MLMI 2011 Final Program

8:30 – 8:45 Opening Remarks & Announcements

8:45 – 9:45 Keynote Address
Learning and Discovery of Clinically Useful Information from Medical Images
Prof. Daniel Rueckert (Imperial College London)

Oral Session 1: Disease Classification
Session Chair: Xiaogang Wang

9:45 – 10:00 Random Forest-Based Manifold Learning for Classification of Imaging Data in Dementia
Katherine Gray, Paul Aljabar, Rolf Heckemann, Alexander Hammers, and Daniel Rueckert

10:00 – 10:15 Anatomical Regularization on Statistical Manifolds for the Classification of Patients with Alzheimer's Disease
Remi Cuingnet, Joan Alexis Glaunès, Marie Chupin, Habib Benali, and Olivier Colliot

10:15 – 10:30 Tree Structured Model of Skin Lesion Growth Pattern via Color Based Cluster Analysis
Sina KhakAbi, Tim Lee, and M. Stella Atkins

10:30 – 10:45 Coffee Break

Oral Session 2: Anatomical Segmentation
Session Chair: Alison Noble

10:45 – 11:00 Segmenting Hippocampus from 7.0 Tesla MR Images by Combining Multiple Atlases and Auto-Context Models
Minjeong Kim, Guorong Wu, Wei Li, Li Wang, Young-Don Son, Zang-Hee Cho, and Dinggang Shen

11:00 – 11:15 Subject-Specific Cardiac Segmentation Based on Reinforcement Learning with Shape Instantiation
Lichao Wang, Su-Lin Lee, Robert Merrifield, and Guang-Zhong Yang

11:15 – 11:30 Maximum Likelihood and James-Stein Edge Estimators for Left Ventricle Tracking in 3D Echocardiography
Engin Dikici, and Fredrik Orderud

11:30 – 11:45 Automatic Segmentation of Vertebrae from Radiographs: A Sample-driven Active Shape Model Approach
Peter Mysling, Kersten Petersen, Mads Nielsen, and Martin Lillholm

11:45 – 12:00 An Effective Supervised Framework for Retinal Blood Vessel Segmentation using Local Standardisation and Bagging
Uyen Nguyen, Ramamohanarao Kotagi, Laurence Park, and Alauddin Bhuiyan

12:00 – 13:00 Lunch (on your own)

13:00 – 14:30 Poster Session (Harbour Ballroom B in 3rd floor)

Oral Session 3: Localization/Detection
Session Chair: Yiqiang Zhan

14:30 – 14:45 Automated Cephalometric Landmark Localization using Sparse Shape and Appearance Models
Johannes Keustermans, Dirk Smeets, Dirk Vandermeulen, and Paul Suetens

14:45 – 15:00 Automated Detection of Major Thoracic Structures with a Novel Online Learning Method
Nima Tajbakhsh, Hong Wu, Wenzhe Xue, and Jianming Liang

15:00 – 15:15 Segmentation of Skull Base Tumors from MRI Using A Hybrid Support Vector Machine-based Method
Jiayin Zhou, Qi Tian, Vincent Chong, Wei Xiong, Weimin Huang, and Zhimin Wang

15:15 – 15:45 Coffee Break

Oral Session 4: Prediction/Modeling

Session Chair: Jiang Li

15:45 – 16:00 A Large-Scale Manifold Learning Approach for Brain Tumor Progression Prediction
Loc Tran, Debrup Banerjee, Jihong Wang, Ashok Kumar, Fredrick McKenzie, Yaohang Li, and Jiang Li

16:00 – 16:15 Multi-Kernel Classification for Integration of Clinical and Imaging Data: Application to Prediction of Cognitive Decline in Older Adults
Roman Filipovych, Susan Resnick, and Christos Davatzikos

16:30 – 16:45 Accurate Regression-based 4D Mitral Valve Surface Reconstruction from 2D+t MRI Slices
Dime Vitanovski, Alexey Tsymbal, Razvan Ionasec, Andreas Greiser, Michaela Schmidt, Edgar Mueller, Xiaoguang Lu, Gareth Funka-Lea, Joachim Hornegger, and Dorin Comaniciu

16:45 – 17:00 Hot Spots Conjecture and Its Application to Modeling Tubular Structures
Moo Chung, Seongho Seo, Nagesh Adluru, and Houri Vorperian

17:00 - 17:15 Award Announcement and Closing Remarks

Poster Session (Harbour Ballroom B in 3rd floor)

1. Learning Statistical Correlation of Prostate Deformations for Fast Registration
   Yonghong Shi, Shu Liao, and Dinggang Shen
2. Computer-Assisted Intramedullary Nailing using Real-Time Bone Detection in 2D Ultrasound Images
   Agnès Masson-Sibut, Amir Nakib, Eric Petit, and François Leitner
3. Automated Selection of Standardized Planes From Ultrasound Volume
   Bahbibi Rahmatullah, Aris Papageorghiou, and J. Alison Noble
4. A Locally Deformable Statistical Shape Model
   Carsten Last, Simon Winkelbach, Friedrich Wahl, Klaus Eichhorn, and Friedrich Bootz
5. Monte Carlo Expectation Maximization with Hidden Markov Models to Detect Functional Networks in Resting-State fMRI
   Wei Liu, Suyash Awate, Jeffrey Anderson, Deborah Yurgelun-Todd, and Thomas Fletcher
6. DCE-MRI Analysis using Sparse Adaptive Representations
   Gabriele Chiusano, Alessandra Stagliano, Curzio Basso, and Alessandro Verri
7. Learning Optical Flow Propagation Strategies using Random Forests for Fast Segmentation in Dynamic 2D & 3D Echocardiography
   Michael Verhoek, John McManigle, and J. Alison Noble
8. A Non-rigid Registration Framework That Accommodates Pathology Detection
   Chao Lu, and James Duncan
9. Segmentation based Features for Lymph Node Detection from 3-D Chest CT
   Johannes Feulner, Kevin Zhou, Matthias Hammon, Joachim Hornegger, and Dorin Comaniciu
10. Texture analysis by a PLS based method for combined feature extraction and selection
    Joselene Marques, and Erik Dam
11. Automated Identification of Thoracolumbar Vertebrae Using Orthogonal Matching Pursuit
    Tao Wu, Bing Jian, and Sean Zhou
12. Spatial nonparametric mixed-effects model with spatial-varying coefficients for analysis of populations
    Juan Ospina, Oscar Acosta, Gael Dréan, Guillaume Cazoulat, Antoine Simon, Pascal Haigron, Renaud de Crevoisier, and Juan Correa
13. A Machine Learning Approach to Tongue Motion Analysis in 2D Ultrasound Image Sequences
    Lisa Tang, Ghassan Hamarneh, and Tim Bressmann

14. Probabilistic Graphical Model of SPECT/MRI
    Stefano Pedemonte, Alexandre Bousse, Brian Hutton, Simon Arridge, and Sebastien Ourselin
15. Directed Graph Based Image Registration
    Hongjun Jia, Guorong Wu, Qian Wang, Yaping Wang, Minjeong Kim, and Dinggang Shen
16. Improving the Classification Accuracy of the Classic RF Method by Intelligent Feature Selection and Weighted Voting of Trees with Application to Medical Image Segmentation
    Kassim Javaid, Cyrus Cooper, and J. Alison Noble
17. Network-based Classification using Cortical Thickness of AD Patients
    Dai Dai, Huiguang He, Joshua Vogelstein, and Zengguang Hou
18. Rapidly Adaptive Cell Detection using Transfer Learning with a Global Parameter
    Nhat Nguyen, Eric Norris, Mark Clemens, and Min Shin
19. Automatic Morphological Classification of Lung Cancer Subtypes with Boosting Algorithms for Optimizing Therapy
    Ching-Wei Wang, and Cheng-Ping Yu
20. Fuzzy Statistical Unsupervised Learning based Total Lesion Metabolic Activity Estimation in Positron Emission Tomography Images
    Jose George, Kathleen Vunckx, Sabine Tejpar, Christophe Deroose, Johan Nuyts, Dirk Loeckx, and Paul Suetens
21. Predicting Clinical Scores Using Semi-supervised Multimodal Relevance Vector Regression
    Bo Cheng, Daoqiang Zhang, Songcan Chen, and Dinggang Shen
22. A Comparison Study of Inferences on Graphical Model for Registering Surface Model to 3D Image
    Yoshihide Sawada, and Hidekata Hontani
23. Faster Segmentation Algorithm for Optical Coherence Tomography Images with Guaranteed Smoothness
    Lei Xu, Branislav Stojkovic, Hu Ding, Qi Song, Xiaodong Wu, Milan Sonka, and Jinhui Xu
24. Automated Nuclear Segmentation of Coherent Anti-Stokes Raman Scattering Microscopy Images by Coupling Superpixel Context Information with Artificial Neural Networks
    Ahmad Hammoudi, Fuhai Li, Liang Gao, Zhyiong Wang, Michael Thrall, Yehia Massou, and Stephen Wong
25. 3D Segmentation in CT Imagery with Conditional Random Fields and Histograms of Oriented Gradients
    Chetan Bhole, Nicholas Morsillo, and Christopher Pal
26. Automatic Human Knee Cartilage Segmentation from Multi-contrast MR Images Using Extreme Learning Machines and Discriminative Random Fields
    Kunlei Zhang, and Wenmiao Lu
27. MultiCost: Multi-stage Cost-sensitive Classification of Alzheimer's Disease
    Daoqiang Zhang, and Dinggang Shen
28. Classifying Small Lesions on Breast MRI Through Dynamic Enhancement Pattern Characterization
    Mahesh Nagarajan, Thomas Schlossbauer, Markus Huber, Gerda Leinsinger, Andrzej Krol, and Axel Wismueller
29. Computer-Aided Detection of Polyps in CT Colonography with Pixel-based Machine Learning Techniques
    Jianwu Xu, and Kenji Suzuki

Organizers

Kenji Suzuki, Fei Wang, Dinggang Shen, and Pingkun Yan