition Geometry for Intra-operative Tomographic Imaging	42
<i>Jakob Vogel, Tobias Reichl, José Gardiazabal, Nassir Navab, and Tobias Lasser</i>	
Incorporating Parameter Uncertainty in Bayesian Segmentation Models: Application to Hippocampal Subfield Volumetry	50
<i>Juan Eugenio Iglesias, Mert Rory Sabuncu, Koen Van Leemput, and The Alzheimer's Disease Neuroimaging Initiative</i>	
A Dynamical Appearance Model Based on Multiscale Sparse Representation: Segmentation of the Left Ventricle from 4D Echocardiography	58
<i>Xiaojie Huang, Donald P. Dione, Colin B. Compas, Xenophon Papademetris, Ben A. Lin, Albert J. Sinusas, and James S. Duncan</i>	

Automatic Detection and Segmentation of Kidneys in 3D CT Images Using Random Forests	66
<i>Rémi Cuingnet, Raphael Prevost, David Lesage, Laurent D. Cohen, Benoît Mory, and Roberto Ardon</i>	
Neighbourhood Approximation Forests	75
<i>Ender Konukoglu, Ben Glocker, Darko Zikic, and Antonio Criminisi</i>	
Recognition in Ultrasound Videos: Where Am I?	83
<i>Roland Kwitt, Nuno Vasconcelos, Sharif Razzaque, and Stephen Aylward</i>	

Image Registration II

Self-similarity Weighted Mutual Information: A New Nonrigid Image Registration Metric	91
<i>Hassan Rivaz and D. Louis Collins</i>	
Inter-Point Procrustes: Identifying Regional and Large Differences in 3D Anatomical Shapes	99
<i>Karim Lekadir, Alejandro F. Frangi, and Guang-Zhong Yang</i>	
Selection of Optimal Hyper-Parameters for Estimation of Uncertainty in MRI-TRUS Registration of the Prostate	107
<i>Petter Risholm, Firdaus Janoos, Jennifer Pursley, Andriy Fedorov, Clare Tempany, Robert A. Cormack, and William M. Wells III</i>	
Globally Optimal Deformable Registration on a Minimum Spanning Tree Using Dense Displacement Sampling	115
<i>Mattias P. Heinrich, Mark Jenkinson, Sir Michael Brady, and Julia A. Schnabel</i>	
Unbiased Groupwise Registration of White Matter Tractography	123
<i>Lauren J. O'Donnell, William M. Wells III, Alexandra J. Golby, and Carl-Fredrik Westin</i>	
Regional Manifold Learning for Deformable Registration of Brain MR Images	131
<i>Dong Hye Ye, Jihun Hamm, Dongjin Kwon, Christos Davatzikos, and Kilian M. Pohl</i>	
Estimation and Reduction of Target Registration Error	139
<i>Ryan D. Datteri and Benoît M. Dawant</i>	
A Hierarchical Scheme for Geodesic Anatomical Labeling of Airway Trees	147
<i>Aasa Feragen, Jens Petersen, Megan Owen, Pechin Lo, Laura H. Thomsen, Mathilde M.W. Wille, Asger Dirksen, and Marleen de Bruijne</i>	

Initialising Groupwise Non-rigid Registration Using Multiple Parts+Geometry Models	156
<i>Pei Zhang, Pew-Thian Yap, Dinggang Shen, and Timothy F. Cootes</i>	
An Efficient and Robust Algorithm for Parallel Groupwise Registration of Bone Surfaces	164
<i>Martijn van de Giessen, Frans M. Vos, Cornelis A. Grimbergen, Lucas J. van Vliet, and Geert J. Streekstra</i>	

NeuroImage Analysis II

Realistic Head Model Design and 3D Brain Imaging of NIRS Signals Using Audio Stimuli on Preterm Neonates for Intra-Ventricular Hemorrhage Diagnosis	172
<i>Marc Fournier, Mahdi Mahmoudzadeh, Kamran Kazemi, Guy Kongolo, Ghislaine Dehaene-Lambertz, Reinhard Grebe, and Fabrice Wallois</i>	
Hemodynamic-Informed Parcellation of fMRI Data in a Joint Detection Estimation Framework	180
<i>L. Chaari, F. Forbes, T. Vincent, and P. Ciuciu</i>	
Group Analysis of Resting-State fMRI by Hierarchical Markov Random Fields	189
<i>Wei Liu, Suyash P. Awate, and P. Thomas Fletcher</i>	
Metamorphic Geodesic Regression	197
<i>Yi Hong, Sarang Joshi, Mar Sanchez, Martin Styner, and Marc Niethammer</i>	
Eigenanatomy Improves Detection Power for Longitudinal Cortical Change	206
<i>Brian Avants, Paramveer Dhillon, Benjamin M. Kandel, Philip A. Cook, Corey T. McMillan, Murray Grossman, and James C. Gee</i>	
Optimization of fMRI-Derived ROIs Based on Coherent Functional Interaction Patterns	214
<i>Fan Deng, Dajiang Zhu, and Tianming Liu</i>	
Topology Preserving Atlas Construction from Shape Data without Correspondence Using Sparse Parameters	223
<i>Stanley Durrleman, Marcel Prastawa, Julie R. Korenberg, Sarang Joshi, Alain Trounev, and Guido Gerig</i>	
Dominant Component Analysis of Electrophysiological Connectivity Networks	231
<i>Yasser Ghanbari, Luke Bloy, Kayhan Batmanghelich, Timothy P.L. Roberts, and Ragini Verma</i>	

Tree-Guided Sparse Coding for Brain Disease Classification	239
<i>Manhua Liu, Daoqiang Zhang, Pew-Thian Yap, and Dinggang Shen</i>	
Improving Accuracy and Power with Transfer Learning Using a Meta-analytic Database	248
<i>Yannick Schwartz, Gaël Varoquaux, Christophe Pallier, Philippe Pinel, Jean-Baptiste Poline, and Bertrand Thirion</i>	
Radial Structure in the Preterm Cortex; Persistence of the Preterm Phenotype at Term Equivalent Age?	256
<i>Andrew Melbourne, Giles S. Kendall, M. Jorge Cardoso, Roxanna Gunney, Nicola J. Robertson, Neil Marlow, and Sebastien Ourselin</i>	
Temporally-Constrained Group Sparse Learning for Longitudinal Data Analysis	264
<i>Daoqiang Zhang, Jun Liu, and Dinggang Shen</i>	
Feature Analysis for Parkinson’s Disease Detection Based on Transcranial Sonography Image	272
<i>Lei Chen, Johann Hagenah, and Alfred Mertins</i>	
Longitudinal Image Registration with Non-uniform Appearance Change	280
<i>Istvan Csapo, Brad Davis, Yundi Shi, Mar Sanchez, Martin Styner, and Marc Niethammer</i>	
Cortical Folding Analysis on Patients with Alzheimer’s Disease and Mild Cognitive Impairment	289
<i>David M. Cash, Andrew Melbourne, Marc Modat, M. Jorge Cardoso, Matthew J. Clarkson, Nick C. Fox, and Sebastien Ourselin</i>	
Inferring Group-Wise Consistent Multimodal Brain Networks via Multi-view Spectral Clustering	297
<i>Hanbo Chen, Kaiming Li, Dajiang Zhu, Tuo Zhang, Changfeng Jin, Lei Guo, Lingjiang Li, and Tianming Liu</i>	
Test-Retest Reliability of Graph Theory Measures of Structural Brain Connectivity	305
<i>Emily L. Dennis, Neda Jahanshad, Arthur W. Toga, Katie L. McMahon, Greig I. de Zubicaray, Nicholas G. Martin, Margaret J. Wright, and Paul M. Thompson</i>	
Registration and Analysis of White Matter Group Differences with a Multi-fiber Model	313
<i>Maxime Taquet, Benoît Scherrer, Olivier Commowick, Jurriaan Peters, Mustafa Sahin, Benoît Macq, and Simon K. Warfield</i>	

Analysis of Microscopic and Optical Images II

Scalable Tracing of Electron Micrographs by Fusing Top Down and Bottom Up Cues Using Hypergraph Diffusion.....	321
<i>Vignesh Jagadeesh, Min-Chi Shih, B.S. Manjunath, and Kenneth Rose</i>	
A Diffusion Model for Detecting and Classifying Vesicle Fusion and Undocking Events.....	329
<i>Lorenz Berger, Majid Mirmehdi, Sam Reed, and Jeremy Tavaré</i>	
Efficient Scanning for EM Based Target Localization	337
<i>Raphael Sznitman, Aurelien Lucchi, Natasa Pjescic-Emedji, Graham Knott, and Pascal Fua</i>	
Automated Tuberculosis Diagnosis Using Fluorescence Images from a Mobile Microscope	345
<i>Jeannette Chang, Pablo Arbeláez, Neil Switz, Clay Reber, Asa Tapley, J. Lucian Davis, Adithya Cattamanchi, Daniel Fletcher, and Jitendra Malik</i>	

Image Segmentation III

Accurate Fully Automatic Femur Segmentation in Pelvic Radiographs Using Regression Voting	353
<i>C. Lindner, S. Thiagarajah, J.M. Wilkinson, arcOGEN Consortium, G.A. Wallis, and Timothy F. Cootes</i>	
Automatic Location of Vertebrae on DXA Images Using Random Forest Regression	361
<i>M.G. Roberts, Timothy F. Cootes, and J.E. Adams</i>	
Decision Forests for Tissue-Specific Segmentation of High-Grade Gliomas in Multi-channel MR	369
<i>Darko Zikic, Ben Glocker, Ender Konukoglu, Antonio Criminisi, C. Demiralp, J. Shotton, O.M. Thomas, T. Das, R. Jena, and S.J. Price</i>	
Efficient Global Optimization Based 3D Carotid AB-LIB MRI Segmentation by Simultaneously Evolving Coupled Surfaces	377
<i>Eranga Ukwatta, Jing Yuan, Martin Rajchl, and Aaron Fenster</i>	
Sparse Patch Based Prostate Segmentation in CT Images	385
<i>Shu Liao, Yaozong Gao, and Dinggang Shen</i>	
Anatomical Landmark Detection Using Nearest Neighbor Matching and Submodular Optimization	393
<i>David Liu and S. Kevin Zhou</i>	

Integration of Local and Global Features for Anatomical Object Detection in Ultrasound	402
<i>Bahbib Rahmatullah, Aris T. Papageorghiou, and J. Alison Noble</i>	
Spectral Label Fusion	410
<i>Christian Wachinger and Polina Golland</i>	
Multi-Organ Segmentation with Missing Organs in Abdominal CT Images	418
<i>Miyuki Suzuki, Marius George Linguraru, and Kazunori Okada</i>	
Non-local STAPLE: An Intensity-Driven Multi-atlas Rater Model	426
<i>Andrew J. Asman and Bennett A. Landman</i>	
Shape Prior Modeling Using Sparse Representation and Online Dictionary Learning	435
<i>Shaoting Zhang, Yiqiang Zhan, Yan Zhou, Mustafa Uzunbas, and Dimitris N. Metaxas</i>	
Detection of Substantia Nigra Echogenicities in 3D Transcranial Ultrasound for Early Diagnosis of Parkinson Disease	443
<i>Olivier Pauly, Seyed-Ahmad Ahmadi, Annika Plate, Kai Boetzel, and Nassir Navab</i>	
Prostate Segmentation by Sparse Representation Based Classification ...	451
<i>Yaozong Gao, Shu Liao, and Dinggang Shen</i>	
Co-segmentation of Functional and Anatomical Images	459
<i>Ulas Bagci, Jayaram K. Udupa, Jianhua Yao, and Daniel J. Mollura</i>	

Diffusion Weighted Imaging II

Using Multiparametric Data with Missing Features for Learning Patterns of Pathology	468
<i>Madhura Ingalkar, William A. Parker, Luke Bloy, Timothy P.L. Roberts, and Ragini Verma</i>	
Non-local Robust Detection of DTI White Matter Differences with Small Databases	476
<i>Olivier Commowick and Aymeric Stamm</i>	
Group-Wise Consistent Fiber Clustering Based on Multimodal Connectional and Functional Profiles	485
<i>Bao Ge, Lei Guo, Tuo Zhang, Dajiang Zhu, Kaiming Li, Xintao Hu, Junwei Han, and Tianming Liu</i>	
Learning a Reliable Estimate of the Number of Fiber Directions in Diffusion MRI	493
<i>Thomas Schultz</i>	

Computer-Aided Diagnosis and Planning II

Finding Similar 2D X-Ray Coronary Angiograms	501
<i>Tanveer Syeda-Mahmood, Fei Wang, R. Kumar, D. Beymer,</i> <i>Y. Zhang, Robert Lundstrom, and Edward McNulty</i>	
Detection of Vertebral Body Fractures Based on Cortical Shell Unwrapping	509
<i>Jianhua Yao, Joseph E. Burns, Hector Munoz, and</i> <i>Ronald M. Summers</i>	
Multiscale Lung Texture Signature Learning Using the Riesz Transform	517
<i>Adrien Depeursinge, Antonio Foncubierta-Rodriguez,</i> <i>Dimitri Van de Ville, and Henning Müller</i>	
Blood Flow Simulation for the Liver after a Virtual Right Lobe Hepatectomy	525
<i>Harvey Ho, Keagan Sorrell, Adam Bartlett, and Peter Hunter</i>	
A Combinatorial Method for 3D Landmark-Based Morphometry: Application to the Study of Coronal Craniosynostosis.....	533
<i>Emeric Gioan, Kevin Sol, and Gérard Subsol</i>	
A Comprehensive Framework for the Detection of Individual Brain Perfusion Abnormalities Using Arterial Spin Labeling	542
<i>Camille Maumet, Pierre Maurel, Jean-Christophe Ferré, and</i> <i>Christian Barillot</i>	
Automated Colorectal Cancer Diagnosis for Whole-Slice Histopathology	550
<i>Habil Kalkan, Marius Nap, Robert P.W. Duin, and Marco Loog</i>	
Patient-Adaptive Lesion Metabolism Analysis by Dynamic PET Images.....	558
<i>Fei Gao, Huafeng Liu, and Pengcheng Shi</i>	
A Personalized Biomechanical Model for Respiratory Motion Prediction	566
<i>B. Fuerst, T. Mansi, Jianwen Zhang, P. Khurd, J. Declerck,</i> <i>T. Boettger, Nassir Navab, J. Bayouth, Dorin Comaniciu, and</i> <i>A. Kamen</i>	
Endoscope Distortion Correction Does Not (Easily) Improve Mucosa-Based Classification of Celiac Disease	574
<i>Jutta Hämmerle-Uhl, Yvonne Höller, Andreas Uhl, and</i> <i>Andreas Vécsei</i>	

Gaussian Process Inference for Estimating Pharmacokinetic Parameters of Dynamic Contrast-Enhanced MR Images	582
<i>Shijun Wang, Peter Liu, Baris Turkbey, Peter Choyke, Peter Pinto, and Ronald M. Summers</i>	
Automatic Localization and Identification of Vertebrae in Arbitrary Field-of-View CT Scans	590
<i>Ben Glocker, J. Feulner, Antonio Criminisi, D.R. Haynor, and E. Konukoglu</i>	
Pathology Hinting as the Combination of Automatic Segmentation with a Statistical Shape Model	599
<i>Pascal A. Dufour, Hannan Abdillahi, Lala Ceklic, Ute Wolf-Schnurrbusch, and Jens Kowal</i>	
An Invariant Shape Representation Using the Anisotropic Helmholtz Equation	607
<i>A.A. Joshi, S. Ashrafulla, D.W. Shattuck, H. Damasio, and R.M. Leahy</i>	
Microscopic Image Analysis	
Phase Contrast Image Restoration via Dictionary Representation of Diffraction Patterns	615
<i>Hang Su, Zhaozheng Yin, Takeo Kanade, and Seungil Huh</i>	
Context-Constrained Multiple Instance Learning for Histopathology Image Segmentation	623
<i>Yan Xu, Jianwen Zhang, Eric I-Chao Chang, Maode Lai, and Zhuowen Tu</i>	
Structural-Flow Trajectories for Unravelling 3D Tubular Bundles	631
<i>Katerina Fragkiadaki, Weiyu Zhang, Jianbo Shi, and Elena Bernardis</i>	
Online Blind Calibration of Non-uniform Photodetectors: Application to Endomicroscopy	639
<i>Nicolas Savoire, Barbara André, and Tom Vercauteren</i>	
Author Index	647