

IEEE Workshop on Mathematical Methods in Biomedical Image Analysis

MMBIA 2001

Cochairs:

Lawrence Staib
Anand Rangarajan

Sunday, December 9, 2001

8:00 - 9:00 Invited Talk, Shape Analysis in Structural Neuroimaging
Guido Gerig, University of North Carolina, Chapel Hill

9:00 - 10:15 Session I: Mammography

Session Chair: Amir Amini

Detection, Synthesis and Compression in Mammographic Image Analysis
with a Hierarchical Image Probability Model
C. Spence, L. Parra, and P. Sajda

A Method for the Comparison of Biomechanical Breast Models
C. Tanner, A. Degenhard, J. A. Schnabel, A. Castellano Smith,
C. Hayes, L. I. Sonoda, M. O. Leach, R. Hose, D. L. G. Hill, and
D. J. Hawkes

Ipsilateral Multi-View CAD System for Mass Detection in Digital
Mammography
X. Sun, W. Qian, D. Song, and R. A. Clark

10:15 - 10:35 Break

10:35 - 12:15 Session II: Registration

Session Chair: tba

HAMMER: Hierarchical Attribute Matching Mechanism for Elastic
Registration
D. Shen and C. Davatzikos

Consistent Nonlinear Elastic Image Registration
G. E. Christensen and J. He

A Variational Framework for Joint Segmentation and Registration
A. Yezzi, L. Zöllei, and T. Kapur

A Statistical Approach for Estimating Brain Tumor-Induced Deformation
A. Mohamed, S. K. Kyriacou, and C. Davatzikos

12:15 - 1:45 Lunch

1:45 - 3:25 Session III: Probabilistic Methods

Session Chair: Dimitris Metaxas

A MAP Framework for Tag Line Detection in SPAMM Data Using Markov Random Fields on the B-Spline Solid
Y. Chen and A. A. Amini

Nonparametric Training of Snakes to Find Indistinct Boundaries
S. D. Fenster, C.-B. G. Kuo, and J. R. Kender

Tracking Liver Motion Using 3-D Ultrasound and a Surface-Based Statistical Shape Model
A. P. King, J. M. Blackall, G. P. Penney, and D. J. Hawkes

Dense Surface Point Distribution Models of the Human Face
T. J. Hutton, B. F. Buxton, and P. Hammond

3:25 - 3:45 Break

3:45 - 5:00 Session IV: Detection

Session Chair: James Duncan

A Spatio-Temporal Model-Based Statistical Approach to Detect Evolving Multiple Sclerosis Lesions
D. Rey, J. Stoeckel, G. Malandain, and N. Ayache

Data-Driven Analysis of Hemodynamic Response Delay in Event-Related fMRI Using Wavelet Transform
T. Zui, S. Kobashi, Y. T. Kitamura, Y. Hata, and T. Yanagida

Revisiting Non-Parametric Activation Detection on fMRI Time Series
B. Thirion and O. Faugeras

Monday, December 10, 2001

8:00 - 9:00 Invited Talk, Recent Advances in Cardiac Imaging using HARP MRI
Jerry Prince, Johns Hopkins University

9:00 - 10:40 Session V: Segmentation

Session Chair: Ben Kimia

A Non-Linear Gray-Level Appearance Model Improves Active Shape Model Segmentation
B. van Ginneken, A. F. Frangi, J. J. Staal, B. M. ter Haar Romeny, and M. A. Viergever

Cortical Surface Reconstruction Using a Topology Preserving Geometric Deformable Model
X. Han, C. Xu, D. Tosun, and J. L. Prince

Segmentation of Dense Leukocyte Clusters
B. Nilsson and A. Heyden

Vessel Detection by Mean Shift-Based Ray Propagation
H. Tek, D. Comaniciu, and J. P. Williams

10:40 - 11:00 Break

11:00 - 12:15 Session VIa: Shape

Session Chair: Christos Davatzikos

Tumor-Induced Structural and Radiometric Asymmetry in Brain Images
P. Lorenzen, S. Joshi, G. Gerig, and E. Bullitt

Shape Analysis of Brain Ventricles Using SPHARM
G. Gerig, M. Styner, D. Jones, D. Weinberger, and J. Lieberman

3D Image Interpolation Based on Directional Coherence
Y. Wang, Z. Zhang, and B. Guo

12:15 - 1:45 Lunch

1:45 - 2:35 Session VIb: Shape

Learning an Atlas from Unlabeled Point-Sets
H. Chui and A. Rangarajan

Bee Brains, B-Splines and Computational Democracy: Generating an
Average Shape Atlas
T. Rohlfing, R. Brandt, C. R. Maurer, Jr., and R. Menzel

2:25 - 3:25 Session VIIa: Acquisition-Based Image Analysis

Session Chair: Nicholas Ayache

Deformation Correction in Ultrasound Images Using Contact Force Measurements
M. R. Burcher, L. Han, and J. A. Noble

Fine-Scale Motion Detection Using Intrinsic List Mode PET Information
G. J. Klein, B. W. Reutter, E. H. Botvinick, T. F. Budinger, and R. H. Huesman

3:25 - 3:45 Break

3:45 - 5:00 Session VIIb: Acquisition-Based Image Analysis

Representation of Shape in Ultrasonic Images with a Physically-Based
Image Model
J. W. Trobaugh and R. M. Arthur

Retrospective Heel Effect Correction in Conventional Radiography
G. Behiels, F. Maes, D. Vandermeulen, and P. Suetens

A Stereo-Guided Biomechanical Model for Volumetric Deformation Analysis
O. Škrinjar, A. Nabavi, and J. Duncan

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