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International Workshop on
Medical Imaging and Augmented Reality

MIAR 2006

August 17-18, 2006

Regal International East Asia, Shanghai, China

<http://www.miar.info>

Session 7: CAD and Image Analysis

Chair:	David Firmin
4:00-4:30*	Computer Aided Diagnosis in Medical Imaging - <i>M. Giger</i>
4:30-4:45	Automatic Segmentation of the Aortic Dissection Membrane from 3D CTA Images (317) - <i>T. Kovács, P. Cattin, H. Alkadhi, S. Wildermuth, and G. Székely</i>
4:45-5:00	Leukocyte Detection Using Nucleus Contour Propagation (389) - <i>D. M. Ushizima, R. T. Calado, and E. G. Rizzatti</i>
5:00-5:15	Robust Click-Point Linking for Longitudinal Follow-Up Studies (252) - <i>K. Okada, X. Huang, X. Zhou, and A. Krishnan</i>
5:15-5:30	Conclusion and Student Paper Award Presentation

The Organizing Committee of MIAR '06 would like to thank the generous support from our industrial and academic sponsors, particularly Siemens Medical Systems, NDI, GE Healthcare, and Sino French Lab in Computer Science, Automation and Applied Mathematics. The best student paper awards are sponsored by NDI.



Wednesday 16th August

6:30pm Welcome reception
Regal International East Asia

Thursday, 17th August

8:45-9:00 Introduction

Session 1: Shape Modelling and Morphometry

Chair:	Chenyang Xu
9:00-9:30*	Statistics of Pose and Shape in Multi-object Complexes using Principal Geodesic Analysis (1) - <i>G. Gerig</i>
9:30-10:00*	Geodesic Image Normalization and Temporal Parameterization in the Space of Diffeomorphisms (9) - <i>J. C. Gee</i>
10:00-10:15	Multi-scale Voxel-based Morphometry via Weighted Spherical Harmonic Representation (36) - <i>M. K. Chung, L. Shen, K. M. Dalton, and R. J. Davidson</i>
10:15-10:30	A Multiscale Morphological Approach to Topology Correction of Cortical Surfaces (52) - <i>K. Li, A. D. Malony, and D. M. Tucker</i>

10:30-11:00 Coffee/Tea Break

Session 2: Patient Specific Modelling and Quantification

Chair:	G. Gerig
11:00-11:30*	High Resolution in vivo MR Imaging, Parcellation and Connectivity in the Human Cortex - <i>G. Egan</i>
11:30-11:45	Cerebral Vascular Tree Matching of 3D-RA Data Based on Tree Edit Distance (116) - <i>W. H. Tang and A. C. S. Chung</i>
11:45-12:00	Noninvasive Temperature Monitoring in a Wide Range Based on Textures of Ultrasound Images (100) - <i>S. Zhang, W. Yang, R. Yang, B. Ye, L. Chen, W. Ma, and Y. Chen</i>
12:00-12:15	A Novel Liver Perfusion Analysis Based on Active Contours and Chamfer Matching (108) - <i>G. Chen and L. Gu</i>
12:15-12:30	Multi-stage Registration for Quantification of Lung Perfusion in Chest CT Images (285) - <i>H. Hong and J. Lee</i>

12:30-2:00 Lunch

Session 3: Image Registration

Chair:	Dinggang Shen
2:00-2:30*	Detecting Connectivity between Images: MS Lesions, Cortical Thickness, and the 'Bubbles' Task in an fMRI Experiment - <i>K. Worsley</i>
2:30-2:45	A General Learning Framework for Non-rigid Image Registration (219) - <i>G. Wu, F. Qi, and D. Shen</i>
2:45-3:00	Learning-Based 2D/3D Rigid Registration Using Jensen-Shannon Divergence for Image-Guided Surgery (228) - <i>R. Liao, C. Guetter, C. Xu, Y. Sun, A. Khamene, and F. Sauer</i>
3:00-3:15	Sparse Appearance Model Based Registration of 3D Ultrasound Images (236) - <i>K. Y. E. Leung, M. van Stralen, G. van Burken, M. M. Voormolen, A. Nemes, F. J. ten Cate, N. de Jong, A. F. W. van der Steen, J. H. C. Reiber, and J. G. Bosch</i>
3:15-3:30	A Neighborhood Incorporated Method in Image Registration (244) - <i>C. Yang, T. Jiang, J. Wang, and L. Zheng</i>
3:30-4:00	Coffee/Tea Break

4:00-4:30

Chair:

One Minute Fame Poster Presentation

James Gee

- An Embedding Framework for Myocardial Velocity Processing with MRI (44) - *L. Cong, S-L. Lee, A. Huntbatch, T. Jiang, and G-Z. Yang*
- Finding Deformable Shapes by Point Set Matching through Nonparametric Belief Propagation (60) - *X. Dong and G. Zheng*
- Robust and Accurate Reconstruction of Patient-specific 3D Surface Models from Sparse Point Sets: A Sequential Three-stage Trimmed Optimization Approach (68) - *G. Zheng, X. Dong, and L-P. Nolte*
- Generalized n -D C^k B-Spline Scattered Data Approximation with Confidence Values (76) - *N. J. Tustison and J. C. Gee*
- Improved Shape Modeling of Tubular Objects Using Cylindrical Parameterization (84) - *T. Huysmans, J. Sijbers, F. Vanpoucke, and B. Verdonk*
- Application of SVD-Based Metabolite Quantification Methods in Magnetic Resonance Spectroscopic Imaging (124) - *M. Huang and S. Lu*
- An Inverse Recovery of Cardiac Electrical Propagation from Image Sequences (132) - *H. Zhang, C. L. Wong, and P. Shi*
- Tracking of Instruments in Minimally Invasive Surgery for Surgical Skill Analysis (148) - *S. Speidel, M. Delles, C. Gutt, and R. Dillmann*
- The Effect of Depth Perception on Visual-Motor Compensation in Minimal Invasive Surgery (156) - *M. Nicolaou, L. Atallah, A. James, J. Leong, A. Darzi, and G-Z. Yang*
- Efficient and Accurate Collision Detection based on Surgery Simulation (164) - *K. Xie, J. Yang, and Y. M. Zhu*
- Medical Simulation with Haptic and Graphic Feedback (171) - *S-Y. Kim*
- 3D US Imaging System for the Guidance of Uterine Adenoma and Uterine Bleeding RF Ablation (211) - *M. Ding, X. Luo, C. Cai, C. Zhou, and A. Fenster*
- A Novel 3D Correspondence-less Method for MRI and Paxinos-Watson Atlas of Rat Brain Registration (269) - *C. Cai, M. Ding, H. Lei, J. Cao, and A. Liu*
- Multi-modality Image Registration Using Gradient Vector Flow Intensity (277) - *Y. Guo, C-H. Lo, and C-C. Lu*
- List-mode Affine Rebinning for Respiratory Motion Correction in PET Cardiac Imaging (293) - *A.J. Chung, P. G. Camici, and G-Z. Yang*
- Inferring Vascular Structures in Coronary Artery Xray Angiograms Based on Multi-feature Fuzzy Recognition Algorithm (325) - *S. Zhou, W. Chen, J. Zhang, and Y. Wang*
- Hierarchical 3D Shape Model for Segmentation of 4D MR Cardiac Images (333) - *Y. Shang, G. Su, and O. Dössel*
- An Improved Statistical Approach for Cerebrovascular Tree Extraction (341) - *J. T. Hao, M. L. Li, and F. L. Tang*
- Segmentation of 3-D MRI Brain Images Using Information Propagation (348) - *J. Wang, J. Kong, Y. Lu, J. Zhang, and B. Zhang*
- Pulsative Flow Segmentation in MRA Image Series by AR Modeling and EM Algorithm (356) - *A. Gooya, H. Liao, K. Matsumiya, K. Masamune, and T. Dohi*
- An Improved 2D Colonic Polyp Segmentation Framework Based on Gradient Vector Flow Deformable Model (372) - *D. Chen, M. S. Hassouna, A. A. Farag, and R. Falk*
- Segmentation for Medical Image Using a Statistical Initial Process and a Level Set Method (380) - *W. H. Cho, S. C. Park, M. E. Lee, and S. Y. Park*

4:30-6:30

7:00-9:30

Poster viewing

Conference Dinner

Friday, 18th August

Session 4:

Chair:

9:00-9:30*

9:30-10:00*

10:00-10:15

10:15-10:30

10:30-11:00

Session 5:

Chair:

11:00-11:30 *

11:30-11:45

11:45-12:00

12:00-12:15

12:15-12:30

12:30-2:00

Session 6:

Chair:

2:00-2:30*

2:30-2:45

2:45-3:00

3:00-3:15

3:15-3:30

3:30-4:00

Brain Mapping with fMRI and NIRS

Keith Worsley

Connectivity Analysis of Human Functional MRI Data: From Linear to Nonlinear and Static to Dynamic (17) - *X. Hu*

Lessons from Brain Mapping in Surgery for Low-Grade Gliomas: Study of Cerebral Connectivity and Plasticity (25) - *H. Duffau*

Optical Mapping of the Frontal Cortex During a Surgical Knot-Tying Task: A Feasibility Study (140) - *D. Leff, P. H. Koh, R. Aggarwal, J. Leong, F. Deligianni, C. Elwell, D. T. Delpy, A. Darzi, and G-Z. Yang*

Role of 3T High Field BOLD fMRI in Brain Cortical Mapping for Glioma Involving Eloquent Areas (92) - *T. Jiang, Z. Li, S. Li, S. Li, and Z. Zhang*

Coffee/Tea Break

Image Reconstruction and Analysis

Xiaoping Hu

Recent Algorithm Advances in Computed Tomography - *X. Pan*

Simultaneous Estimation of PET Attenuation and Activity Images with Divided Difference Filters (301)

H. Liu, Y. Tian, and P. Shi

Convergent Bayesian Reconstruction for PET Using New MRF Quadratic Membrane-Plate Hybrid Multi-order Prior (309) - *Y. Chen, W. Chen, Y. Feng, and Q. Feng*

Abdominal Organ Identification Based on Atlas Registration and its Application in Fuzzy Connectedness Segmentation (364) - *Y. Zhou and J. Bai*

3D Gabor Wavelets for Evaluating Medical Image Registration Algorithms (261) - *L. Shen, D. Auer, and L. Bai*

Lunch

Interventional Imaging and Surgical Navigation

Pengcheng Shi

Interventional Cardiovascular Magnetic Resonance: Techniques and Applications - *D. Firmin*

Towards a Hybrid Navigation Interface: Comparison of a Slice Based Navigation System with In-situ Visualization (179) - *J. Traub, P. Stefan, S. M., Heining, C. Riquarts, T. Stelhorst, E. Euler, and N. Navab*

Surgical Navigation of Integral Videography Image Overlay for Open MRI-Guided Glioma Surgery (187) - *H. Liao, T. Inomata, I. Sakuma, and T. Dohi*

Automatic Pose Recovery of the Distal Locking Holes from Single Calibrated Fluoroscopic Image for Computer-assisted Intramedullary Nailing of Femoral Shaft Fractures (195) - *G. Zheng, X. Zhang, and L-P. Nolte*

A Framework for Image-Guided Breast Surgery (203) - *T. J. Carter, C. Tanner, W. R. Crum, N. Beechey-Newman, and D. J. Hawkes*

Coffee/Tea Break