MICCAI 2013
NAGOYA JAPAN

The 16th International Conference on Medical Image Computing and Computer Assisted Intervention

Program of MICCAI 2013
Workshops, Challenges and Tutorials

SEPTEMBER 22-26, 2013
TOYODA AUDITORIUM
NAGOYA UNIVERSITY

www.miccai2013.org
# Contents

Foreword

General Information

MICCAI 2013 Satellite Events Organization

Program of MICCAI 2013 Workshops, Challenges and Tutorials - Sunday September 22

<table>
<thead>
<tr>
<th>Location Maps for Sunday September 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLMI ’13</td>
</tr>
<tr>
<td>4th International Workshop on Machine Learning in Medical Imaging</td>
</tr>
<tr>
<td>CBM8</td>
</tr>
<tr>
<td>Computational Biomechanics for Medicine VIII</td>
</tr>
<tr>
<td>MFCA ’13</td>
</tr>
<tr>
<td>4th MICCAI workshop on Mathematical Foundations of Computational Anatomy</td>
</tr>
<tr>
<td>CLIP 2013</td>
</tr>
<tr>
<td>Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging</td>
</tr>
<tr>
<td>CDMRI ’13</td>
</tr>
<tr>
<td>MICCAI 2013 Workshop on Computational Diffusion MRI</td>
</tr>
<tr>
<td>MICCAI- STENT</td>
</tr>
<tr>
<td>The 2nd International MICCAI-Workshop on Computer Assisted Stenting</td>
</tr>
<tr>
<td>MBBC 2013</td>
</tr>
<tr>
<td>Mathematical Methods for Brain Connectivity</td>
</tr>
<tr>
<td>M2CAI</td>
</tr>
<tr>
<td>Modeling and Monitoring of Computer Assisted Interventions</td>
</tr>
<tr>
<td>ABDI 2013</td>
</tr>
<tr>
<td>5th International Workshop on Abdominal Imaging: Computational and Clinical Applications</td>
</tr>
<tr>
<td>MBIA 2013</td>
</tr>
<tr>
<td>3rd International Workshop on Multimodal Brain Image Analysis</td>
</tr>
<tr>
<td>MIAR 2013</td>
</tr>
<tr>
<td>The 6th International Workshop on Medical Imaging and Augmented Reality</td>
</tr>
<tr>
<td>SMMIA</td>
</tr>
<tr>
<td>Stochastic Modeling for Medical Image Analysis</td>
</tr>
<tr>
<td>IAAMI 2013</td>
</tr>
<tr>
<td>Introduction to Analysis and Applications of Molecular Imaging</td>
</tr>
<tr>
<td>VTR 2013</td>
</tr>
<tr>
<td>Visual tracking and 3D reconstruction for computer assisted interventions: state-of-the-art and challenges</td>
</tr>
<tr>
<td>DTIChallenge</td>
</tr>
<tr>
<td>MICCAI DTI Tractography Challenge on Peritumoral White Matter Anatomy for Neurosurgical Decision-Making</td>
</tr>
<tr>
<td>ASPS- BRATS</td>
</tr>
<tr>
<td>NCI-MICCAI 2013 Challenges: Automated Segmentation of Prostate Structures (ASPS) and Multiparametric Brain Tumor Segmentation</td>
</tr>
<tr>
<td>AMIDA 13</td>
</tr>
<tr>
<td>MICCAI Grand Challenge: Assessment of Mitosis Detection Algorithms 2013</td>
</tr>
</tbody>
</table>

Program of MICCAI 2013 Workshops, Challenges and Tutorials - Thursday September 26

<table>
<thead>
<tr>
<th>Location Maps for Thursday September 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 2013</td>
</tr>
<tr>
<td>MICCAI 2013 workshop on Computational Methods and Clinical Applications for Spine Imaging</td>
</tr>
<tr>
<td>MeshMed 2013</td>
</tr>
<tr>
<td>MICCAI 2013 Workshop on Mesh Processing in Medical Image Analysis</td>
</tr>
<tr>
<td>SACAI 2013</td>
</tr>
<tr>
<td>MICCAI 2013 workshop on Systems and Architectures for Computer Assisted Interventions</td>
</tr>
<tr>
<td>MCV</td>
</tr>
<tr>
<td>MICCAI 2013 workshop on Medical Computer Vision</td>
</tr>
<tr>
<td>BIV- PCS</td>
</tr>
<tr>
<td>MICCAI 2013 workshop on Bio-Imaging and Visualization for Patient-Customized Simulations</td>
</tr>
<tr>
<td>STACOM ’13</td>
</tr>
<tr>
<td>4th International Workshop on Stastical Atlases and Computational Models of the Heart</td>
</tr>
<tr>
<td>HPC</td>
</tr>
<tr>
<td>The Sixth International Workshop on High Performance Computing for Biomedical Image Analysis</td>
</tr>
<tr>
<td>MCBR-CDS ’13</td>
</tr>
<tr>
<td>MICCAI 2013 workshop on Medical Content-based Retrieval for Clinical Decision Support</td>
</tr>
<tr>
<td>PIA 2013</td>
</tr>
<tr>
<td>Fifth International Workshop on Pulmonary Image Analysis</td>
</tr>
<tr>
<td>BIA 2013</td>
</tr>
<tr>
<td>MICCAI 2013 Workshop on Breast Image Analysis</td>
</tr>
<tr>
<td>RMI</td>
</tr>
<tr>
<td>R based medical imaging tutorial</td>
</tr>
<tr>
<td>Intelligent MR</td>
</tr>
<tr>
<td>Intelligent imaging: Linking MR acquisition and processing</td>
</tr>
<tr>
<td>CTK-MICCAI 2013</td>
</tr>
<tr>
<td>Common architecture for algorithm development and deployment</td>
</tr>
<tr>
<td>SATA ’13</td>
</tr>
<tr>
<td>MICCAI Challenge Workshop on Segmentation: Algorithms, Theory and Applications</td>
</tr>
<tr>
<td>MRBrainS13</td>
</tr>
<tr>
<td>MICCAI Grand Challenge on MR Brain Image Segmentation</td>
</tr>
</tbody>
</table>
Foreword

Welcome to the MICCAI 2013 workshops, challenges and tutorials!

The 16th International Conference on Medical Image Computing and Computer Assisted Intervention, MICCAI 2013, will be held from September 22nd to 26th, 2013 in Nagoya, Japan. In addition to the three-day MICCAI main conference, the annual MICCAI event hosting satellite workshops, tutorials and challenges will be scheduled on September 22nd and 26th.

This year’s call for workshop, tutorial and challenge proposals recorded 30 workshop/challenge proposals within 4 half-day proposals and 7 tutorial proposals within 4 half-day proposals. These proposals were independently reviewed by the chair team who eliminate conflict of interest. The chair team utilized several criteria to select the submitted workshops, tutorials and challenges. Workshop proposals were reviewed under whether or not workshops emphasize open problems addressed in the MICCAI community. The purpose of workshops is to provide a comprehensive forum on topics that might be partially explored during the main conference. On the other hand, tutorial proposals were considered if and only if the proposed tutorials could provide educational material for training new professionals including students, clinicians and researchers. The chair team also emphasizes tutorials on dealing with an existing sub-discipline of MICCAI with known material, approaches and open problems. Moreover, challenge proposals were determined by their interaction and encouragement in problem solving. Although all submitted proposals were very attractive, the chair team primarily selected 21 workshops, 6 tutorials and 5 challenges within one challenge being hosted at a workshop. After consulting with the workshop, tutorials and challenge organizers, the chair team eventually included 21 workshops, 5 tutorials and 6 challenges in this program. Basically, workshops and challenges follow a single stream of oral presentation within significant time for questions and discussion. They also involve panel and poster sessions. Tutorials will be presented by lectures that are involved with sufficient discussion.

We thank all workshop, tutorial and challenge organizers for their hard work and effort in making such a comprehensive and unique program available. We hope that you will enjoy this program of MICCAI 2013 Workshops, Challenges and Tutorials. We look forward to your continuing support, contributions and participation in future MICCAI conferences.

Hongen Liao
Akinobu Shimizu
Pierre Jannin
Simon Warfield

MICCAI 2013 Workshop Chair and Co-Chairs
General Information

Registration for all workshop, challenge and tutorial takes place at the Toyoda Auditorium ground floor. Workshops, challenges and tutorials will be held in Integrated Building (IB) including IB Lecture Hall and rooms IB011 to IB015, EcoTopia Science (ES) building with rooms ES021 to ES025 and rooms ES033 to ES035, and the second floor of Noyori Conference Hall. Lunch and coffee will be provided at all locations. IB, ES building, and Noyori Conference Hall are a 5-minute walk from the Toyoda Auditorium.

Registration Desk Opening Hours:
Registration desk is located at Toyoda Auditorium.

Sunday, September, 22 2013  7:30 - 19:00
Monday, September, 23  2013  7:30 - 18:00
Tuesday, September, 24  2013  8:00 - 18:00
Wednesday, September, 25  2013  8:00 - 18:00
Thursday, September, 26  2013  8:00 - 16:00

Delegate Badge
A name badge will be provided with your registration documents on site. Please wear your delegate badge at all times. All entrances to conference, workshops, exhibition halls and social events are manned by ushers. Only MICCAI2013 participants wearing an appropriate official delegate badge will be allowed to access the conference site and to attend the scientific and social programs.

Internet Access
Participants have two options to assess wireless internet available in Nagoya University as follows:

・NUWNET: You could assess the university-wide internet access service “nuwnet” by an issued guest account, which will be valid until September 26, 2013. You will also receive the Nagoya University Internet Security Guideline in your registration kit. Please read this guideline carefully before your internet access. The service set identification (SSID) is either “nuwnet” or “nuwnet1x”. Please use either SSID “nuwnet (5GHz)” or “nuwnet1x (5GHz)” if you are in the IB place.

・EDUROAM: Nagoya University is a member of the Eduroam Network. You could connect your WiFi-enabled devices to the Eduroam Internet by your own eduroam account that you may obtain from your university. Please also keep in mind that some areas in Nagoya University provide the eduroam service using 5GHz band (IEEE 802. 11a) in addition to 2.4GHz band service (IEEE 802.11g).

Poster Presentation
Workshop posters in IB building will be set up close to their assigned workshop rooms. The posters settled up in ES building will be placed in a passageway on the 2nd floor. The posters scheduled in Noyori Conference Hall will be located in passageways of the ground floor. Posters should be mounted on the workshop day from 8:30 and removed before 18:00. Please notice that all unremoved posters will be discarded after the workshop day. Please also make sure your poster size adhered to Standard A0 (841 mm in width, 1189 mm in height) that you should strictly follow in preparing your
posters. The conference will provide materials for mounting your posters.

**Lunch and Coffee Breaks**
Lunch and Coffee are included in registration and are distributed at each building.

**Oral Presentation**
Please follow the guideline for each workshop, tutorial and challenge.
MICCAI 2013 Satellite Events Organization

General Chair and Co-Chair
Kensaku Mori (Nagoya University, Japan)
Ichiro Sakuma (The University of Tokyo, Japan)

Workshops, Tutorials and Challenges Chair and Co-Chairs
Hongen Liao, Tsinghua University, China
Akinobu Shimizu, Tokyo University of Agriculture and Technology, Japan
Pierre Jannin, Université de Rennes 1, France
Simon Warfield, Boston Children’s Hospital, Harvard, USA

Workshops / Tutorials / Challenges Organizers
Brian B. Avants
Stephen Aylward
Miguel González Ballester
Simone Balocco
Reinhard R. Beichel
Geert Jan Biessels
Nicolas Bloch
Stefan Bohn
Oliver Burgert
Oscar Camara
Laurent Chauvin
Kiyoyuki Chinzei
Larry Clarke
Matt Clarkson
Marleen de Bruijne
Stefanie Demirci
Rachid Deriche
Maxime Descoteaux
Klaus Drechsler
Stanley Durrleman
Ayman El-Baz
Andinet Enquobahrie
Andinet Enquobahrie
Marius Erdt
Aly A. Farag
Keyvan Farahani
Tom Fletcher
David J. Foran
John Freymann
Fei Gao
Carlo Gatta
Bogdan Georgescu
Guido Gerig
Elizabeth Gerstner
Stamatia Giannarou
Georgy Gimel'farb
Alexandra Golby
Hayit Greenspan
Gregory D. Hager
Nobuhiko Hata
John Hipwell
Heng Huang
Henkjan Huisman
Hiroshi Iseki
Carl Jaffe
Pierre Jannin
Sarang Joshi
Sven Kasbus
Jayashree Kalpathy-Cramer
Nico Karssemeijer
Peter Kazanzides
Michael Kelm
Ron Kikinis
Boklye Kim
Atilla P. Kiraly
Justin Kirby
Takayuki Kitasaka
Tobias Klinder
Despina Kontos
Jan Martin Kuhnigk
Hugo Kuijf
Rajesh Kumar
Bennett Landman
Georg Langs
Su-Lin Lee
Joshua A. Levine
Shuo Li
Hongen Liao
Marius George Linguraru
Cristian Linte
Tianming Liu
Xiongbiao Luo
Anant Madabhushi
Tommaso Mansi
Anne L Martel
Ken Masamune
Ken Masamune
Jamie R. McClelland
Adriënnne Mendrik
Bjoern Menze
Charles R. Meyer
Karol Miller
Albert Montillo
Henning Mueller
Arya Nabavi
Martyn Nash
Gemma Nedjati-Gilani
Thomas Neumuth
Poul M.F. Nielsen
Mads Nielsen
Marco Nolden
Lauren O’Donnell
Cristina Oyarzun Laura
Nicolas Padoy
Eleftheria Panagiotaki
Rasmus R. Paulsen
Xavier Pennec
Terry Peters
Steve Pieper
Workshop Publicity Chair and Co-Chairs
Xiongbiao Luo (Nagoya University)
Masahiro Oda (Nagoya University)
Yoshihiko Nakamura (Nagoya University)

Workshops / Tutorials / Challenges Organizers
Carlo Pierpaoli                Nikolaos Stathonikos            Koen Vincken
Josien P. W. Pluim            Colin Studholme                   Sandrine Voros
Mihaela Pop                   Martin Styner                        Fei Wang
Sonia Pujol                   Kenji Suzuki                        Simon Warfield
Sonia Pujol                   Takashi Suzuki                     Simon Warfield
Mauricio Reyes                Tanveer Syeda-Mahmood              William Wells
Kawal Rhode                   Raphael Sznitman                    William Wells
Rogerio Richa                 GeirArne Tangen                    Stefan Wesarg
Simon Rit                     JoaoManuel R. S. Tavares              Carl-Fredrik Westin
Daniel Rueckert               Bertrand Thirion                    Adam Wittek
Mirabela Rusu                  Zhuowen Tu                          Pingkun Yan
Joel H. Saltz                 Paul J. van Diest                   Guang-Zhong Yang
Julia Schnabel                 Eva van Rikxoort                    Lin Yang
Thomas Schultz                 Michael Vannier                   Jianhua Yao
Maxime Sermesant              Gael Varoquaux                     Pew-Thian Yap
Raj Shekhar                   Archana Venkataraman                Hiro Yoshida
Dinggang Shen                 Ragini Verma                        Alistair Young
Li Shen                       Mitko Veta                          Sascha Zelzer
Kuangyu Shi                   Max Viergever                      Yongjie Zhang
Stefan Sommer                 Max A. Viergever                   Guoyan Zheng
Program of MICCAI 2013
Workshops, Challenges and Tutorials

September 22
4th International Workshop on Machine Learning in Medical Imaging

http://mlmi2013.web.unc.edu/
Organizers: Dinggang Shen, Pingkun Yan, Kenji Suzuki, Fei Wang

08:30 - 08:45 Opening Remarks
08:45 - 10:00 Morning Session 1: Plenary Talk
   Basics of Bayesian Modeling in Machine Learning
   Naonori Ueda
10:00 - 10:30 Coffee break
10:30 - 12:00 Morning Session 2: Image Segmentation and Registration
   Session Chair: TBD
   Unsupervised Deep Learning for Hippocampus Segmentation in 7.0 Tesla MR Images
   Minjeong Kim, Guorong Wu, Dinggang Shen
   Improving probabilistic image registration via reinforcement learning and uncertainty evaluation
   Tayebeh Lotfi Mahyari, Lisa Tang, Shawn Andrews, Ghassan Hamarneh
   Patch-based Segmentation without Registration: Application to Knee MRI
   Zehan Wang, Claire Donoghue, Daniel Rueckert
   A unified approach to shape model fitting and non-rigid registration
   Marcel Luethi, Christoph Jud, Thomas Vetter
   Decision Forests with Spatio-temporal Features for Graph-based Tumor Segmentation in 4D Lung CT
   Hamidreza Mirzaei, Lisa Tang, Ghassan Hamarneh, Rene Werner
12:00 - 13:30 Lunch & Posters
   Learning-boosted Label Fusion for Multi-atlas Auto-Segmentation
   Xiao Han
   Volumetric Segmentation of Key Fetal Brain Structures in 3D Ultrasound
   Remi Cuingnet, Raffaele Napolitano, David Roundhill, Aris Papageorghiou, Roberto Ardon, J Alison Noble
   A New Algorithm of Electronic Cleansing for Weak Faecal-Tagging CT Colonography
   Le Lu, Bing Jian, Dijia Wu
   A Transfer-Learning Approach to Image Segmentation Across Scanners by Maximizing Distribution Similarity
   Annegreet Van Opbroek, Arfan Ikram, Meike Vernooij, Marleen De Bruijne
   fMRI Analysis with Sparse Weisfeiler-Lehman Graph Statistics
   Katerina Gkirtzou, Jean Honorio, Rita Goldstein, Dimitris Samaras, Matthew Blaschko
Multi-task Sparse Classifier for Diagnosis of MCI Conversion to AD with Longitudinal MR images
Manhua Liu, Heung-II Suk, Dinggang Shen

Sparse Multimodal Manifold-regularized Transfer Learning for MCI Conversion Prediction
Bo Cheng, Daoqiang Zhang, Biao Jie, Dinggang Shen

Flow-based Stereovision Reconstruction
Songbai Ji, Xiaoyao Fan, Alex Hartov, David Roberts, Keith Paulsen

Discriminative Group Sparse Representation for Mild Cognitive Impairment Classification
Heung-II Suk, Chong-Yaw Wee, Dinggang Shen

Temporally Dynamic Resting-State Functional Connectivity Networks for Early MCI Identification
Chong-Yaw Wee, Sen Yang, Pew-Thian Yap, Dinggang Shen

An Improved Optimization Method for the Relevance Voxel Machine
Melanie Ganz, Mert Sabuncu, Koen Van Leemput

Disentanglement of Session and Plasticity Effects in Longitudinal fMRI Studies
Vittorio Iacovella, Paolo Avesani, Gabriele Miceli

Identification of Alzheimer’s Disease from Incomplete Multimodal Dataset via Matrix Shrinkage and Completion
KimHan Thung, Chong-Yaw Wee, Pew-Thian Yap, Dinggang Shen

Augmenting Auto-context with Global Geometric Features for Spinal Cord Segmentation
Jeremy Kawahara, Chris McIntosh, Roger Tam, Ghassan Hamarneh

Large-Scale Manifold Learning Using an Adaptive Sparse Neighbor Selection Approach for Brain Tumor Progression Prediction
Loc Tran

Ensemble Universum SVM Learning for Multimodal Classification of Alzheimer’s Disease
Xiaoke Hao, Daoqiang Zhang

Joint Sparse Coding Spatial Pyramid Matching For Classification of Color Blood Cell Image
Jun Shi, Yin Cai

13:30 - 15:00 Afternoon Session 1: Computer-aided Detection/Diagnosis
Session Chair: TBD

Integrating Multiple Network Properties for MCI Identification
Biao Jie, Daoqiang Zhang, Chong-Yaw Wee, Heung-II Suk, Dinggang Shen

Fully Automatic Detection of Carotid Artery from Volumetric Ultrasound Images Using Anatomical Position Dependent LBP Features
Fumi Kawai, Keisuke Hayata, Jun Ohmiya, Satoshi Kondo, Kiyoko Ishikawa, Masahiro Yamamoto

Thickness NETwork (ThickNet) Features for the Detection of Prodromal AD
Pradeep Reddy Raamana, Lei Wang, Mirza Faisal Beg
Patient-Specific Manifold Embedding of Multispectral Images using Kernel Optimization
Veronika Zimmer, Roger Fonolla, Karim Lekadir, Gemma Piella, Corné Hoogendoorn, Alejandro Frangi

A 2.5D Colon Wall Flattening Model for CT-based Virtual Colonoscopy
Huafeng Wang, Xinfeng Gu, Jerome Liang, Lihong Li

15:00 - 15:30 Coffee break

15:30 - 17:00 Afternoon Session 2: Classification/Prediction
Session Chair: TBD

A Bayesian Algorithm for Image-based Time-to-event Prediction
Mert Sabuncu

Metric Space Structures for Computational Anatomy
Jianqiao Feng, Xiaoying Tang, Minh Tang, Carey Priebe, Michael Miller

On Feature Relevance in Image-based Prediction Models: An Empirical Study
Ender Konuloglu, Melanie Ganz, Koen Van Leemput, Mert Sabuncu

HEp-2 Cell Image Classification: A Comparative Analysis
Praful Agrawal, Mayank Vatsa, Richa Sing

MRI based markers for neuromuscular disease classification
Katerina Gkirtzou, Matthew Blaschko, Aristeidis Sotiras, Thibault Varacca, Gauillame Bassez, Jean Francois Deux, Alain Rahmouni, Nikos Paragios

17:00 - 17:15 Closing remarks
**Computational Biomechanics for Medicine VIII**

http://school.mech.uwa.edu.au/CBM2013/
Organizers: Karol Miller, Adam Wittek, Poul M.F. Nielsen

<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-09:10</td>
<td>Opening remarks</td>
<td>Karol Miller</td>
</tr>
<tr>
<td>09:10-12:30</td>
<td><strong>Session 1:</strong> Computational Biomechanics of Soft Organs</td>
<td></td>
</tr>
<tr>
<td>09:10-10:00</td>
<td><strong>Keynote 1:</strong> The barbarians are at the gates: Why computational biomechanics?</td>
<td>Gabor Fichtinger</td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Modeling Three Dimensional Avascular Tumor Growth</td>
<td>Sachin Man Bajimaya Shrestha</td>
</tr>
<tr>
<td>10:30-11:00</td>
<td><strong>Coffee Break</strong></td>
<td></td>
</tr>
<tr>
<td>11:00-11:30</td>
<td>Whole-Body Image Registration Using Patient Specific Non-linear Finite Element Model</td>
<td>Mao Li</td>
</tr>
<tr>
<td>11:30-12:00</td>
<td>From Detection to Rupture: A Serial Computational Fluid Dynamics Study of a Rapidly-Expanding, Patient Specific, Ruptured Abdominal Aortic Aneurysm</td>
<td>Barry Doyle</td>
</tr>
<tr>
<td>12:00-12:30</td>
<td>Meshless Elasticity Model and Contact Mechanics-based Verification Technique.</td>
<td>Rifat Aras</td>
</tr>
<tr>
<td>12:30-14:10</td>
<td><strong>Lunch</strong></td>
<td></td>
</tr>
<tr>
<td>14:10-17:30</td>
<td><strong>Session 2:</strong> Musculoskeletal System and Injury Biomechanics</td>
<td></td>
</tr>
<tr>
<td>14:10-15:00</td>
<td><strong>Keynote 2:</strong> Small Computations in OR</td>
<td>Kiyoyuki Chinzei</td>
</tr>
<tr>
<td>15:00-15:30</td>
<td>Hip, Knee and Ankle Joint Forces in Healthy Weight, Overweight and Obese Individuals During Walking</td>
<td>Brooke A Stanford</td>
</tr>
<tr>
<td>15:30-16:00</td>
<td><strong>Coffee Break</strong></td>
<td></td>
</tr>
<tr>
<td>16:00-16:30</td>
<td>Modelling the Tumour Growth along a Complex Vasculature Using Cellular Automata</td>
<td>Nathan Deacon</td>
</tr>
<tr>
<td>16:30-17:30</td>
<td><strong>Panel discussion on challenges for computational biomechanics for medicine and closure (led by Karol Miller)</strong></td>
<td>(led by Karol Miller)</td>
</tr>
</tbody>
</table>
4th MICCAI workshop on Mathematical Foundations of Computational Anatomy

http://www-sop.inria.fr/asclepios/events/MFCA13/

Organizers: Xavier Pennec, Sarang Joshi, Mads Nielsen, Tom Fletcher, Stanley Durrleman, Stefan Sommer

08:30 - 10:00 Oral Session 1: LDDMM and scale

08:30 - 08:40 Welcome announcements
Workshop chairs

08:40 - 09:20 Riemannian metrics for statistics on shapes: Parallel transport and scale invariance
Marc Niethammer and Francois-Xavier Vialard

09:20 - 10:00 Symmetries in LDDMM with higher-order momentum distributions
Henry O. Jacobs

10:00 - 10:30 Coffee break

10:30 - 12:30 Oral Session 2: Brain Morphometry

10:30 - 11:10 Combining Thickness Information with Surface Tensor-based Morphometry for the 3D Statistical Analysis of the Corpus Callosum
Liang Xu, Olivier Collignon, Gang Wang, Yue Kang, Franco Leporée, Jie Shi, Yi Lao, Anand Joshi, Natasha Leporée, and Yalin Wang

11:10 - 11:50 A right-invariant Riemannian distance on GL+(n) and hypothesis testing on Jacobian matrices
Ernesto Zacur, Matias Bossa, and Salvador Olmos

11:50 - 12:30 Stratified Voxel-Based Morphometry (sVBM)
M. Jorge Cardoso, Ivor Simpson, and Sebastien Ourselin

12:30 - 13:30 Lunch

13:30 - 15:00 Session 3: Shape and Image Registration

13:30 - 14:10 Surface Shape Matching and Analysis using Intrinsic Coordinate Parameterizations
Shantanu H. Joshi, Jie Shi, Yalin Wang, Katherine L. Narr, Arthur W. Toga, and Roger P. Woods

14:10 - 14:50 A Relaxed Problem of Registration Based on the Saint Venant- Kirchhoff Material Stored Energy for the Mapping of Mouse Brain Gene Expression Data to a Neuroanatomical Mouse Atlas
Ratiba Derfoul and Carole Le Guyader

15:00 - 15:30 Coffee break

15:30 - 17:20 Session 4: Short Orals

15:30 - 15:55 Computing Diffeomorphic Paths with Applications to Cardiac Motion Analysis
Dohyung Seo, Jeffrey Ho, Jay H. Traverse, John Forder, and Baba C. Vemuri
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:55 - 16:20</td>
<td>The Shape Collapse Problem in Image Registration.</td>
<td>Oguz C. Durumeric, Ipek Oguz, and Gary E. Christensen</td>
</tr>
<tr>
<td>16:20 - 16:45</td>
<td>Sparse Gaussian graphical model of spatial distribution of anatomical landmarks - whole torso model building with training datasets of partial imaging ranges</td>
<td>Shouhei Hanaoka, Yoshitaka Masutani, Mitsutaka Nemoto, Yukihiro Nomura, Soichiro Miki, Takeharu Yoshikawa, Naoto Hayashi, and Kuni Ohtomo</td>
</tr>
<tr>
<td>16:45 - 17:10</td>
<td>Cortical Shape Analysis using the Anisotropic Global Point Signature</td>
<td>Anand A Joshi, Syed Ashrafulla, David W Shattuck, Hanna Damasio, and Richard M Leahy</td>
</tr>
<tr>
<td>17:10 - 17:20</td>
<td><strong>Concluding remarks</strong></td>
<td>Workshop chairs</td>
</tr>
</tbody>
</table>
Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging

http://miccai-clip.org/2013/index.html

Organizers (alphabetically): Klaus Drechsler, Marius Erdt, Miguel González Ballester, Marius George Linguraru, Cristina Oyarzun Laura, Raj Shekhar, Stefan Wesarg

09:00 - 09:15 Opening Remarks

09:15 - 10:00 Keynote 1
What is the essential information in Image-Guided Minimally Invasive Surgery?
Makoto Hashizume

10:00 - 10:30 Short Orals 1
First Clinical Experience with BMD Assessment in Vertebrae Using Dual-energy CT
Stefan Wesarg, Julian Wichmann, Christian Booz, Konstantinos Kafchitsas, M. Fawad Khan
Path Planning for Multi-Port Lateral Skull Base Surgery based on First Clinical Experiences
Meike Becker, Stefan Hansen, Stefan Wesarg, Georgios Sakas
Automated Kidney Detection and Segmentation in 3D Ultrasound
Matthias Noll, Li Xin
Placement of external ventricular drains using an average model
Ingerid Reinertsen, Asgeir Jakola, Ole Solheim, Frank Lindseth, Tormod Selbekk, Geirmund Unsgård
Prototype Design and Phantom Evaluation of a Device for Co-Registered MRI/TRUS Imaging of the Prostate
Andriy Fedorov, Sang-Eun Song, Tina Kapur, Robert Owen, Emily Neubauer Sugar, Paul Nguyen, William Wells III, Clare Tempany
Surgical Workflow Analysis, Design and Development of an Image-Based Navigation System for Endoscopic Interventions
Frederic Perez, Sergio Vera, Gloria Fernández-Esparrach, Henry Cordova, Raul San Jose, Javier Herrero, Miguel Ángel González Ballester

10:30 - 11:00 Coffee Break / Poster Session

11:00 - 12:00 Long Orals 1
Modelling Smooth Intensity Changes in the Putamen for Diagnosis of Sporadic CJD
Samira Bouyagoub, Iulia Cimpan, Ali Hojjat, Alfred Kume, Yee Mah, Alan Colchester
Statistical analysis of relative pose of the thalamus in preterm neonates
Yi Lao, Jie Shi, Yalin Wang, Rafeal Ceschin, Darryl Hwang, M.D. Nelson, Ashok Panigrahy, Natasha Lepore
Structure-guided Nonrigid registration of CT-MR Pelvis Scans with large deformations in MR-based Image Guided Radiation Therapy
David Rivest-Henault, Peter Greer, Jurgen Fripp, Jason Dowling
Automatic Detection of Misalignment in Rigid 3D-2D Registration
Uroš Mitrović, Žiga Špiclin, Boštjan Likar, Franjo Pernus

12:00 - 13:00  Lunch Break

13:00 - 13:45  Keynote 2
Image-based orthopaedic surgery
Nobuhiko Sugano

13:45 - 15:00  Long Orals 2
On-line lumen centre detection in gastrointestinal and respiratory endoscopy
Carles Sanchez, Jorge Bernal, F.Javier Sanchez, Debora Gil
Towards A Clinical Stereoscopic Augmented Reality System for Laparoscopic Surgery
Xin Kang, Jihun Oh, Emmanuel Wilson, Timothy Kane, Craig Peters, Raj Shekhar
Landmark-based Surgical Navigation
Adrian Schneider, Christian Baumberger, Mathias Griessen, Simon Pezold, Jörg Beinemann, Philipp Jürgens, Philippe C. Cattin
Image-based bronchoscopy navigation system based on CT and C-arm fluoroscopy
Teena Steger, Klaus Drechsler, Stefan Wesarg
Inter-slice Correspondence for 2D Ultrasound-guided Procedures
Matthew Toews, Alexandra Golby, William Wells III

15:00 - 15:30  Coffee Break / Poster Session / Best Paper Award Voting

15:30 - 16:30  Long Orals 3
MR Enterography Image Fusion in Small Bowel Analysis
Juan Cerrolaza, Nabile M. Safdar, Raymond W. Sze, Marius George Linguraru
Forming the interface between doctor and designing engineer
Christine Schoene, Ralph Stelzer, Philipp Sembderner
Automatic Optimization of Depth Electrode Trajectory Planning
Rina Zelmann, Silvain Beriault, Kelvin Mok, Claire Haegelen, Jeffery A. Hall, Andre Olivier, G. Bruce Pike, D. Louis Collins
Automatic Markov Random Field Segmentation of Susceptibility-Weighted MR Venography
Silvain Beriault, Marika Archambault-Wallenburg, Abbas F. Sadikot, D. Louis Collins, G. Bruce Pike

16:30 - 17:00  Closing Discussion / Best Paper Awards
**CMR’13 (08:45 – 17:15) – Room IB015**

**MICCAI 2013 Workshop on Computational Diffusion MRI**

http://cmic.cs.ucl.ac.uk/cdmri13/
Organizers: Gemma Nadjati-Gilani, Eleftheria Panagiotaki, Lauren O’Donnell, Thomas Schultz

<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:45 - 09:00</td>
<td>Welcome and introduction</td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td>Challenge: White Matter Model Challenge</td>
</tr>
<tr>
<td>09:00 - 09:07</td>
<td>Benoit Scherrer</td>
</tr>
<tr>
<td>09:07 - 09:14</td>
<td>Xinghua Zhu</td>
</tr>
<tr>
<td>09:14 - 09:21</td>
<td>Mohammad Alipoor</td>
</tr>
<tr>
<td>09:21 - 09:28</td>
<td>Lin Mu</td>
</tr>
<tr>
<td>09:28 - 09:35</td>
<td>Torben Schneider</td>
</tr>
<tr>
<td>09:35 - 09:42</td>
<td>Uran Ferizi</td>
</tr>
<tr>
<td>09:42 - 10:00</td>
<td>Results &amp; discussion</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td>Coffee Break and Posters</td>
</tr>
<tr>
<td>10:30 - 11:30</td>
<td>Keynote Lecture I</td>
</tr>
<tr>
<td></td>
<td>Diffusion MRI: What can we retrieve from the signal?</td>
</tr>
<tr>
<td></td>
<td>Denis Le Bihan</td>
</tr>
<tr>
<td>11:30 - 12:30</td>
<td>Keynote Lecture II</td>
</tr>
<tr>
<td></td>
<td>Multi-atlas multi-contrast brain parcellation based on diffusion tensor imaging and application to individualized anatomical phenotype analysis</td>
</tr>
<tr>
<td></td>
<td>Susumu Mori</td>
</tr>
<tr>
<td>12:30 - 13:30</td>
<td>Lunch and Posters</td>
</tr>
<tr>
<td>13:30 - 14:15</td>
<td>Oral Session I: High angular methods</td>
</tr>
<tr>
<td></td>
<td>Non-Negative Spherical Deconvolution (NNSD) for Fiber Orientation Distribution Function Estimation</td>
</tr>
<tr>
<td></td>
<td>Jian Cheng et al.</td>
</tr>
<tr>
<td></td>
<td>Diffusion Propagator Estimation Using Radial Basis Functions</td>
</tr>
<tr>
<td></td>
<td>Yogesh Rathi et al.</td>
</tr>
<tr>
<td>14:15 - 15:00</td>
<td>Oral Session II: Group studies &amp; statistical analysis</td>
</tr>
<tr>
<td></td>
<td>Statistical Analysis of White Matter Integrity for the Clinical Study of Specific Language Impairment in Children</td>
</tr>
<tr>
<td></td>
<td>Emmanuel Vallée et al.</td>
</tr>
<tr>
<td></td>
<td>Estimating Uncertainty in White Matter Tractography Using Wild Non-Local Bootstrap</td>
</tr>
<tr>
<td></td>
<td>Pew-Thian Yap et al.</td>
</tr>
<tr>
<td>15:00 - 15:30</td>
<td>Coffee Break and Posters</td>
</tr>
</tbody>
</table>
15:30 - 17:00 Oral Session III: Diffusion Modelling and Experimental Design
Fiberfox: An extensible system for generating realistic white matter software phantoms
Peter Neher et al.

Uncertainty in Tractography via Tract Confidence Regions
Colin Brown et al.

A Novel Riemannian Metric for Geodesic Tractography in DTI
Andrea Fuster et al.

Groupwise Deformable Registration of Fiber Track Sets using Track Orientation Distributions
Daan Christiaens et al.

17:00 - 17:15 Closing Remarks

Posters

1. Choosing a Tractography Algorithm: On the Effects of Measurement Noise
   Andre Reichenbach et al.

2. Comparing Simultaneous Multi-slice Diffusion Acquisitions
   Yogesh Rathi et al.

3. The Diffusion Dictionary in the Human Brain is Short: Rotation Invariant Learning of Basis Functions
   Marco Reisert et al.

4. Effect of Data Acquisition and Analysis Method on Fiber Orientation Estimation in Diffusion MRI
   Bryce Wilkins et al.

5. Groupwise registration for correcting subject motion and eddy current distortions in diffusion MRI using a PCA based dissimilarity metric
   Wyke Huizinga et al.

6. Fiber Based Comparison of Whole Brain Tractographies with Application to Amyotrophic Lateral Sclerosis
   Gali Zimmerman-Moreno et al.

7. A Framework for ODF Inference by using Fiber Tract Adaptive MPG Selection
   Hidekata Hontani et al.

8. A quantitative evaluation of errors induced by reduced field-of-view in diffusion tensor imaging
   Jan Hering et al.

9. Model-based super-resolution of diffusion MRI
   Alexandra Tobisch et al.
The 2nd International MICCAI-Workshop on Computer Assisted Stenting

http://campar.in.tum.de/STENT2013/WebHome
Organizers: Simone Balocco, Carlo Gatta, Stefanie Demirci, Geir Arne Tangen, Su-Lin Lee

13:30 - 13:45  Welcome and Workshop Introduction
13.45 - 15:15  Oral Session 1
                  Chairs: Balocco Simone / Su-lin Lee

Automatic Flow Diverter Detection in Cerebral C-arm CT Images (Submission)
Ying Zhu et al.

Investigation of Hemodynamics in a Large Unruptured Intracranial Aneurysm Using Computational Fluid Dynamics Technique (Submission)
Wen Liu, Lin Shi, Tianfu Wang, Defeng Wang and Simon Yu

Development of a System for Endovascular Planning of AAA Interventions (Submission)
Ivan Macia, Jon Haltz Legarreta, Sabarinath Rajasekharan, Elena Muñoz, Oscar Hernandez, Mariano De Blas Bravo, Jose Maria Egaña and Manuel Graña

Learning-based Modeling of Endovascular Navigation for Collaborative Robotic Catheterization (Invited)
H. Rafii-Tari, J. Liu, S.-L. Lee, G.-Z. Yang

15:15 - 15.30  Break
15:30 - 17.00  Oral Session 2
                  Chairs: Carlo Gatta / Geir Arne Tangen

Stent shape estimation through a comprehensive interpretation of ivus image (Invited)
Francesco Ciompi, Simone Balocco, Carles Caus, Josepa Mauri, Petia Radeva

3D/3D Registration of Coronary CTA and Biplane XA Reconstructions for Improved Image Guidance (Submission)
Gerardo Dibildox, Mark Punt, Jean-Paul Aben, Carl Schultz, Wiro Niessen and Theo van Walsum

Visualization of stent-graft placement in deformed vascular structure in EVAR procedure (Submission)
Aurélien Duménil, Adrien Kaladjji, Juliette Gindre, Miguel Castro, Michel Rochette, Cemil Göksu, Antoine Lucas and Pascal Haigron

Augmented Reality Guidance System for Transcatheter Aortic Valve Implantation (Submission)
Jonathan McLeod, Maria Currie, John Moore and Terry Peters
Mathematical Methods for Brain Connectivity

http://groups.csail.mit.edu/vision/mmbc2013/

Organizers: Archana Venkataraman, Bertrand Thirion, Gaël Varoquaux, Maxime Descoteaux, Rachid Deriche, Ragini Verma

08:45 - 09:00 Opening Remarks
Archana Venkataraman

09:00 - 09:45 Keynote Lecture I
Modeling of Early Brain Development from Longitudinal Diffusion MRI for Assessment of Growth Trajectories
Guido Gerig

09:45 - 10:15 Oral Session I - Properties of Structural Connectivity
Chair: Yogesh Rathi

Disrupted Brain Connectivity in Alzheimer’s Disease: Effects of Network Thresholding
Madelaine Daianu et al.

Rich Club Analysis of Structural Brain Connectivity at 7 Tesla versus 3 Tesla
Emily Dennis et al.

10:15 - 10:45 Coffee Break

10:45 - 11:30 Keynote Lecture II
Organization of the Human Brain Estimated by Intrinsic Functional Connectivity
Thomas Yeo

11:30 - 12:15 Oral Session II - Multimodal and Population Analysis
Chair: Bertrand Thirion

Coupled Intrinsic Connectivity: A Principled Method for Exploratory Analysis of Paired Data
Dustin Scheinost et al.

Power Estimates for Voxel-Based Genetic Association Studies using Diffusion Imaging
Neda Jahanshad et al.

Global Changes in the Connectome in Autism Spectrum Diseases
Caspar Jonas Goch et al.

12:15 - 12:30 Group Discussion
Gaël Varoquaux

12:30 - 14:15 Lunch & Poster Session

14:15 - 15:00 Oral Session III - Statistical Analysis of dMRI (CDMRI 13)
Statistical Analysis of White Matter Integrity for the Clinical Study of Specific Language Impairment in Children
Emmanuel Vallée et al.
Estimating Uncertainty in White Matter Tractography Using Wild Non-Local Bootstrap
Pew-Thian Yap et al.

15:00 - 15:30 Coffee Break

15:30 - 17:00 Oral Session IV - Diffusion Modeling (CDMRI 13)
Fiberfox: An Extensible System for Generating Realistic White Matter Software Phantoms
Peter Neher et al.

Uncertainty in Tractography via Tract Confidence Regions
Colin Brown

A Novel Riemannian Metric for Geodesic Tractography in DTI
Andrea Fuster et al.

Groupwise Deformable Registration of Fiber Track Sets using Track Orientation Distributions
Daan Christiaens et al.
# Modeling and Monitoring of Computer Assisted Interventions

[http://twins.twmu.ac.jp/m2cai2013/](http://twins.twmu.ac.jp/m2cai2013/)

Organizers: Guang-Zhong Yang, Nicolas Padoy, Thomas Neumuth, Ken Masamune, Pierre Jannin, Hiroshi Iseki, Gregory D. Hager, Stamatia Giannarou, Takashi Suzuki

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 - 08:35</td>
<td>Opening Remarks</td>
</tr>
<tr>
<td>08:35 - 09:25</td>
<td>Invited Talk 1</td>
</tr>
<tr>
<td></td>
<td>Surgical Workflow Analysis: Perceptual and Cognitive Factors</td>
</tr>
<tr>
<td></td>
<td>Guang-Zhong Yang</td>
</tr>
<tr>
<td>09:25 - 09:50</td>
<td>Presentation 1</td>
</tr>
<tr>
<td></td>
<td>Hierarchical approach for low-level surgical activity recognition</td>
</tr>
<tr>
<td></td>
<td>Christian Meißner, et al.</td>
</tr>
<tr>
<td>09:50 - 10:00</td>
<td>Short Discussion</td>
</tr>
<tr>
<td>10:00 - 10:20</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:20 - 10:45</td>
<td>Presentation 2</td>
</tr>
<tr>
<td></td>
<td>Validation of a surgical process model regarding the robustness of missing sensor information”</td>
</tr>
<tr>
<td></td>
<td>Philipp Liebmann, et al.</td>
</tr>
<tr>
<td>10:45 - 11:10</td>
<td>Presentation 3</td>
</tr>
<tr>
<td></td>
<td>Intraoperative Voice Classification for Analysis of Cortical Mapping during Awake Surgery</td>
</tr>
<tr>
<td></td>
<td>Toshihiko Nishimura, et al.</td>
</tr>
<tr>
<td>11:10 - 11:35</td>
<td>Presentation 4</td>
</tr>
<tr>
<td></td>
<td>Automatic detection of electrical stimulation timing in operation videos of cortical mapping in awake brain surgery</td>
</tr>
<tr>
<td></td>
<td>Masanori Suganuma, et al.</td>
</tr>
<tr>
<td>11:35 - 12:25</td>
<td>Invited Talk 2</td>
</tr>
<tr>
<td></td>
<td>Workflow monitoring and room design by data gathering from a surgical room</td>
</tr>
<tr>
<td></td>
<td>Kiyoshi Izumi</td>
</tr>
<tr>
<td>12:25 - 12:30</td>
<td>Closing Remarks</td>
</tr>
</tbody>
</table>
5th International Workshop on Abdominal Imaging: Computational and Clinical Applications

http://www.abd-miccai.org/
Organizers: Hiro Yoshida, Simon Warfield, Michael Vannier

08:00 - 08:30 Registration
08:30 - 08:45 Opening Session (Moderators: Organizers)
08:45 - 09:15 Plenary Lecture 1 (Moderators: Hiro Yoshida)
Diffusion-weighted MRI analysis of Crohn’s disease
Simon Warfield

09:15 - 10:00 Colon and Other Gastrointestinal Tract - Crohn’s Disease
09:15 - 09:30 A model development pipeline for Crohn’s disease severity assessment from magnetic resonance images
Peter Schüffler
09:30 - 09:45 Spatially constrained incoherent motion (SCIM) model improves quantitative diffusion-weighted MRI analysis of Crohn’s disease patients
Onur Afacan
09:45 - 10:00 Self similarity image registration based on reorientation of the Hessian
Zhang Li

10:00 - 10:30 Coffee Break

10:30 - 12:30 Liver, Kidney, and Other Organs - Part 1
10:30 - 10:45 Free-Form registration involving disappearing structures: application to brachytherapy MRI
Floris Berendsen
10:45 - 11:00 Contour-based TVUS-MR image registration for mapping small endometrial implants
Amir Yavariabdi
11:00 - 11:15 Rigid registration of untracked freehand 2D ultrasound sweeps to 3D CT of liver tumours
Amalia Cifor
11:15 - 11:30 Fast renal cortex localization by combining generalized Hough transform and active appearance models
Dehui Xiang
11:30 - 11:45 3D surface reconstruction of organs using patient specific shape priors in robot-assisted laparoscopic surgery
Alborz Amir-Khalili
11:45 - 12:00 Multi-atlas and Gaussian mixture modeling based perirectal fat segmentation from CT images
Soumya Ghose
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Description</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 - 12:15</td>
<td>Selective search and sequential detection for standard plane localization in ultrasound</td>
<td>Dong Ni</td>
</tr>
<tr>
<td>12:15 - 12:30</td>
<td>Rib detection in 3D MRI using dynamic programming based on vesselness and ridgeness</td>
<td>Yolanda Noorda</td>
</tr>
<tr>
<td>12:30 - 13:30</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13:30 - 14:00</td>
<td><strong>Plenary Lecture 2</strong></td>
<td></td>
</tr>
<tr>
<td>13:30 - 14:00</td>
<td>Perfusion CT/MRI and their applications to liver and pancreatic diseases</td>
<td>Yoshihisa Tsujii</td>
</tr>
<tr>
<td>14:00 - 15:00</td>
<td><strong>Liver, Kidney, and Other Organs - Part 2</strong></td>
<td></td>
</tr>
<tr>
<td>14:00 - 14:15</td>
<td>Modeling and simulation of soft tissue deformation</td>
<td>Yuping Duan</td>
</tr>
<tr>
<td>14:15 - 14:30</td>
<td>A statistical shape model for multiple organs based on synthesized-based learning</td>
<td>Atsushi Saito</td>
</tr>
<tr>
<td>14:30 - 14:45</td>
<td>A generic, robust and fully-automatic workflow for 3D CT liver segmentation</td>
<td>Romane Gauriau</td>
</tr>
<tr>
<td>14:45 - 15:00</td>
<td>Tumor subtype-specific parameter optimization in a hybrid active surface model for hepatic tumor segmentation of 3D liver ultrasonograms</td>
<td>MyungHeun Lee</td>
</tr>
<tr>
<td>15:30 - 17:00</td>
<td><strong>Colon and Other Gastrointestinal Tract - Virtual Colonoscopy</strong></td>
<td></td>
</tr>
<tr>
<td>15:30 - 15:45</td>
<td>Registration of prone and supine CT colonography datasets with differing endoluminal distension</td>
<td>Holger Roth</td>
</tr>
<tr>
<td>15:45 - 16:00</td>
<td>Global colon geometric structure analysis based on geodesics and conformal flattening</td>
<td>Hao Peng</td>
</tr>
<tr>
<td>16:00 - 16:15</td>
<td>A classification-enhanced vote accumulation scheme for detecting colonic polyps</td>
<td>Suryakanth R Gurudu</td>
</tr>
<tr>
<td>16:15 - 16:30</td>
<td>A novel computer aided detection (CADe) scheme for colonic polyps based on the structure decomposition</td>
<td>Huafeng Wang</td>
</tr>
<tr>
<td>16:30 - 16:45</td>
<td>Computer-aided detection of non-polypoid flat lesions in CT colonography: observer performance study</td>
<td>Yasuji Ryu</td>
</tr>
<tr>
<td>16:45 - 17:00</td>
<td>Personalised estimation of the arterial input function for improved pharmacokinetic modelling of colorectal cancer using dceMRI</td>
<td>Benjamin Irving</td>
</tr>
<tr>
<td>17:00 - 17:05</td>
<td><strong>Closing Session</strong> (Moderators: Organizers)</td>
<td></td>
</tr>
</tbody>
</table>
**Poster Presentations**

**08:30 - 17:00 Colon and Other Gastrointestinal Tract - Poster**

Registration of temporally separated CT colonography cases
Holger Roth

Spatial correspondence between prone and supine CT colonography images: creating a reference standard
Thomas Hampshire

Application of synthetic sinogram based low-dose CT simulation and fold-preserving electronic cleansing technique for CT colonography
Chang Won Kim

Iterative reconstruction for ultra-low-dose laxative-free CT colonography
Synho Do

Computer-aided detection of colorectal lesions with super-resolution CT colonography: pilot evaluation
Janne Nappi

Improved colon navigation for efficient polyp detection in virtual colonoscopy
Marwa Ismail

**08:30 - 17:00 Liver, Kidney, and Other Organs - Poster**

Adaptive confidence regions of motion predictions from population exemplar models
Christine Tanner

Use of tracer kinetic model-driven biomarkers for monitoring antiangiogenic therapy of hepatocellular carcinoma in first-pass perfusion CT
Sang Ho Lee

Continuous-time flow-limited modeling by convolution area property and differentiation product rule in 4-phase liver dynamic contrast-enhanced CT
Sang Ho Lee

A survey of cervix segmentation methods in magnetic resonance images
Soumya Ghose

Multiphase liver registration from geodesic distance maps and biomechanical modelling
Jordan Bano
3rd International Workshop on Multimodal Brain Image Analysis

http://www.iu.edu/~mbia/

Organizers: Li Shen, Tianming Liu, Pew-Thian Yap, Heng Huang, Dinggang Shen, Carl-Fredrik Westin

08:30 - 08:45  Opening Remarks & Announcements

08:45 - 09:45  Keynote Speech
Joint modeling of anatomical and functional connectivity for population studies
Polina Golland

09:45 - 10:00  Invited Session (1 Talk)
Chair: TBD
Locally weighted multi-atlas construction
Junming Li, Yonggang Shi, Ivo D. Dinov, and Arthur W. Toga

10:00 - 10:30  Coffee Break

10:30 - 12:00  Oral Session 1 (6 Talks)
Chair: TBD
Assessing structural organization and functional interaction in gyral, sulcal and cortical networks
Xiaojin Li, Xintao Hu, Xi Jiang, Lei Guo, Junwei Han, and Tianming Liu
Quantification and analysis of large multimodal clinical image studies: application to stroke
Ramesh Sridharan, Adrian V. Dalca, Kaitlin M. Fitzpatrick, Lisa Cloonan, Allison Kanakis, Ona Wu, Karen L. Furie, Jonathan Rosand, Natalia S. Rost, and Polina Golland
Modeling 4D changes in pathological anatomy using domain adaptation: analysis of TBI imaging using a tumor database
Bo Wang, Marcel Prastawa, Avishek Saha, Suyash P. Awate, Andrei Irimia, Micah C. Chambers, Paul M. Vespa, John D. Van Horn, Valerio Pascucci, and Guido Gerig
Bi-modal non-rigid registration of brain MRI data based on deconvolution of joint statistics
David Pilutti, Maddalena Strumia, Stathis Hadjidemetriou
Atlas based intensity transformation of brain MR images
Snehashis Roy, Amod Jog, Aaron Carass, and Jerry L. Prince
Use of diffusion tensor images in glioma growth modeling for radiotherapy target delineation
Florian Dittmann, Björn Menze, Ender Konukoglu, and Jan Unkelbach

12:00 - 14:15  Lunch and Poster Session (including also Oral Papers, 24 in total)
Superpixel-based segmentation of glioblastoma multiforme from multimodal MR images
Po Su, Jianhua Yang, Hai Li, Linda Chi, Zhong Xue, and Stephen T. Wong
Mapping dynamic changes in ventricular volume onto baseline cortical surfaces in normal aging, MCI, and Alzheimer’s disease

Unsupervised fiber bundles registration using weighted measures geometric demons
Viviana Siless, Sergio Medina, Pierre Fillard, and Bertrand Thirion

Classification forests and Markov random field to segment chronic ischemic infarcts from multimodal MRI
Jhimli Mitra, Pierrick Bourgeat, Jurgen Fripp, Soumya Ghose, Stephen Rose, Olivier Salvado, Alan Connelly, Bruce Campbell, Susan Palmer, Gagan Sharma, Soren Christensen, Leeanne Carey, and the START Research Team

Registration of brain CT images to an MRI template for the purpose of lesion-symptom mapping
Hugo J. Kuifj, J. Matthijs Biesbroek, Max A. Viergever, Geert Jan Biessels, and Koen L. Vincken

A dynamical clustering model of brain connectivity inspired by the N-body problem

Cortical surface analysis of multi-contrast MR data to improve detection of cortical pathology in multiple sclerosis
Marika Archambault-Wallenburg, Douglas Arnold, Sridar Narayanan, G. Bruce Pike, and D. Louis Collins

PARP1 gene variation and microglial activity on [11C]PBR28 PET in older adults at risk for Alzheimer’s disease
Sungeun Kim, Kwangsik Nho, Shannon L. Risacher, Mark Inlow, Shanker Swaminathan, Karmen K. Yoder, Li Shen, John D. West, Brenna C. McDonald, Eileen F. Tallman, Gary D. Hutchins, James W. Fletcher, Martin R. Farlow, Bernardino Ghetti, and Andrew J. Saykin

A graph-based integration of multimodal brain imaging data for the detection of early mild cognitive impairment (E-MCI)
Dokyoon Kim, Sungeun Kim, Shannon L. Risacher, Li Shen, Marylyn D. Ritchie, Michael W. Weiner, Andrew J. Saykin, and Kwangsik Nho, for the Alzheimer’s Disease Neuroimaging Initiative (ADNI)

14:15 - 15:00 Invited Session (3 Talks)
Chair: TBD

Whole brain functional connectivity using multi-scale spatio-spectral random effects model
Hakmook Kang, Xue Yang, Frederick W Bryan, Christina M Tripp, and Bennett A. Landman

Modeling cognitive processes via multi-stage consistent functional response detection
Jinglei Lv, Dajiang Zhu, Xi Jiang, Kaiming Li, Xintao Hu, Junwei Han, Lei Guo, and Tianming Liu

Bivariate genome-wide association study of genetically correlated neuroimaging phenotypes from DTI and MRI through a Seemingly Unrelated Regression model
Neda Jahanshad, Priya Bhatt, Derrek P. Hibar, Julio E. Villalon, Talia M. Nir, Arthur W. Toga, Clifford R. Jack Jr., Matt A. Bernstein, Michael W. Weiner, the Alzheimer’s Disease Neuroimaging Initiative (ADNI), Katie L. McMahon, Greig I. de Zubicaray, Nicholas G. Martin, Margaret J. Wright, and Paul M. Thompson
15:00 - 15:30  Coffee Break

15:30 - 16:45  Oral Session 2 (5 Talks)
Chair: TBD

Network-guided sparse learning for predicting cognitive outcomes from MRI measures
Jingwen Yan, Heng Huang, Shannon L. Risacher, Sungeun Kim, Mark Inlow, Jason H. Moore, Andrew J. Saykin, and Li Shen, for the Alzheimer’s Disease Neuroimaging Initiative

A framework to compare tractography algorithms based on their performance in predicting functional networks
Fani Deligianni, Christopher A. Clark, and Jonathan D. Clayden

Multi-modal surface-based alignment of cortical areas using intra-cortical T1 contrast
Christine Lucas Tardif, Juliane Dinse, Andreas Schäfer, Robert Turner, and Pierre-Louis Bazin

A Heat Kernel based Cortical Thickness Estimation Algorithm
Gang Wang, Xiaofeng Zhang, Qingtang Su, Jiannong Chen, Lili Wang, Yunyan Ma, Qiming Liu, Liang Xu, Jie Shi, and Yalin Wang

A family of fast spherical registration algorithms for cortical shapes
Boris A. Gutman, Sarah K. Madsen, Arthur W. Toga, and Paul M. Thompson

16:45 - 17:00  Award announcement and closing remarks
The 6th International Workshop on Medical Imaging and Augmented Reality

http://www.miar.org/2013/
Organizers: Ken Masamune, Guoyan Zheng, Hongen Liao, Terry Peters, Cristian Linte

08:00 - 08:30 Registration, Speaker Check-in and Poster Setup
08:30 - 08:35 Welcome & Opening Remarks
08:35 - 09:20 Keynote Address:
Patient-based Augmented Reality and Bio-texture manufacturing for Minimally Invasive and Robotic Surgery
Maki Sugimoto

09:20 - 10:00 Oral Session I: Augmented Reality, Visualization and Simulation
An Augmented Reality Approach for Initializing 2D/3D Registration
Ren Hui Gong
Volume Visualization for Neurovascular Augmented Reality
Marta Kersten-Oertel

10:00 - 10:30 Coffee Break & Poster Viewing

10:30 - 12:10 Oral Session II: Image-guided Interventions: Planning,
Real-time Marker-free Patient Registration and Image-based Navigation Using Stereovision for Dental Surgery
Junchen Wang
Simultaneous Tracking, 3D Reconstruction and Deforming Point Detection for Stereoscope Guided Surgery
Bingxiong Lin
Planning of Middle Hepatic Vein-Guided Hemihepatectomy: Resection Pathway Construction and Optimization
Wenyu Chen
Real-time Wide-baseline Registration of the Uterus in Monocular Laparoscopic Videos
Toby Collins
Registration of Preoperative Liver Model for Laparoscopic Surgery from Intraoperative 3D Acquisition
Jordan Bano

12:10 - 12:30 Poster Teasers

12:30 - 13:30 Lunch & Poster Session
Simultaneous Tensor and Fiber Registration (STFR) for Diffusion Tensor Images of the Brain
Zhong Xue and Stephen TC Wong
Segmentation of 3D transesophageal echocardiograms by multi-cavity active shape model and gamma mixture model
Alexander Haak, Gonzalo Sanchez-Ferrero, Harriet Mulder, Hortense Kirisli, Nora Baka, Coert Metz, Stefan Klein, Ben Ren, Josien Pluim, Theo van Walsum, and Johan Bosch

Automatic and Real-time Identification of Breathing Pattern from Ultrasound Liver Images
Jiaze Wu, Yanling Chi, Cheng Li, Bien Soo Tan, London Lucien Ooi, Satheesh Ramamurthy and Jimin Liu

Hybrid Multimodal Deformable Registration with a Data-Driven Deformation Prior
Yongning Lu, Ying Sun, Rui Liao and Sim Heng Ong

Cascaded Shape Regression for Automatic Prostate Segmentation from Extracorporeal Ultrasound Images
Jierong Cheng, Wei Xiong, Ying Gu, Shue Ching Chia and Yue Wang

Evaluation of endoscopic image enhancement for feature tracking: a new validation framework
Faïcal Selka, Stephane Nicolau, Vincent Agnus, Luc Soler, Abdel Haffid Bessaid and Jacques Marescaux

Intensity-based 3D-2D Mesh-to-Image Registration Using Mesh-based Digitally Reconstructed Radiography
Shun Miao, Tri Huynh, Cyprien Adnet, Thomas Legris, Marcus Pfister and Rui Liao

Toward Accurate and Robust 2-D/3-D Registration of Implant Models to Single-plane Fluoroscopy
Shun Miao, Rui Liao, Joseph Lucas and Christophe Chefd'hôtel

Surface Reconstruction from Tracked Endoscopic Video Using the Structure from Motion Approach
Deyu Sun, Jiquan Liu, Cristian A. Linte, Huilong Duan and Richard A. Robb

A Bayesian Approach for Construction of Sparse Statistical Shape Models Using Dirichlet Distribution
Ali Gooya, Elaheh Mousavi, Christos Davatzikos and Hongen Liao

Brain-Cloud: A Generalized and Flexible Registration Framework for Brain MR Images
Minjeong Kim, Guorong Wu, Qian Wang and Dinggang Shen

Quantized Local Edge Distribution: A Descriptor for B-mode Ultrasound Images
Wing Yin Chan, Yim Pan Chui and Pheng Ann Heng

Reinforcement Learning based Model Selection and Parameter Estimation for Pharmacokinetic Analysis in Drug Selection
Fei Gao, Jingjia Xu, Huafeng Liu and Pengcheng Shi

Delineating 3D Angiogenic Sprouting in OCT Images via Multiple Active Contours
Ting Xu, Fengqiang Li, Duc-Huy T. Nguyen, Christopher S. Chen, Chao Zhou and Xiaolei Huang

The Role of Augmented Reality in Training the Planning of Brain Tumor Resection
Matching Functional Connectivity Patterns for Spatial Correspondence Detection in fMRI Registration
Zhenyu Tang, Di Jiang, Hongming Li and Yong Fan

13:30 - 14:20 **Keynote Address**
Surgical Process Modeling for Intelligent CAI: Methods and Applications
Pierre Jannin

14:20 - 15:00 **Oral Session III: Robotic Applications in Computer-Assisted Interventions**
3D Robotic Catheter Shape Reconstruction and Localisation using Appearance Priors and Adaptive C-arm Positioning
Alessandro Vandini

Uncertainty-Encoded Augmented Reality for Robot-Assisted Partial Nephrectomy: A Phantom Study
Alborz Amir-Khalili

15:00 - 15:30 **Coffee Break & Poster Viewing**

15:30 - 16:30 **Oral Session IV: Ultrasound Enhanced Image-guided procedures**
Ultrasound Image-guided Mapping of Endoscopic Views on a 3D Placenta Model: A Tracker-less Approach
Liangjing Yang

Towards CT Enhanced Ultrasound Guidance for Off-pump Beating Heart Mitral Valve Repair
Feng Li

Calibration and stereo tracking of a laparoscopic ultrasound transducer for augmented reality in surgery
Philip Edgcumbe

16:30 - 16:55 **Discussion & AE-CAI Panel**

16:55 - 17:00 **Closing Remarks**
Stochastic Modeling for Medical Image Analysis

https://louisville.edu/speed/bioengineering/faculty/bioengineering-full/dr-ayman-el-baz/miccai-tutorial.html
Organizers: Ayman El-Baz, Georgy Gimel’farb

14:00 - 14:15 Introduction
Ayman El-Baz

14:15 - 14:45 Appearance models based on precise unsupervised learning of a mixture of pseudo-distributions approximating an empirical marginal probability distribution of pixel/voxel intersites
Ayman El-Baz

14:45 - 15:30 Visual appearance models based on analytic learning of second- or higher-order non-parametric Markov-Gibbs random fields
Georgy Gimel’farb

15:30 - 15:45 Coffee Break

15:45 - 16:05 Shape Models of Objects-of-Interest
Ayman El-Baz

16:05 - 16:25 Application I
Improving full-cardiac cycle strain estimation from tagged CMR by accurate modeling of 3D image appearance characteristics
Matthew Nitzken

16:25 - 16:50 Application II
Dynamic contrast-enhanced MRI-based early detection of acute renal transplant rejection
Fahmi Khalifa

16:50 - 17:15 Application III
MAP-based framework for segmentation of MR brain images based on visual appearance and prior shape
Amir Alansary and Ahmed Soliman

17:15 - 17:30 Closing Remarks
Introduction to Analysis and Applications of Molecular Imaging

http://phd.gccis.rit.edu/feigao/IAAMI2013/Site_2/Home.html
Organizers: Fei Gao, Kuangyu Shi

08:30 - 09:15 Lecture 1
Introduction to Drug Development Using Molecular Imaging
Hideo Tsukada

09:15 - 10:00 Lecture 2
Image Reconstruction/ New Molecular Imaging Techniques
Sibylle Ziegler

10:00 - 10:45 Poster Show
Coffee Break

10:45 - 11:30 Lecture 3
Introduction to Principles of Molecular Imaging
Takaji Yamashita

11:50 - 12:30 Lecture 4
Overview of Clinical Applications in Neurology, Oncology and Cardiology
Stefan Forster
Visual tracking and 3D reconstruction for computer assisted interventions: state-of-the-art and challenges

http://www.lapix.ufsc.br/TutorialMiccai2013/
Organizers: Rogerio Richa, Raphael Sznitman, Sandrine Voros

09:00 - 09:15 Introduction
09:15 - 10:45 Morning Session #1
  09:15 - 10:00 Surgical Vision: Instrument Detection and Model Based Localization
                Danail Stoyanov
  10:00 - 10:45 Shape-from-Template in Gynecologic Laparoscopy
                Adrien Bartoli
10:45 - 11:00 Coffee Break
11:00 - 12:30 Morning Session #2
  11:00 - 11:45 Quantitative Endoscopy
                Gregory Hager
  11:45 - 12:30 Towards a decrease of the delay between laboratory innovations and their clinical evaluation
                Alexandre Moreau-Gaudry
12:30 - 14:00 Lunch Break
14:00 - 15:30 Afternoon Session #1
  14:00 - 14:45 Comparative assessment of optical techniques for 3D surface reconstruction in laparoscopic surgery
                Lena Maier-Hein
  14:45 - 15:30 Utility of Multi-view Camera System for Navigation Surgery
                Naoki Suzuki
15:30 - 15:45 Coffee Break
15:45 - 17:15 Afternoon Session #2
  15:45 - 16:30 A model-based approach for tool tracking in laparoscopy: Potential applications and challenges linked to the approach’s evaluation
                Sandrine Voros
  16:30 - 17:15 View expansion and augmented reality in slit-lamp retinal imaging
                Rogerio Richa
17:15 - 17:30 Closing Remarks
**DTIChallenge** (08:00 – 17:00) – Room ES021

**MICCAI DTI Tractography Challenge on Peritumoral White Matter Anatomy for Neurosurgical Decision-Making**


Organizers: Sonia Pujol, Ron Kikinis, Alexandra Golby, Arya Nabavi, Guido Gerig, Martin Styner, William Wells, Carl-Fredrik Westin, Laurent Chauvin, Carlo Pierpaoli

---

**08:00 - 09:30** **On-Site DTI Challenge**

Tractography Analysis of Neurosurgical Cases by Participating Teams

**08:45 - 09:15** The MICCAI DTI Tractography Challenge, Opening Remarks and Introduction

Sonia Pujol

**09:15 - 09:30** Neurosurgical Cases Presentation

Sonia Pujol

**09:30 - 10:15** **Keynote Lecture**

Anatomical Accuracy of Diffusion MRI Tractography and Connectivity

Carlo Pierpaoli

**10:15 - 11:00** **DTI Tractography Session - Part 1**

- Tracking Corticospinal Tract with Diffusion Tensor Field Replacement for Cancelling Crossing with Superior Longitudinal Fasciculus
  - Yoshitaka Masutani, Yuichi Suzuki, Kenji Ino

- Improving White Matter Tractography by Resolving the Challenges of Edema
  - Jérémy Lecoeur, Emmanuel Caruyer, Luke Macyszyn, Ragini Verma

- Tractography of the Corticospinal and Peritumoral Tracts of Three Patients
  - Ye Li, Xiaolei Chen

- Tensor Deflection Tractography using Local Fibre-Crossing Maps for Neurosurgical Planning
  - Ali R. Khan, Maged Goubran, Jonathan C. Lau, Roy Eagleson, Terry M. Peters, Sandrine de Ribaupierre

- Tracking the Cortico-Spinal Tract from Low Spatial and Angular Resolution Diffusion MRI
  - Aymeric Stamm, Olivier Commowick, Patrick Perez, Christian Barillot

**11:00 - 11:15** **Coffee Break**

**11:15 - 12:00** **DTI Tractography Session - Part 2**

- Performance Evaluation of Default Module for Interactive Tractography Seeding
  - Manuba Tamura, Yoshiyuki Konishi, Takashi Suzuki

- Local Atlas-based Adaptive Fiber Tracking
  - Jan Klein, Monique Meuschke, Benjamin Geisler, Horst K. Hahn

- DTI Tractography Challenge 2013 - MITK Global Tractography
  - Peter F. Neher, Bram Stieltjes, Klaus H. Fritzschke

- Anatomically Driven Corticospinal Tractography with UKF Tool and WMQL
  - Eun Young Kim, Joy Matsui, Hans Johnson
ICA-based Multi-Fiber DWI Tractography in Neurosurgical Planning
Sinchai Tsao, Niharika Gajawelli, Peter A. Michels, Darryl Hwang, Yi Lao, Fernando Yepes, Vidya Rajagopalan, Meng Law, Natasha Lepore

12:00 - 13:00 Lunch Break

13:00 - 14:15 A View from the Clinic: The Neurosurgeon’s Perspective on DTI Tractography
Arya Nabavi, Yoshihiro Muragaki, Yasukazu Kajita, Luke Macyszyn, Sandrine de Ribaupierre

14:15 - 15:15 Review Session of On-Site Challenge Cases

15:15 - 15:30 Coffee Break

15:30 - 15:45 Neurosurgical Cases Results
Sonia Pujol

15:45 - 17:00 Panel Discussion with Teams and Jury Members: DTI Challenge Outcomes and Future Directions
NCI-MICCAI 2013 Challenges: Automated Segmentation of Prostate Structures (ASPS) and Multiparametric Brain Tumor Segmentation

https://wiki.cancerimagingarchive.net/display/Public/NCI-MICCAI+2013+Grand+Challenges+in+Image+Segmentation
http://martinos.org/qtim/miccai2013/

Organizers: Stephen Aylward, Nicolas Bloch, Larry Clarke, Andinet Enquobahrie, Keyvan Farahani, John Freymann, Elizabeth Gerstner, Henkjan Huisman, Carl Jaffe, Jayashree Kalpathy-Cramer, Justin Kirby, Anant Madabhushi, Bjoern Menze, Mauricio Reyes, Mirabela Rusu

09:00 - 09:15 Introduction, Release of Testing Datasets
09:15 - Start of On-Site Competition
10:30 - 11:00 Coffee Break
11:00 - 12:00 Invited Talks
The Cancer Imaging Archive (TCIA), QIN challenge efforts and available resources
Jayashree Kalpathy-Cramer
Aftermath analysis of Brain Tumor Segmentation Challenge 2012 (BRATS2012)
Mauricio Reyes
12:00 - 12:00 Results Preparation and Final Upload
13:00 - 15:00 Lunch and Poster Session
15:00 - 16:00 Short Oral Presentation by Participants
16:00 - 17:00 Challenge Results, Discussions and Wrap-up

Accepted Papers BRATS 2013

A Grouping Artificial Immune Network for Segmentation of Tumor Images
Patricia Buendia, Thomas Taylor, Michael Ryan, Nigel John

Patch-based Segmentation of Brain Tissues.
Nicolas Cordier, Bjoern Menze, Herve Delingette, Nicholas Ayache

Fully Automatic Brain Tumor Segmentation from Multiple MR Sequences using Hidden Markov Fields and Variational EM
S. Doyle, F. Vasseur, M. Dojat, and F. Forbes

Automatic Brain Tumor Segmentation of Multi-sequence MR images using Random Decision Forests
Joana Festa, Sérgio Pereira, José António Mariz, Nuno Sousa, Carlos A. Silva

Semi-automatic Segmentation of Multimodal Brain Tumor Using Active Contours
Xiaotao Guo, Binsheng Zhao
A Hybrid Model for Multimodal Brain Tumor Segmentation
Raphael Meier, Stefan Bauer, Johannes Slotboom, Roland Wiest, and Mauricio Reyes

Multi-class Abnormal Brain Tissue Segmentation Using Texture Features
S. Reza and K. M. Iftekharuddin

Map-Reduce Enabled Hidden Markov Models for High Throughput Multimodal Brain Tumor Segmentation
Thomas Taylor, Nigel John, Patricia Buendia, Michael Ryan

ANTs and _Arboles.
Nick Tustison, Max Wintermark, Chris Durst, and Brian Avants

Automatic Brain Tumor Segmentation with MRF on Supervoxels.
Liang Zhao, Duygu Sarikaya, and Jason J. Corso
MICCAI Grand Challenge: Assessment of Mitosis Detection Algorithms 2013

http://amida13.isi.uu.nl/

Organizers: Mitko Veta, Max A. Viergever, Josien P.W. Pluim, Nikolaos Stathoukos, Paul J. van Diest

09:00 Opening
09:30 Presentations of the proposed methods by the challenge participants
11:30 Presentation of the overall results by the organizers
12:00 Discussion
Program of MICCAI 2013 Workshops, Challenges and Tutorials

September 26
CSI 2013 (08:50 – 17:15) – Room ES034

MICCAI 2013 workshop on Computational Methods and Clinical Applications for Spine Imaging

http://www.digitalimaginggroup.ca/members/Shuo/spine/MICCAIWorkshop.html
Organizers: Jianhua Yao, Tobias Klinder, Aly A. Farag, Shuo Li

08:50 - 09:00 Opening Session

09:00 - 09:45 Invited Talk I
Chair: Shuo Li
Clinical indications and pitfalls of intraoperative 3D-image/ O-arm based navigation system
Tokumi Kanamura

09:45 - 10:45 Segmentation I (CT)
Chair: TBD
2D-PCA based Tensor Level Set Framework for Vertebral Body Segmentation
Ahmed Shalaby, Aly Farag, Melih Aslan
Segmentation of vertebrae from 3D spine images by applying concepts from transportation and game theories
Bulat Ibragimov, Borstjan Likar, Franjo Pernus, Tomaz Vrtovec
Automatic and Reliable Segmentation of Spinal Canals in Low-Resolution, Low-Contrast CT Images,
Qian Wang, Le Lu, Diji Wu, Noha El-Zehiry, Dinggang Shen, Kevin Zhou
A Robust Segmentation Framework for Spine Trauma Diagnosis
Poay Hoon Lim, Ulas Bagci, Li Bai

10:45-11:00 Break

11:00 - 12:15 Computer Aided Detection and Diagnosis
Chair: TBD
Computer Aided Detection of Spinal Degenerative Osteophytes on Sodium Fluoride PET/CT
Jianhua Yao, Hector Munoz , Joseph Burns, Le Lu, Ronald Summers
Novel Morphological and Appearance Features for Predicting Physical Disability from MR Images in Multiple Sclerosis Patients
Jeremy Kawahara, Chris McIntosh, Roger Tam, Ghassan Hamarneh
Classification of Spinal Deformities using a Parametric Torsion Estimator
Jesse Shen, Stefan Parent, Samuel Kadoury
Lumbar Spine Disc Herniation Diagnosis with a Joint Shape Model
Raja Alomari, Vipin Chaudhary, Jason Corso, Gurmeet Dhillon
Epidural Masses Detection on Computed Tomography Using Spatially-Constrained Gaussian Mixture Models
Sanket Pattanaik, Jiamin Liu, Jianhua Yao, Weidong Zhang, Evrim Turkbey, Xiao Zhang, Ronald Summers
12:15 - 13:15  Lunch Break

13:15 - 14:00  Invited Talk II
   Chair: TBD

   Prototyping applications with tracked ultrasound for spine imaging and
   interventions
   Gabor Fichtinger

14:00 - 15:00  Quantitative Imaging
   Chair: Jianhua Yao

   Comparison of manual and computerized measurements of sagittal vertebral
   inclination in MR images
   Tomaž Vrtovec, Franjo Pernus, Bostjan Likar

   Eigenspine: Eigenvector Analysis of Spinal Deformities in Idiopathic Scoliosis
   Daniel Forsberg, Claes Lundström, Mats Andersson, Hans Knutsson

   Quantitative Monitoring of Syndesmophyte Growth in Ankylosing Spondylitis
   Using Computed Tomography
   Sovira Tan, Jianhua Yao, Lawrence Yao, Michael Ward

   A Semi-automatic Method for the Quantification of Spinal Cord Atrophy
   Simon Pezold, Michael Amann, Katrin Weier, Ketut Fundana, Ernst Radue, Till Sprenger, Philippe
   Cattin

15:00 - 15:15  Break

15:15 - 16:00  Segmentation II (MR)
   Chair: TBD

   Multi-modal vertebra segmentation from MR Dixon in hybrid whole-body PET/MR
   Renisch

   Segmentation of intervertebral discs from high-resolution 3D MRI using multi-level
   statistical shape models
   Ales Neubert, Jurgen Fripp, Craig Engstrom, Stuart Crozier

   A supervised approach towards segmentation of clinical MRI for automatic lumbar
   diagnosis
   Subarna Ghosh, Manavender Malgireddy, Vipin Chaudhary, Gurmeet Dhillon

16:00 - 16:45  Registration/Labeling
   Chair: TBD

   Automatic Segmentation and Discrimination of Connected Joint Bones from CT by
   Multi-atlas Registration
   Tristan Whitmarsh, Graham Treece, Kenneth Poole

   Registration of MR to Percutaneous Ultrasound of the Spine for Image-Guided
   Surgery
   Lars Eirik Bø, Rafael Palomar, Tormod Selbekk, Ingerid Reinertsen

   Vertebrae Detection and Labelling in Lumbar MR Images
   Meelis Lootus, Timor Kadir, Andrew Zisserman

16:45 - 17:15  Discussion
   Chair: TBD
Commercialization
Common data sets and challenges
Best Paper award
**MeshMed 2013** (09:00 – 17:10) – Room IB013

**MICCAI 2013 Workshop on Mesh Processing in Medical Image Analysis**

Organizers: Joshua A. Levine, Rasmus R. Paulsen, Yongjie Zhang

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 09:05</td>
<td>Welcome</td>
</tr>
</tbody>
</table>
| 09:05 - 09:50 | Invited Plenary Talk  
Hervé Delingette                                                      |
| 09:50 - 10:10 | Volumetric Anatomical Parameterization and Meshing for Inter-patient Liver  
Coordinate System Definition.  
Sergio Vera, Miguel Ángel González Ballester and Debora Gil             |
| 10:10 - 10:30 | Analysis of Surface Folding Patterns of Diccols using the GPU-Optimized  
Geodesic Field Estimate  
Anirban Mukhopadhyay, Chul Woo Lim, Suchendra Bhandarkar, Hanbo Chen,  
Tianming Liu, Khaled Rasheed and Thiab Taha                                |
| 10:30 - 11:00 | Coffee Break                                                            |
| 11:00 - 11:50 | Invited Plenary Talk  
Kenji Shimada                                                             |
| 11:50 - 12:10 | Finite Element Model for Patient-Specific Functional Simulations of Cochlear  
Implants  
Mario Ceresa, Hans Martin Kjer, Sergio Vera, Noemí Carranza, Frederic Perez,  
Livia Barazzetti, Pavel Mistrik, Anandhan Dhanasingh, Marco Caversaccio,  
Martin Stauber, Mauricio Reyes, Rasmus R. Paulsen and Miguel Angel  
González-Ballester                                                        |
| 12:10 - 12:30 | Cochlear Finite Element Modelling: Mesh Quality Under SSM-Driven  
Deformations  
Hans Martin Kjer, Mario Ceresa, Noemí Carranza, Sergio Vera, Frederic Perez,  
Livia Barazzetti, Mauricio Reyes, Miguel Angel González-Ballester and  
Rasmus R. Paulsen                                                         |
| 12:30 - 14:00 | Lunch                                                                    |
| 14:00 - 14:50 | Invited Plenary Talk  
Leo Grady                                                                 |
| 14:50 - 15:10 | A Family of Fast Spherical Registration Algorithms for Cortical Shapes  
Boris Gutman, Sarah Madsen, Arthur Toga and Paul Thompson                |
| 15:10 - 15:30 | TBA                                                                      |
| 15:30 - 16:00 | Coffee Break                                                            |
| 16:00 - 16:20 | Adaptive Mesh Reconstruction in X-Ray Tomography  
Fanny Buyens, Michele Quinto and Dominique Houzet                         |
| 16:20 - 16:40 | Image to Mesh: Spinal Ligament 2D Surface Models from Bone Volume Images  
and Dynamic Radiographs  
Md. Abedul Haque and G. Elisabeta Marai                                    |
16:40 - 17:10  Best Paper Prize, Discussion, and Workshop Closing
MICCAI 2013 workshop on Systems and Architectures for Computer Assisted Interventions

Organizers: Kiyoyuki Chinzei, Nobuhiko Hata, Peter Kazanzides, Rajesh Kumar, Andinet Enquobahrie, Stefan Bohn, Oliver Burgert

09:30 - 09:45 Welcome Remarks

09:45 - 10:45 Session 1: Architectures
09:45 - 10:05 Simple and Affordable Trial Package and Software Development Kit for OR-Friendly CAI Systems
10:05 - 10:25 System monitoring and diagnostics architecture for networked medical devices
   S. Bohn, M. Leßnau, O. Burgert and T. Neumuth
10:25 - 10:45 A Lightweight and Portable Communication Framework for Multimodal Image-Guided Therapy
   A. Schoch, B. Fuerst, F. Achilles, S. Demirci and N. Navab

10:45 - 11:00 Break

11:00 - 11:40 Session 2: Integration
11:00 - 11:20 Steps towards the Integration of Model Guided Therapy Systems into the Healthcare Environment
   O. Burgert and C. Thies
11:20 - 11:40 An Open-Source Hardware and Software Platform for Telesurgical Robotics Research
   Z. Chen, A. Deguet, S. DiMaio, G. Fischer and P. Kazanzides

13:30 - 14:10 Invited Speech
Patient-based bio-texture modeling using 3D printer and open-source application OsiriX in surgical simulation and navigation
Maki Sugimoto

14:10 - 14:50 Session 3: Applications
14:10 - 14:30 Perspectives on Image-Guided Transapical Beating Heart Aortic Valve Intervention
   M. Karar
14:30 - 14:50 Skull Base Surgery Navigation System Based on Updating Preoperative Images Using Positional Information of Surgical Tools
   Y. Hayashi, M. Fujii, Y. Kajita, T. Nakabayashi and K. Mori

14:50 - 15:10 Break

15:10 - 16:00 Session 4: Hands-on Session
   TBA

16:00 - Closing
08:30 - 10:00  **Morning Oral Session 1**  
**Session 1: Registration**  
Local regression learning via forest classification for 2D/3D deformable registration  
Chen-Rui Chou and Stephen Pizer  
Semi-supervised learning of nonrigid deformations for image registration  
John Onofrey, Lawrence Staib and Xenophon Papademetris  
**Session 2: Segmentation**  
White matter supervoxel segmentation by axial DP-means clustering  
Ryan Cabeen and David Laidlaw  
Integrated spatio-temporal segmentation of longitudinal brain tumor imaging studies  
Stefan Bauer, Jean Tessier, Oliver Krieter, Lutz-P. Nolte and Mauricio Reyes  
Semantic context forests for learning-based knee cartilage segmentation in 3D MR image  
Quan Wang, Dijia Wu, Le Lu, Meizhu Liu, Kim Boyery and Kevin Zhou  

10:00 - 10:30  **Coffee Break**  

10:30 - 12:00  **Morning Oral Session 2**  
**Invited talk**  
Leo Grady  
**Session 3: Short Talk Session**  
Short talks of papers presented during lunch time poster session  

12:00 - 13:30  **Lunch Time Poster Session**  
Computer aided diagnosis using multilevel image features on large-scale evaluation  
Le Lu, Pandu Devarakota, Siddharth Vikal, Dijia Wu, Yefeng Zheng and Matthias Wolf  
Pectoral muscle detection in digital breast tomosynthesis and mammography  
Florin Ghesu, Michael Wels, Anna Jerebko, Michael Suhling, Joachim Hornegger and Michael Kelm  
Flexible architecture for streaming and visualization of large virtual microscopy images  
German Corredor, Marcela Iregui, Viviana Arias and Eduardo Romero  
2D-based 3D volume retrieval using singular value decomposition of detected regions  
Alba Seco de Herrera, Antonio Foncubierta Rodriguez, Emanuele Schiavi and Henning Muller  
A novel shape feature descriptor for the classification of polyps in HD colonoscopy  
Michael Hafner, Andreas Uhl and Georg Wimmer
Automatic aorta detection in 3D cardiac CT images using Bayesian tracking method
Mingna Zheng, Jeffery Carr and Yaorong Ge

Shape Curvature Histogram: a shape feature for celiac disease diagnosis
Michael Gadermayr, Michael Liedlgruber, Andreas Uhl and Andreas Vecsei

Feature extraction with intrinsic distortion correction in celiac disease imagery: no need for rasterization
Michael Gadermayr, Andreas Uhl and Andreas Vecsei

Robust mixture-parameter estimation for unsupervised segmentation of brain MR images
Alfiia Galimzianova, Tiga Spiclin, Bostjan Likar and Franjo Pernus

2D-PCA shape models: application to 3D reconstruction of the human teeth from a single image
Aly Abdelrehim, Aly Farag, Ahmed Shalaby and Moumen El-Melegy

Accurate whole-brain segmentation for Alzheimer’s disease combining an adaptive statistical atlas and multi-atlas
Zhennan Yan, Shaoting Zhang, Xiaofeng Liu, Dimitris Metaxas, Albert Montillo and AIBL

Local phase-based fast ray features for automatic left ventricle apical view detection in 3D echocardiography
Joao Domingos, Eduardo Lima, Paul Leeson and Alison Noble

13:30 - 15:00  Afternoon Oral Session 1
Invited talk
Ron Kikinis

Session 4: Detection and Localization
Class-specific regression random forest for accurate extraction of standard planes from 3D echocardiography
Kiryl Chykeyuk and Alison Noble

Organ localization using joint AP/LAT view landmark consensus detection and hierarchical active appearance models
Qi Song, Albert Montillo, Roshni Bhagalia and Srikrishnan

15:00 - 15:30  COFFEE BREAK

15:30 - 17:00  AFTERNOON ORAL SESSION 2
Session 5: VISCERAL Session
Information about VISCERAL whole-body annotation benchmark (www.visceral.eu)

Invited short talks from benchmark participants MCV Best Paper Award sponsored by Siemens Corporate Technology Adjourn
MICCAI 2013 workshop on Bio-Imaging and Visualization for Patient-Customized Simulations

https://sites.google.com/site/mwbivpcs/
Organizers: João Manuel R. S. Tavares, Xiongbiao Luo, Shuo Li

08:30 - 08:45  Opening Remarks & Announcements
08:45 - 10:15  Oral Presentation I
A Novel Colon Wall Flattening Model for Computed Tomographic Colonography: Method and Validation
Huafeng Wang, Lihong Li, Hao Han, Yunhong Wang, Weifeng Lv, Xianfeng Gu and Zhengrong Liang
Biomechanical Simulation of Lung Deformation from One CT Scan
Feng Li, Fatih Porikli
2D-3D Registration: A Step towards Image-Guided Ankle Fusion
Ahmed Shalaby, Eslam Mostafa, Todd Hockenbury, Aly Farag
A Graph Based Methodology for Volumetric Left Ventricle Segmentation
Sarada Dakua, Abdulla Al-Ansari, Julien Abi-Nahed
Minimally Interactive MRI Segmentation for Subject-Specific Modelling of the Human Tongue
Negar M. Harandi, Rafeef Abugarbieh, Sidney Fels
Real-time and Accurate Endoscope Electromagnetic Tracking via Marker-free Registration Based on Endoscope Tip Center
Xiongbiao Luo, Kensaku Mori

10:15 - 10:30  Coffee Break

10:30 - 11:45  Oral Presentation II
Evaluation of Image Guided Robot Assisted Surgical Training for Patient Specific Laparoscopic Surgery
Tao Yang, Kyaw Kyar Toe, Chin Boon Chng, Weimin Huang, Chee Kong Chui, Jiang Liu, Kin Yong Chang
Proxemics Measurement During Social Anxiety Disorder Therapy Using a RGBD Sensors Network
Julien Leroy, Francois Rocca, Bernard Gosselin
How do Sex, Age, and Osteoarthritis Affect Cartilage Thickness at the Thumb Carpometacarpal Joint? Insights from Subject-Specific Cartilage Modeling
Eni Halilaj, David Laidlaw, Douglas Moore, Joseph Crisco
Patient Specific Modeling of Pectus Excavatum for the Nuss Procedure Simulation
Krzysztof Rechowicz, Mohammad Obeid, Frederic McKenzie
Estimating Pedicle Screw Fastening Strength via a Virtual Templating Platform for Spine Surgery Planning: A Retrospective Clinical Study
Cristian Linte, David Holmes III
11:45 - 12:00  Award Announcement, Panel Discussion, and End of Session
4th International Workshop on Statistical Atlases and Computational Models of the Heart

http://www.cardiacatlas.org/web/stacom2013
Organizers: Alistair Young, Oscar Camara, Tommaso Mansi, Mihaela Pop, Kawal Rhode, Maxime Sermesant

09:00 - 09:15 Opening Remarks
09:15 - 10:00 Keynote
UT-Heart, a multi-scale, multi-physics heart simulator and its clinical applications
Seiryo Sugiura, Jun-ichi Okada, Takumi Washio, Toshiaki Hisada

10:00 - 10:30 Oral Session
10:00 - 10:15 Extraction of cardiac and respiratory motion information from cardiac X-ray fluoroscopy images using Hierarchical Manifold Learning
Maria Panayiotou, Andrew King, Kanwal Bhatia, James Housden, YingLiang Ma, Aldo Rinaldi, Jas Gill, Michael Cooklin, Mark O’Neill, Kawal Rhode

10:15 - 10:30 Dyadic Tensor-based Interpolation of Tensor Orientation: Application to Cardiac DT-MRI
Jin Kyu Gahm, Daniel Ennis

10:30 - 11:00 Coffee Break
11:00 - 12:00 Poster Teaser
12:00 - 13:00 Lunch
13:00 - 14:30 Poster Session
13:00 - 13:30 From regular papers:
Multimodal Pipeline for Comprehensive Validation of Mitral Valve Geometry and Functional Computational Models
Dominik Neumann, Sasa Grbic, Tommaso Mansi, Ingmar Voigt, Jean-Pierre Rabbah, Andrew W. Siefert, Neelakantan Saikrishnan, Ajit P. Yoganathan, David D. Yuh, Razvan Ionasec

Fast Catheter Tracking in Echocardiographic Sequences for Cardiac Catheterization Interventions
Xianliang Wu, James Housden, Niharika Varma, YingLiang Ma, Kawal Rhode, Daniel Rueckert

Personalized Modeling of Cardiac Electrophysiology using Shape-Based Prediction of Fiber Orientation
Karim Lekadir, Ali Pashaei, Corné Hoogendoorn, Marco Pereanez, Xènia Albà, Alejandro F. Frangi

Automatic Extraction of the 3D Left Ventricular Diastolic Transmirtal Vortex Ring from 3D Whole-Heart Velocity-Encoded MRI using Laplace-Beltrami Signatures
Mohammed S. ElBaz, Boudewijn Lelieveldt, Jos Westenberg, Rob van der Geest

A Unified Statistical/Deterministic Deformable Model for LV Segmentation in Cardiac MRI
Sharath Gopal, Demetri Terzopoulos
Direct Myocardial Strain Assessment from Frequency Estimation in Tagging MRI
Hanne Kause, Olena Filatova, Remco Duits, Mark Bruurmijn, Andrea Fuster, Jos Westenberg, Luc Florack, Hans van Assen

Estimation of Electrical Pathways Finding Minimal Cost Paths from Electro-Anatomical Mapping of the Left Ventricle
Ruben Cardenes, Rafael Sebastian, David Soto, David Andreu, Juan Fernandez-Armenta, Bart Bijnens, Antonio Berruezo, Oscar Camara

Velocity-Based Cardiac Contractility Personalization with Derivative-Free Optimization
Ken C. L. Wong, Maxime Sermesant, Jatin Relan, Kawal Rhode, Matthew Ginks, C. Aldo Rinaldi, Reza Razavi, Hervé Delingette, Nicholas Ayache

Image-based estimation of myocardial acceleration using TDFFD: a phantom study
Ali Pashaei, Gemma Piella, Nicolas Duchateau, Luigi Gabrielli, Oscar Camara

Self Stabilization of Image Attributes for Left Ventricle Segmentation
Sarada Dakua, Julien Abi-Nahed, Abdulla Al-Ansari

Model Based Estimation of 4D Relative Pressure Map from 4D Flow MR Images
Viorel Mihalef, Saikiran Rapaka, Mehmet Gulsun, Puneet Sharma, Angelo Scorza, Lucian Mihai i, Ali Kamen, Alex Barker, Michael Markl, Dorin Comaniciu

A Framework for the Pre-Clinical Validation of LBM-EP for the Planning and Guidance of Ventricular Tachycardia Ablation
Tommaso Mansi, Roy Beinart, Oliver Zettinig, Saikiran Rapaka, Bogdan Georgescu, Ali Kamen, Yoav Dori, Muz Zviman, Daniel Herzka, Henry Halperin, Dorin Comaniciu

13:30 - 14:00

From Left Atrial Segmentation Challenge Papers:

Left Atrial Segmentation Challenge: A Unified Benchmarking Framework
Catalina Tobon Gomez, Jochen Peters, Weese Juergen, Karen Pinto, Rashed karim, Tobias Schaeffter, Reza Razavi, Kawal Rhode

Automatic segmentation of the left atrium on CT image
Daoudi Abdelaziz, Saïd Mahmoudi

Multi-Atlas Segmentation of the Left Atrium and Pulmonary Veins
Zulma Sandoval, Juan-David Ospina, Julian Betancur, Jean-Louis Dillenseger

Model-Based Segmentation of the Left Atrium in CT and MRI Scans
Birgit Stender, Oliver Blanck, Bo Wang, Alexander Schlaefer

Toward an automatic left atrium localization based on shape descriptors and prior knowledge
Mohammed Ammar, Saïd Mahmoudi, Mohammed Amine Chikh, Amine Abbou

Decision forests for segmentation of left atrium from 3D MRI
Jan Margreta, Kristin McLeod, Antonio Criminisi, Nicholas Ayache

14:00 - 14:30

From CFD Challenge Papers:

Multiscale Study on Hemodynamics in Patient-specific Thoracic Aortic Coarctation
Xi Zhao, Youjun Liu, Mingzi Zhang, Fan Bai, Xiaochen Ren, Wenyu Fu, Aike Qiao

Hemodynamic in Aortic Coarctation using MRI-based Inflow Condition
Jens Schaller, Leonid Goubergrits, Pavlo Yevtushenko, Ulrich Kertzschler, Eugénie Riesenkampff, Titus Kuehne
Sensitivity analysis of the boundary conditions in simulations of the flow in an aortic coarctation at rest and stress conditions
Salvatore Cito, Jordi Pallares, Anton Vernet

Patient-Specific Hemodynamic evaluation of an Aortic Coarctation under Rest and Stress conditions
Priti G Albal, Tyson Montidoro, Onur Dur, Prahlad G Menon

CFD Challenge: Predicting Patient-Specific Hemodynamics at Rest and Stress through an Aortic Coarctation
Christof Karmonik, Alistair Brown, Kristian Debus, Jean Bismuth, Alan Lumsden

A multiscale filtering-based parameter estimation for patient-specific coarctation simulations in rest and exercise
Sanjay Pant, Benoit Fabreges, Jean-Frederic Gerbeau, Irene Vignon-Clementel

A Finite element CFD simulation for Predicting Patient-Specific Hemodynamics of an Aortic Coarctation
Idit Avrahami

Traditional CFD Boundary Conditions Applied to Blood Analog Flow Through a Patient-Specific Aortic Coarctation
Xiao Wang, Keith Walters, Greg Burgreen, David Thompson

14:30 - 15:15 Keynote
Biomechanics of tissue and exploring its microstructure with waves: neural, abdominal, and cardiovascular applications
Ralph Sinkus

15:15 - 16:00 Oral Session

15:15 - 15:30 Continuous Spatio-Temporal Atlases of the Asymptomatic and Infarcted Hearts
Pau Medrano-Gracia, Brett Cowan, David Bluemke, J. Paul Finn, Alan H. Kadish, Daniel Lee, João Lima, Avan Suinesiaputra, Alistair Young

15:30 - 15:45 Progress on customization of predictive MRI-based macroscopic models from experimental data
Mihaela Pop, Maxime Sermesant, Samuel Oduneye, Sudip Ghate, Roey Flor, Susan Newbigging, Eugene Crystal, Nicholas Ayache, Graham Wright

15:45 - 16:00 Automatic Personalization of the Mitral Valve Biomechanical Model Based on 4D Transesophageal Echocardiography
Jingjing Kanik, Tommaso Mansi, Ingmar Voigt, Puneet Sharma, Razvan Ionasec, Dorin Comaniciu, James Duncan

16:00 - 16:45 LA Segmentation Challenge
Presentations of the challenge results and a round table discussion.
Moderators: Catalina Tobon-Gomez, Kawal Rhode

16:45 - 17:30 CFD Simulation Challenge
Presentations of the challenge results and a round table discussion.
Moderator: Tommaso Mansi
The Sixth International Workshop on High Performance Computing for Biomedical Image Analysis

http://www.cs.uky.edu/hpmiccai2013/
Organizers: Lin Yang, David J. Foran, Joel H. Saltz, Bogdan Georgescu

08:50 - 09:00 Opening Remarks

09:00 - 10:00 Keynote
Manish Parshar

10:00 - 10:30 Towards Real-Time Cardiac Electrophysiology Computations Using GP-GPU Lattice-Boltzmann Method
Bogdan Georgescu, Saikiran Rapaka, Tommaso Mansi, Oliver Zettinig, and Ali Kamen

10:30 - 11:00 Coffee Break

11:00 - 11:30 Exploring Online Nuclear Segmentation on Large Fluorescence Brain Tumor Images using CometCloud
Xin Qi, Daihou Wang, Javier Diaz-Montes, Ivan Rodero, Tony Pan, Abulimit Aji, Lee Cooper, Fuyong Xing, Manish Parashar, David J. Foran, Lin Yang

11:30 - 12:00 NeuroBox: Seamless Integration of Data Analysis and Data Management on Distributed High Performance Computing
Vittorio Iacovella, Paolo Avesani, Marco Dalla Vecchia, Yannis Velegrakis

12:00 - 13:30 Lunch Time

13:30 - 14:30 Keynote
Siemens Corporate Technology (Current Research Progress for High Performance Computing in Medical Image Analysis in Siemens)

14:30 - 15:00 High-throughput Content Based Image Retrieval Using GPGPU
Daihou Wang, Xin Qi, Manish Parashar, David J. Foran, Lin Yang

15:00 - 15:30 Coffee Break

15:30 - 16:00 GPU Accelerated CBCT Reconstruction from Few Views with SART and TV Regularization
Ping Liu, Lin Shi, Defeng Wang, Yu Guo, Jianying Li, Jing Qi, Pheng-Ann Heng

16:00 - 16:30 Distributed Content Based Muscle Image Retrieval Using Kd-Tree and MapReduce
Manish Sapkota, Fujun Liu, Lin Yang

16:30 - 17:00 Closing discussion with Lin Yang, Manish Parashar, and Siemens Corporate Technology
MICCAI 2013 workshop on Medical Content-based Retrieval for Clinical Decision Support

http://www.mcbr-cds.org/
Organizers: Tanveer Syeda-Mahmood, Hayit Greenspan, Anant Madabhushi

09:00 - 09:10 Welcome
09:10 - 10:00 Plenary Session (Invited Talk)
10:00 - 10:30 Oral 1
   A Bag of Semantic Words Model for Medical Content-based Retrieval
   Sidong Liu, Weidong Cai, Yang Song, Sonia Pujol, Ron Kikinis, Dagan Feng
10:30 - 11:00 Coffee Break
11:00 - 11:30 Oral 2
   Content-based Tissue Region Retrieval in Prostate Histopathology
   Kien Nguyen
11:30 - 12:00 Oral 3
   Gland-based Prostate Tissue Image Classification
   Kien Nguyen
12:00 - 12:30 Oral 4
   Assistance in qualitative/quantitative assessment of basal cell carcinoma using optical coherence tomography
   Mohammad Avanaki
12:30 - 13:30 Lunch
13:30 - 14:00 Oral 5
   Longitudinal Analysis of 4D Echocardiography Data Using a Combined Shape and Speckle Tracking Approach
   Colin Compas, Xiaojie Huang, Emily Wong, Ben Lin, Donald Dione, Albert Sinusas, Matthew O’Donnel, James Duncan
14:00 - 15:00 Invited Panel
15:00 - 15:10 Closing Remarks
Fifth International Workshop on Pulmonary Image Analysis

http://www.lungworkshop.org/2013/

Organizers: Reinhard R. Beichel, Marleen de Bruijne, Sven Kabus, Atilla P. Kiraly, Takayuki Kitasaka, Jan-Martin Kuhngk, Jamie R. McClelland, Eva van Rikxoort, Simon Rit

08:25 - 08:30 Opening
Organizers

08:30 - 10:00 Session 1: Computer Aided Diagnosis
08:30 - 09:00 Automated Scoring of Chest Radiographs for Tuberculosis Prevalence Surveys: A Combined Approach
Bram van Ginneken, Rick Philipsen, Laurens Hogeweg, Pragnya Maduskar, Jaime Melendez, Clara Sanchez, Rahmatulai Maane, Beatrice dei Alorse, Umberto d’Alessandro, Ifedayo Adetifa

09:00 - 09:30 Learning Interstitial Lung Diseases CT Patterns from Reports Keywords
José Ramos, Thessa Kockelkorn, Bram van Ginneken, Max Viergever, Jan Grutters, Rui Ramos, Aurélio Campilho

09:30 - 10:00 Predicting the Occurrence of Radiation Induced Pneumonitis by Texture Analysis of CT Images from Lung Cancer Patients
Dean Montgomery, Sorcha Campbell, Kun Cheng, Yang Feng, John Murchison, Ai Wain Yong, Gillian Ritchie, Duncan McLaren, Sara Erridge, Stephen McLaughlin, William Nailon

10:00 - 10:30 Coffee Break

10:30 - 11:30 Invited Speaker
Multiscale image analysis of lung CT images
Noboru Niki

11:30 - 12:30 Posters
An Automated Initialization System for Robust Model-Based Segmentation of Lungs in CT Data
Gurman Gill, Matthew Toews, Reinhard Beichel

Discrimination of benign and malignant GGO in LIDC/IDRI dataset using three-dimensional oriented GLCM and hyper-surface fitting
Yasushi Hirano, Rui Xu, Rie Tachibana, Shoji Kido, Hyoungseop Kim

Deformable Registration Combined with 3D SIFT Matching and Moving Least Squares
Zisheng Li, Tsuneya Kurihara

Semi-automated segmentation of pulmonary lobes in chest CT scans using evolving surfaces
Pechin Lo, Eva van Rikxoort, Jonathan Goldin, Matthew Brown

A Two-Stage Sliding Window Method for Region-based Lung CT Image Retrieval
Ling Ma, Xiabi Liu, Chunwu Zhou, Xinming Zhao, Yanfeng Zhao

12:30 - 13:30 Lunch

13:30 - 15:00 Session 2: Segmentation
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 13:30 - 14:00 | 2D X-ray airway tree segmentation by 3D deformable model projection and registration  
Benjamin Irving, Tania Douglas, Paul Taylor |
| 14:00 - 14:30 | Adaptive higher-order submodular potentials for pulmonary artery-vein segmentation  
Yoshiro Kitamura, Yuanzhong Li, Wataru Ito, Hiroshi Ishikawa |
| 14:30 - 15:00 | Iterated Stacked Classifiers for Lung Segmentation in Computed Tomography  
Francesco Ciompi, Carlo Gatta, Marleen de Bruijne |
| 15:00 - 15:30 | Coffee Break |
| 15:30 - 17:00 | Session 3: Registration |
| 15:30 - 16:00 | Robust Lung Ventilation Assessment  
Sven Kabus, Tobias Klinder, Tokihiro Yamamoto, Paul Keall, Billy Loo, Cristian Lorenz |
| 16:00 - 16:30 | Combining Automatic Landmark Detection and Variational Methods for Lung CT Registration  
Thomas Polzin, Jan Rühaak, René Werner, Jan Strehlow, Stefan Heldmann, Heinz Handels, Jan Modersitzki |
| 16:30 - 17:00 | Measurement of Local Deformation due to Lung Tumor Response to Radiation Therapy  
Geoffrey Hugo, Kunlin Cao, Christopher Guy, Elisabeth Weiss, Nuzhat Jan, Gary Christensen |
| 17:00         | End                                                       |
MICCAI 2013 Workshop on Breast Image Analysis

http://www.cs.ucl.ac.uk/bia2013/
Organizers: Anne L Martel, Nico Karssemeijer, Mads Nielsen, Martyn Nash, Julia Schnabel, Despina Kontos, John Hipwell,

09:00 - 09:10 Welcome and Introduction
Anne Martel

09:10 - 10:00 Keynote Presentation
Chair: Julia Schnabel
Ultrasound Tissue Elasticity Imaging in Breast Cancer
Tsuyoshi Shiina

10:00 - 10:30 Coffee Break

10:30 - 12:00 Session 1: Deformation and Registration
Chair: Martyn Nash

10:30 Temporal and ipsilateral X-ray mammography registration via a 3D patient-specific model
Thomy Mertzanidou, John Hipwell, Lianghao Han, Henkjan Huisman, Ulrich Bick, Nico Karssemeijer and David Hawkes

10:50 Modelling Breast Deformation Using Partial Least-Squares Regression
Duane T K Malcolm, Chun M Goh, Thiranja P Babarenda Gamage, Baosheng Hou, Poul M F Nielsen and Martyn P Nash

11:10 Evaluation of a B-spline-based breast compression simulation for correspondence analysis between MRI and mammographic image data
Julia Krüger, Jan Ehrhardt, Arpad Bischof and Heinz Handels

11:30 Registration of Automated 3D Breast Ultrasound Views
Tao Tan, Björn Eiben, Bram Platel, Jan van Zelst, Lianghao Han, Thomy Mertzanidou, Stian Johnsen, John Hipwell, Ritse Mann, David Hawkes and Nico Karssemeijer

12:00 - 14:00 Lunch and Posters
Fabián Rodrigo Narváez Espinoza and Eduardo Romero

Contrast-Agent-Free MRI-guided Breast Biopsies Enabled by Breast Deformation Simulation
Markus Harz, Suzan Akbey, Ritse M. Mann, Kathy Schilling, Joachim Georgii and Horst Hahn

Learning to detect lesion boundaries in breast ultrasound images
Pavel Kisilev, Ella Barkan, Greg Shakhnarovich and Asaf Tzadok

Image quality in automated breast ultrasound images: a preliminary study for the development of automated image quality assessment
Julia Schwaab, Yago Diez, Joan Martí, Robert Martí, Jan van Zelst, Bram Platel, Tao Tan, Johannes Gregori, Stefan Wirtz, Johanna Kramme and Matthias Günther
Characterising and Quantifying the Variation in Adipose and Fibroglandular Tissue between Women when Measuring Breast Density
Christopher Tromans and Michael Brady

14:00 - 15:00 Session 2: Digital Mammography
Chair: Nico Karssemeijer

14:00 Standard Attenuation Rate and Volpara(R) Volumetric Density Maps
Faraz Janan, Sir Michael Brady, Christopher Tromans and Ralph Highnam

Chisako Muramatsu, Tokiko Endo, Mikinao Oiwa, Misaki Shiraiwa, Kunio Doi and Hiroshi Fujita

14:40 Predicting False-Positive Biopsy Risk from Digital Mammography Using Locally-Adaptive Parenchymal Texture Analysis.
Jae Choi, Brad Keller, Emily Conant and Despina Kontos

15:00 - 15:30 Coffee Break

15:30 - 16:50 Session 3: Segmentation and Classification
Chair: Despina Kontos

15:30 Atlas-Based Segmentation of Breast MR Images.
Farzad Khalvati and Anne Martel

15:50 Automated localization of malignant lesions in breast DCE-MRI.
Albert Gubern-Mérida, Bram Platel, Ritse M Mann, Robert Martí and Nico Karssemeijer

16:10 A Texture Based Approach to Automated Detection of Diagnostically Relevant Regions in Breast Digital Pathology
Mohammad Peikari, Judit Zubovits, Gina Clarke and Anne Martel

16:30 A fully automatic lesion classification in breast ultrasound.
Eugene Walach, Pavel Kisilev, Dan Chevion, Ella Barkan, Sivan Harary, Sharbell Hashaul, Ami Ben-Horesh, Asaf Tzadok, Irit Hadas-Halpern and Irena Nikitin

16:50 - 17:00 Closing Remarks
### R based medical imaging tutorial

http://stnava.github.io/RMI/

Organizers: Brian B. Avants, Tom Fletcher

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 09:10</td>
<td><strong>Brief Introduction and Overview of R</strong>, Brian Avants, Brandon Whitcher</td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td><strong>Morphometry and fMRI in R with ANTsr</strong></td>
</tr>
<tr>
<td></td>
<td>Brian Avant</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td><strong>Coffee Break</strong></td>
</tr>
<tr>
<td>10:30 - 12:00</td>
<td><strong>Model Selection and Longitudinal Analysis with R</strong>, Tom Fletcher</td>
</tr>
<tr>
<td>12:00 - 12:30</td>
<td><strong>Questions &amp; Future Plans</strong></td>
</tr>
</tbody>
</table>
Intelligent imaging: Linking MR acquisition and processing

http://www.med.umich.edu/intelligentMR/MiCCAl13tut/
Organizers: Boklye Kim, Charles R. Meyer, Daniel Rueckert, Colin Studholme, William Wells

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>Opening</td>
</tr>
<tr>
<td>08:40</td>
<td>Session I: Plenary Overviews</td>
</tr>
<tr>
<td>08:40</td>
<td>Recent advances, methodologies and applications of MRI / fMRI; 7T MRI: Game-Changer for Human Neuroscience</td>
</tr>
<tr>
<td>09:25</td>
<td>Neuro and Cardiac Elements of MRI: Dealing with motion in MRI in the image domain or k-space - why choose which?</td>
</tr>
<tr>
<td>10:10</td>
<td>Coffee/Tea Break</td>
</tr>
<tr>
<td>10:30</td>
<td>Session II: Current Topics in MRI/fMRI Data Acquisition, Image Processing and Registration</td>
</tr>
<tr>
<td>10:30</td>
<td>MRI/fMRI Methodology, Motion and Pitfalls</td>
</tr>
<tr>
<td>11:00</td>
<td>Recent advances in retrospective and prospective motion correction in MRI and trade-offs between these two motion correction strategies</td>
</tr>
<tr>
<td>11:30</td>
<td>Magnetic Susceptibility and MRI: Distortion Correction and Tissue Characterization</td>
</tr>
<tr>
<td>12:00</td>
<td>Spin saturation artifact with head motion</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30</td>
<td>Cardiac MRI for Reverse Engineering Cardiac Mechanics</td>
</tr>
<tr>
<td>14:00</td>
<td>Cardiac and respiratory MR imaging: Motion estimation and modelling</td>
</tr>
<tr>
<td>14:30</td>
<td>Fetal/neonatal MRI acquisition and processing: Motion correction and super resolution</td>
</tr>
<tr>
<td>15:00</td>
<td>Q/A and Break</td>
</tr>
<tr>
<td>15:30</td>
<td>Session III: Current and Potential Clinical Applications of MRI/fMRI and Image Registration</td>
</tr>
<tr>
<td>15:30</td>
<td>Compressed sensing applications to cardiac MRI</td>
</tr>
<tr>
<td></td>
<td>Organizers: Boklye Kim, Charles R. Meyer, Daniel Rueckert, Colin Studholme, William Wells</td>
</tr>
</tbody>
</table>
16:00 - 16:30  Accelerated imaging and Compressed sensing in MRI
Raj Ashish

16:30 - 17:00  Superresolution diffusion magnetic resonance imaging
Simon Warfield

17:00  Discussion and Concluding Remarks
Common architecture for algorithm development and deployment

Organizers: Sascha Zelzer, Marco Nolden, Sonia Pujol, Steve Pieper, Matt Clarkson

08:30 - 09:15 The Common Toolkit: What it provides and how to use it
Sascha Zelzer, Marco Nolden, Steve Pieper

09:15 - 10:00 Medical imaging platforms perspective: How platforms like 3D Slicer, MITK, GIMIAS, MAF and MedInria use CTK
Marco Nolden, Ivo Wolf, Sascha Zelzer, Steve Pieper

10:30 - 11:30 Algorithm developer perspective: How to and why make your algorithm compatible with CTK. Interoperability use cases
Sebastien Ourselin, Matt Clarkson, Hans Johnson, Sonia Pujol

11:30 - 12:30 Deployment scenarios: Classrooms, Research Labs, Reading Rooms, ORs, Workstations, Web Servers, Clusters and Clouds.
Steve Pieper, Hans Johnson, Sonia Pujol, Marco Nolden
MICCAI Challenge Workshop on Segmentation: Algorithms, Theory and Applications

https://masi.vuse.vanderbilt.edu/workshop2013/index.php/Main_Page
Organizers: Bennett Landman, Simon Warfield

**08:30 - 10:00  Session 1: Technical Program**

08:30 - 08:40 Welcome
Bennett Landman

08:40 - 09:00 BrainGraph: tissue segmentation using the Geodesic Information Flows framework
M. Jorge Cardoso, Marc Modat, Sebastien Ourselin

09:00 - 09:20 Automated Cerebellar Lobule Segmentation using Graph Cuts
Zhen Yang, John Bogovic, Chuyang Ye, Aaron Carass, Sarah Ying, Jerry Prince

09:20 - 09:40 Uncertainty Estimates for Improved Accuracy of Registration-Based Segmentation Propagation using Discrete Optimisation
Mattias Heinrich, Ivor Simpson, Mark Jenkinson, Michael Brady, Julia Schnabel

09:40 - 10:00 Automatic cortical tuber segmentation based on a combined global-local intensity mixture model (invited paper)
Xavier Tomas-Fernandez, Peters Jurriaan, Sanjay Prabhu, Mustafa Sahin, Simon K. Warfield

**10:00 - 10:30  Coffee Break (and Posters)**

**10:30 - 11:00  Poster Session I**

**11:00 - 11:25  Session 2: Challenge Overview**

11:00 - 11:05 Challenge Awards
Bennett Landman

11:05 - 11:25 Standardized Registration Methods for the SATA Challenge Datasets (invited paper)
Brian Avants, Nicholas Tustison

**11:25 - 12:30  Session 3: Cardiac Challenge (Chair: Alistair Young)**

11:25 - 11:35 Overview
Alistair Young

11:35 - 11:55 Patch-Based Label Fusion with Spatio-Temporal Graph Cuts for Cardiac MR Images
Wenjia Bai, Wenzhe Shi, Nicholas Peters, Daniel Rueckert

11:55 - 12:15 Segmentation of the Left Ventricle Using Distance Regularized Two-layer Level Set Approach
Chaolu Feng, Chunming Li, Christos Davatzikos, Harold Litt

12:15 - 12:30 Discussion

**12:30 - 13:30  Lunch**
13:30 - 14:40  Session 4: Diencephalon Challenge (Chair: Simon K. Warfield)
13:30 - 13:40  Overview
Simon K. Warfield
13:40 - 14:00  Morphological Appearance Manifolds for Multiatlas Label Fusion
Jimit Doshi, Guray Erus, Yangming Ou, Christos Davatzikos
14:00 - 14:20  Multi-Atlas Label Propagation with Atlas Encoding by Randomized Forests
Darko Zikic, Ben Glocker, Antonio Criminisi
14:20 - 14:40  Discussion
14:40 - 15:00  Poster Session II
15:00 - 15:30  Coffee Break
15:30 - 16:20  Session 5: Canine Challenge (Chair: Martin Styner)
15:30 - 15:40  Overview
Martin Styner
15:40 - 16:00  PICSL Algorithm Summary for MICCAI Grand Challenge on Segmentation
HongZhi Wang, Brian Avants, Paul Yushkevich
16:00 - 16:20  Discussion
16:20 - 17:00  Session 6: Open Discussion
16:20 - 17:00  Where do we go from here?

Technical Posters

T1 BrainGraph: tissue segmentation using the Geodesic Information Flows framework
M. Jorge Cardoso, Marc Modat, Sebastien Ourselin

T2 Robust Initialization of Multi-Organ Shape Models
Nicole Schadewaldt, Daniel Bystrov, Torbjørn Vik, Heinrich Schulz, Jochen Peters, Astrid Franz, Christian Bürger, Karl Bzdusek

T3 Automated Cerebellar Lobule Segmentation using Graph Cuts
Zhen Yang, John Bogovic, Chuyang Ye, Aaron Carass, Sarah Ying, Jerry Prince

T4 Negotiable democracy: determining the ‘tailored majority’ in multiple classifier fusion
Thomas Langerak, Josien Pluim

T5 Automatic Segmentation of Multiple Objects in Medical Images based on Structured Patch Model
Sang Hyun Park, Seungyeon Shin, Il Dong Yun, Sang Uk Lee

T6 Uncertainty Estimates for Improved Accuracy of Registration-Based Segmentation Propagation using Discrete Optimisation
Mattias Heinrich, Ivor Simpson, Mark Jenkinson, Michael Brady, Julia Schnabel

T7 Regression forest region recognition enhances multi-atlas spleen labeling
Bo Li, Swetasudha Panda, Zhoubing Xu, Andrew Asman, Peter Shanahan, Richard Abramson, Bennett Landman

T8 Automatic cortical tuber segmentation based on a combined global-local intensity mixture model (invited paper)
Xavier Tomas-Fernandez, Peters Jurriaan, Sanjay Prabhu, Mustafa Sahin, Simon K. Warfield
Challenge Posters

C1 A Variational Level Set Framework for Label Fusion in Multi-Atlas Segmentation
Zhentai Lu, Chunming Li, Wu-fan Chen, Christos Davatzikos

C2 PICSL Algorithm Summary for MICCAI Grand Challenge on Segmentation
HongZhi Wang, Brian Avants, Paul Yushkevich

C3 Multi-Atlas Segmentation Propagation with Uncertainty Estimates from Belief Propagation
Mattias Heinrich, Ivor Simpson, Michael Brady, Julia Schnabel

C4 Patch-Based Label Fusion with Spatio-Temporal Graph Cuts for Cardiac MR Images
Wenjia Bai, Wenzhe Shi, Nicholas Peters, Daniel Rueckert

C5 Patch-based Segmentation without Registration: Application to Canine Leg MRI
Zehan Wang, Anil Rao, Daniel Rueckert

C6 Multi-Atlas Label Propagation with Atlas Encoding by Randomized Forests
Darko Zikic, Ben Glocker, Antonio Criminisi

C7 Probabilistic label fusion with a parametric generative model
Juan Iglesias, Mert Sabuncu, Koen Van Leemput

C8 Automatic Segmentation of Multiple Objects in Medical Images based on Structured Patch Model
Sang Hyun Park, Seungyeon Shin, Il Dong Yun, Sang Uk Lee

C9 Segmentation of the Left Ventricle Using Distance Regularized Two-layer Level Set Approach
Chaolu Feng, Chunming Li, Christos Davatzikos, Harold Litt

C10 Multi-Atlas Segmentation using Unoptimized Baseline Statistical Fusion
Swetasudha Panda, Andrew Asman, Bennett Landman

C11 Summary of the MASI Statistical Fusion Approach for the MICCAI SATA Challenge
Andrew Asman, Bennett Landman

C12 Morphological Appearance Manifolds for Multiatlas Label Fusion
Jimit Doshi, Guray Erus, Yangming Ou, Christos Davatzikos

Proceedings Papers without Posters

P1 MICCAI 2013 Segmentation Algorithms, Theory and Applications (SATA) Challenge Results Summary
Andrew Asman, Alireza Akhondi-Asl, Hongzhi Wang, PENN, Nicholas Tustison, Brian Avants, Simon K. Warfield, Bennett Landman

P2 Standardized Registration Methods for the SATA Challenge Datasets
Brian Avants, Nicholas Tustison
## MRBrainS13 Grand Challenge on MR Brain Image Segmentation

http://mrbrains13.isi.uu.nl/

Organizers: Adriënn.e Mendrik, Geert Jan Biessels, Hugo Kuijf, Koen Vincken, Max Viergever

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 - 09:00</td>
<td>Opening and Distribution of the Three On-Site Test Datasets</td>
</tr>
<tr>
<td>09:00 - 12:30</td>
<td>On-Site Challenge: Participants Run Their Algorithms on the Test Scans Provided at the Workshop</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>12:30 - 13:30</td>
<td>Lunch Break (Evaluation of the on-site challenge results by the organizers)</td>
</tr>
<tr>
<td>13:30 - 13:40</td>
<td>About the MRBrainS13 Challenge</td>
</tr>
<tr>
<td>13:40 - 14:00</td>
<td>MR Brain Image Segmentation: Industrial versus Academic Perspective M. Breeuwer</td>
</tr>
<tr>
<td>14:10 - 14:20</td>
<td>Automated Brain-Tissue Segmentation by Multi-Feature SVM Classification A. van Opbroek</td>
</tr>
<tr>
<td>14:20 - 14:30</td>
<td>Automatic Brain Tissue Segmentation of Multi-sequence MR images using Random Decision Forests S. Pereira</td>
</tr>
<tr>
<td>14:30 - 14:40</td>
<td>Multi-Atlas Brain MRI Segmentation with Multiway Cut D. Sarikaya</td>
</tr>
<tr>
<td>14:40 - 14:50</td>
<td>Fully automatic brain segmentation using model-guided level sets and skeleton-based models C. Wang</td>
</tr>
<tr>
<td>14:50 - 15:00</td>
<td>MAP-Based Framework for MR Brain Images Segmentation Based on Visual Appearance and Prior Shape A. Alansary</td>
</tr>
<tr>
<td>15:00 - 15:20</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:30 - 15:40</td>
<td>Auto-kNN: Brain Tissue Segmentation using Automatically Traind k-Nearest-Neighbor Classification H.A. Vrooman</td>
</tr>
<tr>
<td>15:40 - 15:50</td>
<td>Gaussian Intensity Model with Neighborhood Cues for Fluid-Tissue Categorization of Multi-Sequence MR Brain Images R. Katyal and S. Paneri</td>
</tr>
<tr>
<td>15:50 - 16:00</td>
<td>MR Brain Segmentation Using Decision Trees A. Carass</td>
</tr>
<tr>
<td>16:00 - 16:10</td>
<td>Modified Expectation Maximization Method for Automatic Segmentation of MR Brain Images R.M. Prakash</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 16:10 - 16:20 | Multimodal MR Brain Segmentation Using Bayesian-based Adaptive Mean-Shift (BAMS)  
M. Alipoor     |
| 16:20 - 16:30 | Multi-Atlas-based Segmentation with Hierarchical Max-Flow  
A.R. Khan       |
| 16:30 - 17:00 | Challenge Results, Discussion and Closing Remarks                           |