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

MICCAI

www.miccai2013.org

Contents

Foreword

General Information

MICCAI 2013 Satellite Events Organization

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

Location Maps for Sunday September 22

MLMI '13 14
4th International Workshop on Machine Learning in Medical Imaging

CBM8 18
Computational Biomechanics for Medicine VIII

MFCA '13 20
4th MICCAI workshop on Mathematical Foundations of Computational Anatomy

CLIP 2013 22
Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging

CDMRI '13 24
MICCAI 2013 Workshop on Computational Diffusion MRI

MICCAI- STENT 26
The 2nd International MICCAI- Workshop on Computer Assisted Stenting

MMBC 2013 28
Mathematical Methods for Brain Connectivity

M2CAI 30
Modeling and Monitoring of Computer Assisted Interventions

ABDI 2013 32
5th International Workshop on Abdominal Imaging: Computational and Clinical Applications

MBIA 2013 36
3rd International Workshop on Multimodal Brain Image Analysis

MIAR 2013 40
The 6th International Workshop on Medical Imaging and Augmented Reality

SMMIA 44
Stochastic Modeling for Medical Image Analysis

IAAMI 2013 46
Introduction to Analysis and Applications of Molecular Imaging

VTR 2013 48
Visual tracking and 3D reconstruction for computer assisted interventions: state-of-the-art and challenges

DTIChallenge 50
MICCAI DTI Tractography Challenge on Peritumoral White Matter Anatomy for Neurosurgical Decision- Making

ASPS- BRATS 52
NCI- MICCAI 2013 Challenges: Automated Segmentation of Prostate Structures (ASPS) and Multiparametric Brain Tumor Segmentation

AMIDA 13 54
MICCAI Grand Challenge: Assessment of Mitosis Detection Algorithms 2013

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

Location Maps for Thursday September 26

CSI 2013 60
MICCAI 2013 workshop on Computational Methods and Clinical Applications for Spine Imaging

MeshMed 2013 64
MICCAI 2013 Workshop on Mesh Processing in Medical Image Analysis

SACAI 2013 66
MICCAI 2013 workshop on Systems and Architectures for Computer Assisted Interventions

MCV 68
MICCAI 2013 workshop on Medical Computer Vision

BIV- PCS 70
MICCAI 2013 workshop on Bio-Imaging and Visualization for Patient- Customized Simulations

STACOM '13 72
4th International Workshop on Stastical Atlases and Computational Models of the Heart

HPC 76
The Sixth International Workshop on High Performance Computing for Biomedical Image Analysis

MCBR-CDS '13 78
MICCAI 2013 workshop on Medical Content-based Retrieval for Clinical Decision Support

PIA 2013 80
Fifth International Workshop on Pulmonary Image Analysis

BIA 2013 82
MICCAI 2013 Workshop on Breast Image Analysis

RMI 84
R based medical imaging tutorial

Intelligent MR 86
Intelligent imaging: Linking MR acquisition and processing

CTK-MICCAI 2013 88
Common architecture for algorithm development and deployment

SATA '13 90
MICCAI Challenge Workshop on Segmentation: Algorithms, Theory and Applications

MRBrainS13 94
MICCAI Grand Challenge on MR Brain Image Segmentation

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, Universite 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 Kabus
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
Adriënne 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)

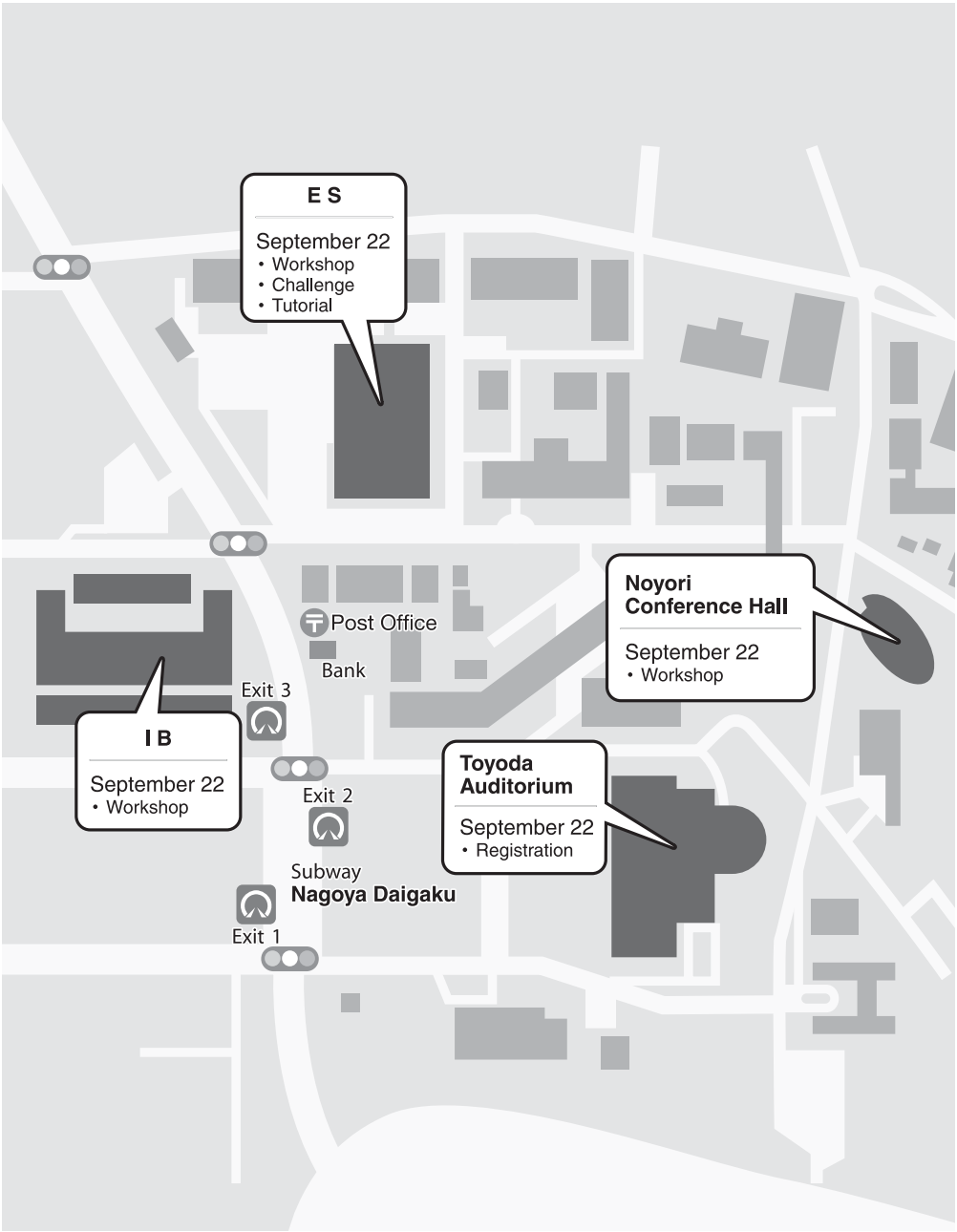
Workshops / Tutorials / Challenges Organizers

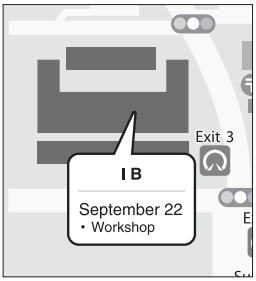
Carlo Pierpaoli
Josien P. W. Pluim
Mihaela Pop
Sonia Pujol
Sonia Pujol
Mauricio Reyes
Kawal Rhode
Rogerio Richa
Simon Rit
Daniel Rueckert
Mirabela Rusu
Joel H. Saltz
Julia Schnabel
Thomas Schultz
Maxime Sermesant
Raj Shekhar
Dinggang Shen
Li Shen
Kuangyu Shi
Stefan Sommer
Nikolaos Stathonikos
Colin Studholme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

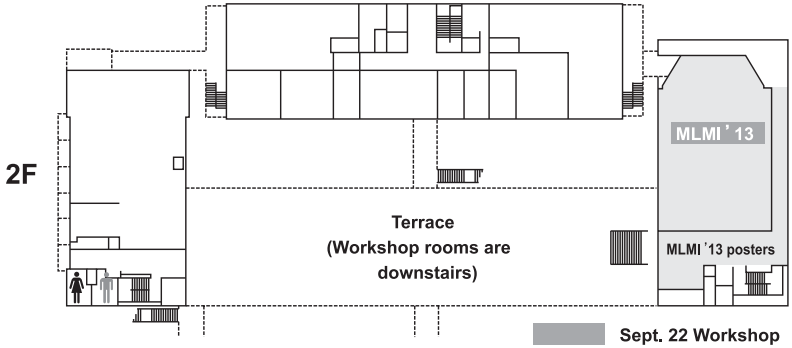
Program of MICCAI 2013 Workshops, Challenges and Tutorials

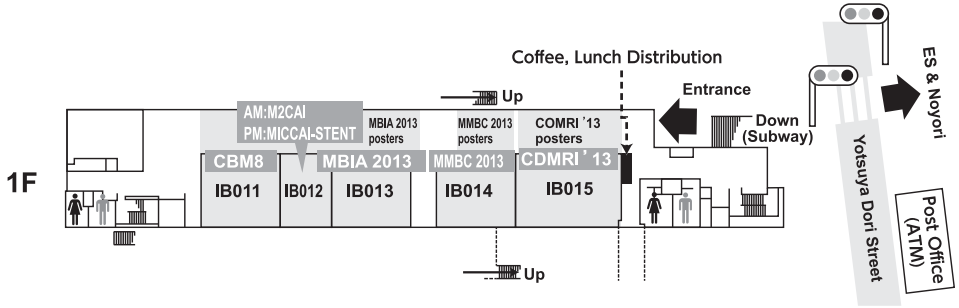
September 22

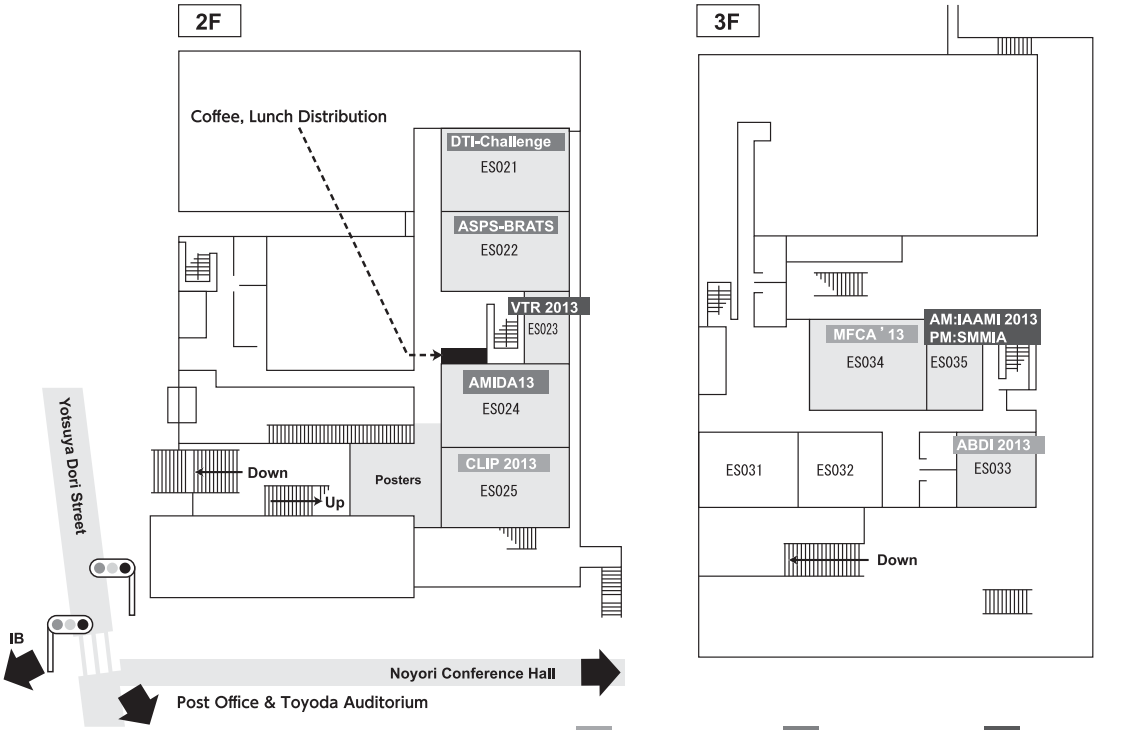
Location Maps for Sunday September 22

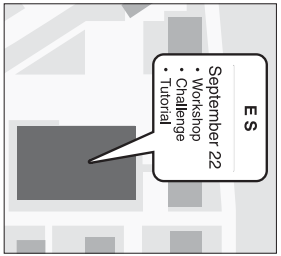



Exit 3
I B
September 22
• Workshop

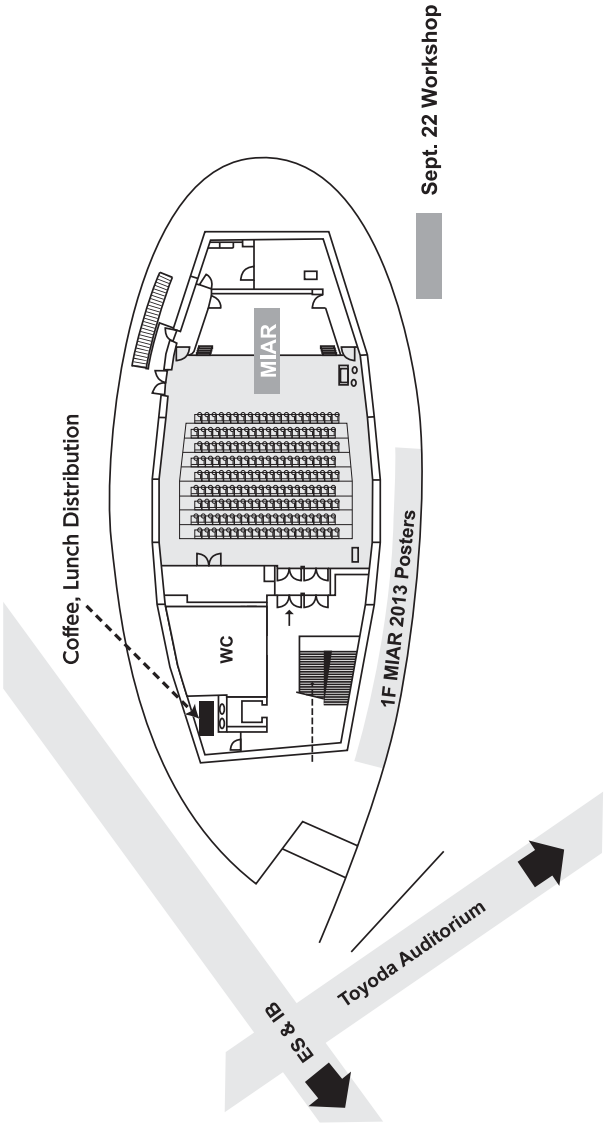

2F
MLMI ' 13
Terrace
(Workshop rooms are
downstairs)
MLMI '13 posters
Sept. 22 Workshop


1F
Coffee, Lunch Distribution
Up
Entrance
Down
(Subway)
AM:M2CAI
PM:MICCAI-STENT
MBIA 2013
posters
MMBC 2013
posters
COMRI '13
posters
CBM8
MBIA 2013
MMBC 2013
CDMRI ' 13
IB011
IB012
IB013
IB014
IB015
Up
ES & Noyori
Yotsuya Dori Street
Post Office
(ATM)


2F
Coffee, Lunch Distribution
DTI-Challenge
ES021
ASPS-BRATS
ES022
VTR 2013
ES023
AMIDA13
ES024
CLIP 2013
ES025
Posters
Down
Up
Yotsuya Dori Street
IB
Noyori Conference Hall
Post Office & Toyoda Auditorium
3F
MFCA ' 13
ES034
AM:IAAMI 2013
PM:SMMIA
ES035
ABDI 2013
ES033
ES031
ES032
Down
Sept. 22 Workshop
Sept. 22 Challenge
Sept. 22 Tutorial


E S
September 22
・Workshop
・Challenge
・Tutorial

Noyori
Conference Hall
September 22
• Workshop


Sept. 22 Workshop
MIAR
WC
Coffee, Lunch Distribution
1F MIAR 2013 Posters
Toyoda Auditorium
ES & IB

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-Il 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-Il 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-Il 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**

CBM8 (09:00 – 17:30) – Room IB011

Computational Biomechanics for Medicine VIII

http://school.mech.uwa.edu.au/CBM2013/

Organizers: Karol Miller, Adam Wittek, Poul M.F. Nielsen

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

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

15:55 - 16:20 The Shape Collapse Problem in Image Registration.
Oguz C. Durumeric, Ipek Oguz, and Gary E. Christensen

16:20 - 16:45 Sparse Gaussian graphical model of spatial distribution of anatomical landmarks - whole torso model building with training datasets of partial imaging ranges
Shouhei Hanaoka, Yoshitaka Masutani, Mitsutaka Nemoto, Yukihiro Nomura, Soichiro Miki, Takeharu Yoshikawa, Naoto Hayashi, and Kuni Ohtomo

16:45 - 17:10 Cortical Shape Analysis using the Anisotropic Global Point Signature
Anand A Joshi, Syed Ashrafulla, David W Shattuck, Hanna Damasio, and Richard M Leahy

17:10 - 17:20 Concluding remarks
Workshop chairs

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 Sembdner

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**

CDMRI '13 (08:45 – 17:15) – Room IB015

MICCAI 2013 Workshop on Computational Diffusion MRI

http://cmic.cs.ucl.ac.uk/cdmri13/

Organizers: Gemma Nedjati-Gilani, EleftheriaPanagiotaki, Lauren O'Donnell, Thomas Schultz

08:45 - 09:00	**Welcome and introduction**
09:00 - 10:00	**Challenge: White Matter Model Challenge**
09:00 - 09:07	Benoit Scherrer
09:07 - 09:14	Xinghua Zhu
09:14 - 09:21	Mohammad Alipoor
09:21 - 09:28	Lin Mu
09:28 - 09:35	Torben Schneider
09:35 - 09:42	Uran Ferizi
09:42 - 10:00	Results & discussion
10:00 - 10:30	**Coffee Break and Posters**
10:30 - 11:30	**Keynote Lecture I** Diffusion MRI: What can we retrieve from the signal? Denis Le Bihan
11:30 - 12:30	**Keynote Lecture II** Multi-atlas multi-contrast brain parcellation based on diffusion tensor imaging and application to individualized anatomical phenotype analysis Susumu Mori
12:30 - 13:30	**Lunch and Posters**
13:30 - 14:15	**Oral Session I: High angular methods** Non-Negative Spherical Deconvolution (NNSD) for Fiber Orientation Distribution Function Estimation Jian Cheng et al. Diffusion Propagator Estimation Using Radial Basis Functions YogeshRathi et al.
14:15 - 15:00	**Oral Session II:Group studies & statistical analysis** Statistical Analysis of White Matter Integrity for the Clinical Study of Specifc 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 and Posters**

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.

MICCAI-STENT (13:30 – 17:00) – Room IB012

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 Endovacular Planning of AAA Interventions (Submission)
Ivan Macia, Jon Haitz 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 ArneTangen

Stent shape estimation through a comprehensive interpretation of ivusimage (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 Kaladji, 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

MMBC 2013 (08:45 – 17:00) – Room IB014

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 Specifc 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/

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

08:30 - 08:35 **Opening Remarks**

08:35 - 09:25 **Invited Talk 1**
Surgical Workflow Analysis: Perceptual and Cognitive Factors
Guang-Zhong Yang

09:25 - 09:50 **Presentation 1**
Hierarchical approach for low-level surgical activity recognition
Christian Meißner, et al.

09:50 - 10:00 **Short Discussion**

10:00 - 10:20 **Coffee Break**

10:20 - 10:45 **Presentation 2**
Validation of a surgical process model regarding the robustness of missing sensor information"
Philipp Liebmann, et al.

10:45 - 11:10 **Presentation 3**
Intraoperative Voice Classification for Analysis of Cortical Mapping during Awake Surgery
Toshihiko Nishimura, et al.

11:10 - 11:35 **Presentation 4**
Automatic detection of electrical stimulation timing in operation videos of cortical mapping in awake brain surgery
Masanori Suganuma, et al.

11:35 - 12:25 **Invited Talk 2**
Workflow monitoring and room design by data gathering from a surgical room
Kiyoshi Izumi

12:25 - 12:30 **Closing Remarks**

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

12:00 - 12:15 Selective search and sequential detection for standard plane localization in ultrasound
Dong Ni

12:15 - 12:30 Rib detection in 3D MRI using dynamic programming based on vesselness and ridgeness
Yolanda Noorda

12:30 - 13:30 Lunch

13:30 - 14:00 Plenary Lecture 2

13:30 - 14:00 Perfusion CT/MRI and their applications to liver and pancreatic diseases
Yoshihisa Tsujii

14:00 - 15:00 Liver, Kidney, and Other Organs - Part 2

14:00 - 14:15 Modeling and simulation of soft tissue deformation
Yuping Duan

14:15 - 14:30 A statistical shape model for multiple organs based on synthesized-based learning
Atsushi Saito

14:30 - 14:45 A generic, robust and fully-automatic workflow for 3D CT liver segmentation
Romane Gauriau

14:45 - 15:00 Tumor subtype-specific parameter optimization in a hybrid active surface model for hepatic tumor segmentation of 3D liver ultrasonograms
Myungeun Lee

15:30 - 17:00 Colon and Other Gastrointestinal Tract - Virtual Colonoscopy

15:30 - 15:45 Registration of prone and supine CT colonography datasets with differing endoluminal distension
Holger Roth

15:45 - 16:00 Global colon geometric structure analysis based on geodesics and conformal flattening
Hao Peng

16:00 - 16:15 A classification-enhanced vote accumulation scheme for detecting colonic polyps
Suryakanth R Gurudu

16:15 - 16:30 A novel computer aided detection (CADe) scheme for colonic polyps based on the structure decomposition
Huafeng Wang

16:30 - 16:45 Computer-aided detection of non-polypoid flat lesions in CT colonography: observer performance study
Yasuji Ryu

16:45 - 17:00 Personalised estimation of the arterial input function for improved pharmacokinetic modelling of colorectal cancer using dceMRI
Benjamin Irving

17:00 - 17:05 Closing Session (Moderators: Organizers)

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

MBIA 2013 (08:30 – 17:00) – Room IB013

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
Junning 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
Sarah K. Madsen, Boris A. Gutman, Shantanu H. Joshi, Arthur W. Toga, Clifford R. Jack Jr., Michael W. Weiner, and Paul M. Thompson

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. Kuijf, 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
Gautam Prasad, Josh Burkart, Shantanu H. Joshi, Talia M. Nir, Arthur W. Toga, and Paul M. Thompson (Presenter: Yan Jin)

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
Faïçal 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'hotel

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
Kamyar Abhari, Roy Eagleson, John Baxter, Elvis Chen, Ali Kahn, Terry Peters and Sandrine de Ribaupierre

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**

IAAMI 2013 (08:30 – 12:30) – Room ES035

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

http://dti-challenge.org/

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. Fritzsche

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**

ASPS-BRATS (09:00 – 17:00) – Room ES022

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

AMIDA 13 (9:00 – 12:30) – Room ES024

MICCAI Grand Challenge: Assessment of Mitosis Detection Algorithms 2013

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

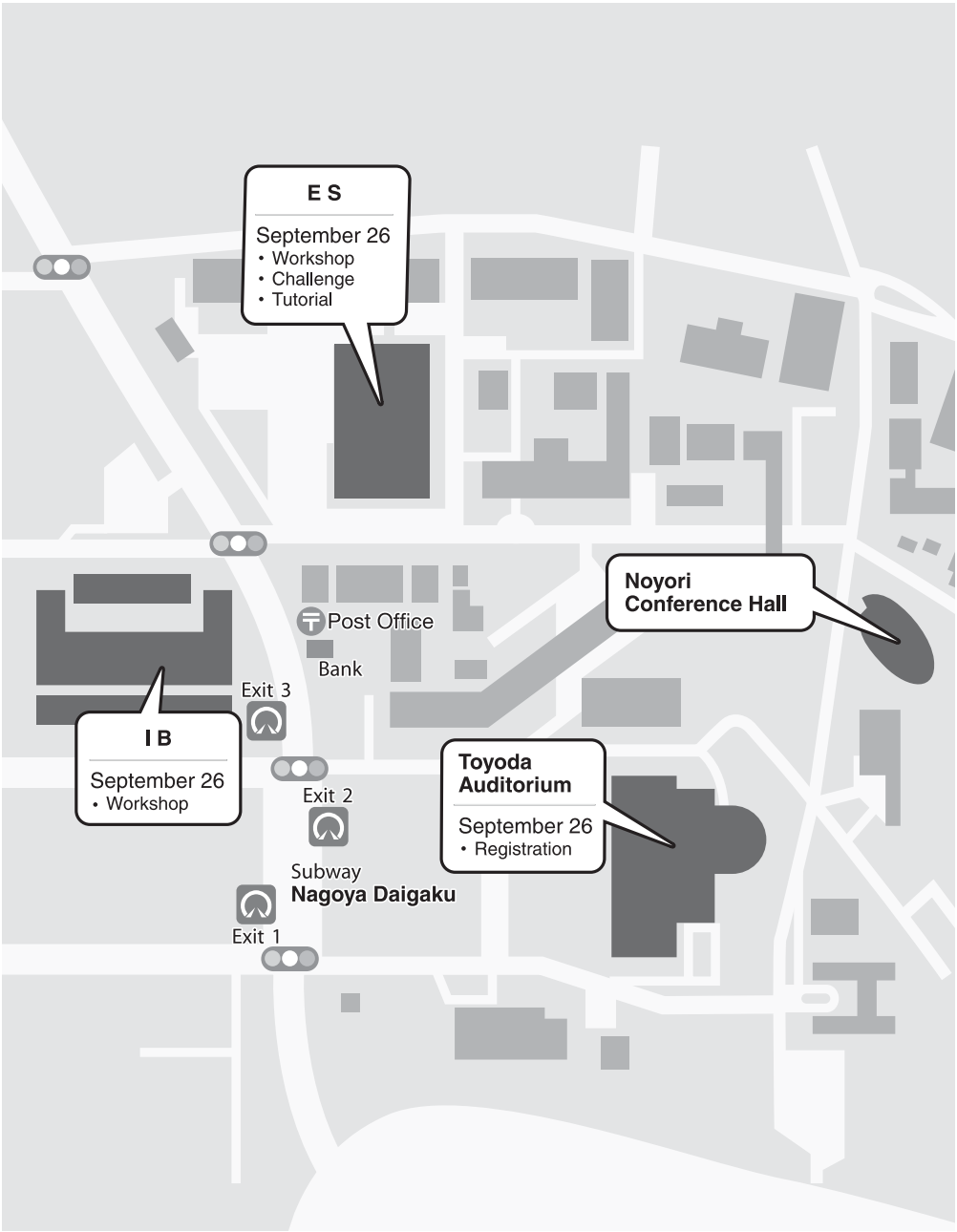
Organizers: Mitko Veta, Max A. Viergever, Josien P.W. Pluim, Nikolaos Stathonikos, Paul J. van Diest

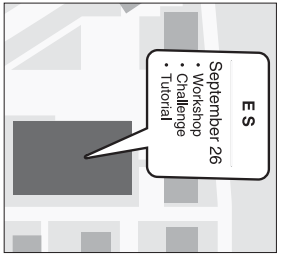
09:00	**Opening**
09:30	**Presentations of the proposed methods by the challenge participants**
11:30	**Presentation of the overall results by the organizers**
12:00	**Discussion**

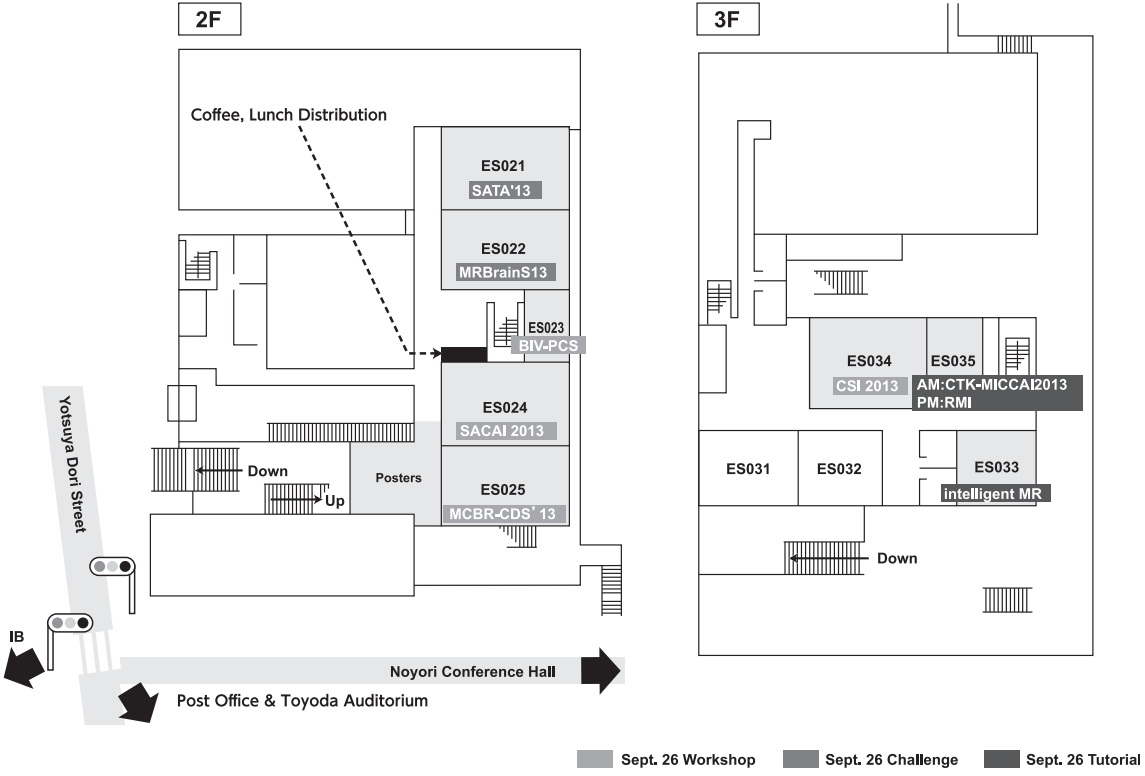
Program of MICCAI 2013 Workshops, Challenges and Tutorials

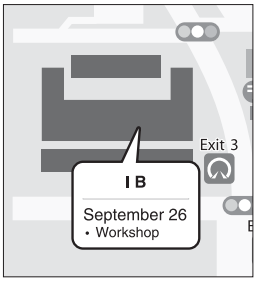
September 26

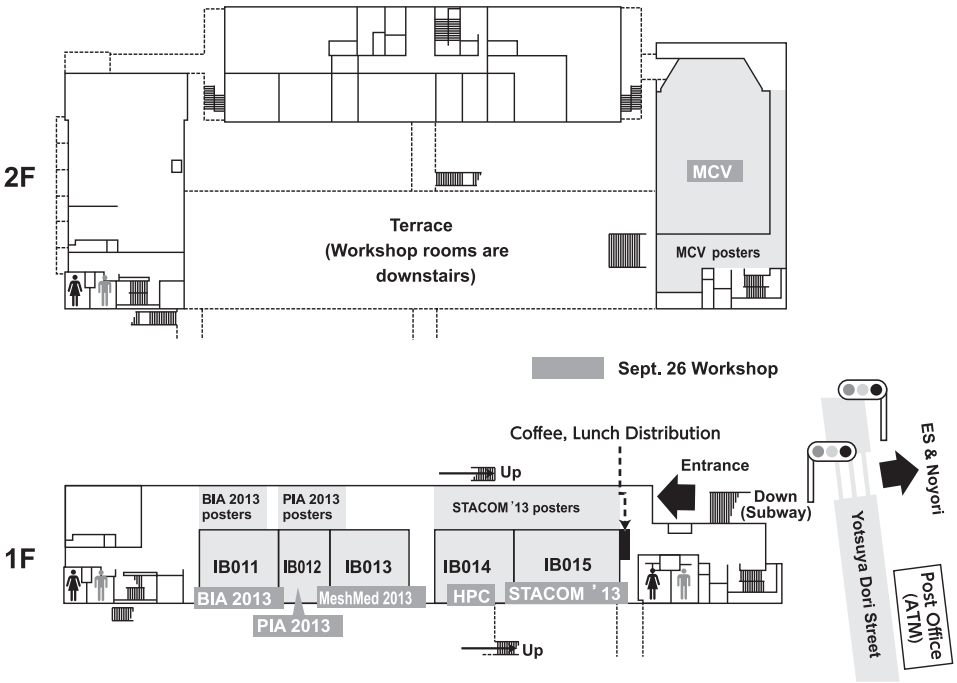
Location Maps for Thursday September 26




ES
September 26
・Workshop
・Challenge
・Tutorial


2F
Coffee, Lunch Distribution
ES021
SATA'13
ES022
MRBrainS13
ES023
BIV-PCS
ES024
SACAI 2013
ES025
MCBR-CDS' 13
Posters
Down
Up
Yotsuya Dori Street
IB
Noyori Conference Hall
Post Office & Toyoda Auditorium
3F
ES034
CSI 2013
ES035
AM:CTK-MICCAI2013
PM:RMI
ES031
ES032
ES033
intelligent MR
Down
Sept. 26 Workshop
Sept. 26 Challenge
Sept. 26 Tutorial


Exit 3
I B
September 26
• Workshop


2F
Terrace
(Workshop rooms are
downstairs)
MCV
MCV posters
Sept. 26 Workshop
1F
Coffee, Lunch Distribution
Up
Entrance
Down
(Subway)
BIA 2013
posters
PIA 2013
posters
STACOM '13 posters
IB011
IB012
IB013
IB014
IB015
BIA 2013
MeshMed 2013
HPC
STACOM ' 13
PIA 2013
Up
ES & Noyori
Yotsuya Dori Street
Post Office
(ATM)

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, Bostjan Likar, Franjo Pernus, Tomaž 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
Christian Buerger, Jochen Peters, Irina Waechter-Stehle, Frank Weber, Tobias Klinder, Steffen 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

http://www2.imm.dtu.dk/projects/MeshMed//

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

09:00 - 09:05 **Welcome**

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

https://smarts.lcsr.jhu.edu/dokuwiki/doku.php?id=event:miccai.workshop.2013

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 K.Chinzei, E. Kobayashi, T. Suzuki, J.Yamashita and Y. Yamauchi
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. Wakabayashi and K. Mori
14:50 - 15:10	**Break**
15:10 - 16:00	**Session 4: Hands-on Session** TBA
16:00 -	**Closing**

MICCAI 2013 workshop on Medical Computer Vision

http://www.medicalcomputervision.org/

Organizers: Bjoern Menze, Georg Langs, Albert Montillo, Michael Kelm, Henning Mueller, Zhuowen Tu

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 andmulti-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 & Annoucements**

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 Abugharbieh, 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

STACOM '13 (09:00 – 17:30) – Room IB015

4th International Workshop on Stastical 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 Transmitral 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 Margeta, 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 Kertzscher, 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 Medicial 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**

MCBR-CDS '13 (09:00 – 15:10) – Room ES025

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 Kuhnigk, 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**

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

BIA 2013 (09:00 – 17:00) – Room IB011

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**

Automatic Detection of Architectural Distortion in Mammograms using Sparse Overcomplete Dictionaries of a Curvelet Descriptor.
Fabián Rodrigo Narveáez 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

14:20 Effect of Reference Image Retrieval on Breast Mass Classification Performance: ROC Analysis.
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, Irith 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

09:00 - 09:10	**Brief Introduction and Overview of R,** Brian Avants, Brandon Whitcher
09:00 - 10:00	**Morphometry and fMRI in R with ANTsR** Brian Avant
10:00 - 10:30	**Coffee Break**
10:30 - 12:00	**Model Selection and Longitudinal Analysis with R** Tom Fletcher
12:00 - 12:30	**Questions & Future Plans**

Intelligent imaging: Linking MR acquisition and processing

http://www.med.umich.edu/intelligentMR/MiCCAI13tut/

Organizers: Boklye Kim, Charles R. Meyer, Daniel Rueckert, Colin Studholme, William Wells

08:30 - 08:40	**Opening** Organizers
08:40 - 10:10	**Session I: Plenary Overviews**
08:40 - 09:25	Recent advances, methodologies and applications of MRI / fMRI; 7T MRI: Game-Changer for Human Neuroscience Robert Turner
09:25 - 10:10	Neuro and Cardiac Elements of MRI: Dealing with motion in MRI in the image domain or k-space - why choose which? Jo Hajnal
10:10 - 10:30	**Coffee/Tea Break**
10:30 - 15:00	**Session II: Current Topics in MRI/fMRI Data Acquisition, Image Processing and Registration**
10:30 - 11:00	MRI/fMRI Methodology, Motion and Pitfalls Chuck Meyer
11:00 - 11:30	Recent advances in retrospective and prospective motion correction in MRI and trade-offs between these two motion correction strategies Onur Afacan
11:30 - 12:00	Magnetic Susceptibility and MRI: Distortion Correction and Tissue Characterization William Wells
12:00 - 12:30	Spin saturation artifact with head motion Boklye Kim
12:30 - 13:30	**Lunch**
13:30 - 14:00	Cardiac MRI for Reverse Engineering Cardiac Mechanics Alistair Young
14:00 - 14:30	Cardiac and respiratory MR imaging: Motion estimation and modelling Daniel Rueckert
14:30 - 15:00	Fetal/neonatal MRI acquisition and processing: Motion correction and super resolution Georg Langs
15:00 - 15:30	**Q/A and Break**
15:30 - 17:00	**Session III: Current and Potential Clinical Applications of MRI/fMRI and Image Registration**
15:30 - 16:00	Compressed sensing applications to cardiac MRI Dimitris Mataxas

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**

CTK-MICCAI 2013 (08:30 – 12:30) – Room ES035

Common architecture for algorithm development and deployment

http://www.dkfz.de/en/mbi/ctk-miccai2013/index.html

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** Chair: Bennett Landman
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 (08:30 – 17:00) – Room ES022

MICCAI Grand Challenge on MR Brain Image Segmentation

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

Organizers: Adriënne Mendrik, Geert Jan Biessels, Hugo Kuijf, Koen Vincken, Max Viergever

08:30 - 09:00	**Opening and Distribution of the Three On-Site Test Datasets**
09:00 - 12:30	**On-Site Challenge: Participants Run Their Algorithms on the Test Scans Provided at the Workshop**
10:00 - 10:30	**Coffee Break**
12:30 - 13:30	**Lunch Break (Evaluation of the on-site challenge results by the organizers)**
13:30 - 13:40	**About the MRBrainS13 Challenge**
13:40 - 14:10	MR Brain Image Segmentation: Industrial versus Academic Perspective M. Breeuwer
14:10 - 14:20	Automated Brain-Tissue Segmentation by Multi-Feature SVM Classification A. van Opbroek
14:20 - 14:30	Automatic Brain Tissue Segmentation of Multi-sequence MR images using Random Decision Forests S. Pereira
14:30 - 14:40	Multi-Atlas Brain MRI Segmentation with Multiway Cut D. Sarikaya
14:40 - 14:50	Fully automatic brain segmentation using model-guided level sets and skeleton-based models C. Wang
14:50 - 15:00	MAP-Based Framework for MR Brain Images Segmentation Based on Visual Appearance and Prior Shape A. Alansary
15:00 - 15:20	**Coffee Break**
15:20 - 15:30	Automated Walks using Machine Learning for Segmentation S. Vyas and R. Mukherjee
15:30 - 15:40	Auto-kNN: Brain Tissue Segmentation using Automatically Traind k-Nearest-Neighbor Classification H.A. Vrooman
15:40 - 15:50	Gaussian Intensity Model with Neighborhood Cues for Fluid-Tissue Categorization of Multi-Sequence MR Brain Images R. Katyal and S. Paneri
15:50 - 16:00	MR Brain Segmentation Using Decision Trees A. Carass
16:00 - 16:10	Modified Expectation Maximization Method for Automatic Segmentation of MR Brain Images R.M. Prakash

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**

Notes

MICCAI

名古屋大学