

CBMS **2006**
June 22-23
Salt Lake City,
Utah



IEEE

THE 19th IEEE INTERNATIONAL SYMPOSIUM ON COMPUTER-BASED MEDICAL SYSTEMS

Red Lion Hotel Salt Lake Downtown
Salt Lake City, UT



Technical Program

Sponsored by
IEEE Computer Society Technical Committee on Computation Medicine
Texas Tech University College of Engineering
Brigham Young University

In association with
ACM



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Special Events

RECEPTION:

Wednesday, June 21, 6:00-8:00 pm, Wasatch I & II
No additional charge for registered CBMS attendees.

BANQUET:

Thursday, June 22, 6:00-8:00 pm, Wasatch I & II
No additional charge for registered CBMS attendees.

CONTINENTAL BREAKFAST, LUNCH AND BREAKS:

Thursday, June 22 & Friday, June 23, Wasatch I & II
7:45-8:15 am, 9:40-10:00am, 12:00 -1:00 pm, and 2:40-3:00 pm
No additional charge for registered CBMS attendees.

KEYNOTE SPEECH:

Thursday, June 22, Wasatch III

POSTER SESSION:

Thursday, June 22 5:00 – 6:00 pm, foyer area

Conference Information

CONFERENCE REGISTRATION:

Sandi Willingham, Texas Tech Univ.,
Tel: 806-742-3533, Fax: 806-742-1245, Email: Sandi.Willingham@ttu.edu

SPEAKER A/V INFORMATION:

All of the presentation rooms are equipped with laptop projectors. If you are not bringing your own laptop, please have your Power Point presentation saved on a CD ROM. The Conference laptops have MS Windows XP OS and Microsoft Office 2003, including Power Point. Please check in with your session chairs before your session starts and ensure that your presentation will work with the equipment provided.

POSTER SESSION:

Poster size: 3 ft (W) x 4 ft (H). (Approximately 0.9 x 1.3 meters)
Posters should be posted before 12:00 pm on Thursday and can be removed after 6:00 pm

CONFERENCE OVERVIEW

	WEDNESDAY 06/21/06	THURSDAY 06/22/06				FRIDAY 06/23/06			
7:45 am – 8:15 am		BREAKFAST Wasatch I & II				BREAKFAST Wasatch I & II			
8:20 am – 9:40 am		OPENING CEREMONY AND KEYNOTE SPEECH				GS-7 Medical Image Segmentation	ST-13 Bioinformatics Visualization in 3D	GS-11 Web-based Delivery of Medical Information	ST-12 Advances in Medical Simulation
		Wasatch III				Cascade I	Cascade II	Cascade III	Timpanogos
9:40-10:00 am		MORNING BREAK Wasatch I & II				MORNING BREAK Wasatch I & II			
10:00 am – 11:40 noon		ST-1 Bioinformatics & its Medical Applications	ST-3 I Grids for Biomedicine & Bioinformatics I	GS-4 Decision Support Systems	ST-4 Intelligent Patient Management	ST-5 Analysis and Retrieval of Biomarkers from Large Image Database	ST-8 Intelligent Analysis of Text & Multimedia Data	GS-13 Intelligent Biomedical Knowledge Discovery	ST-4 Intelligent Patient Management II & ST-7 Open Sources in Health and Medical Systems
		Cascade I	Cascade II	Cascade III	Timpanogos	Cascade I	Cascade II	Cascade III	Timpanogos
12:00 noon – 1:00 pm		LUNCH Wasatch I & II				LUNCH Wasatch I & II			
1:00 pm – 2:40 pm		ST-2 Data Mining I	ST-3 Grids for Biomedicine & Bioinformatics II & ST-9 Management and Analysis of Proteomics Data I	GS-1 Software Systems in Medicine I	GS-10 Medical Databases and Information Systems I	ST-11 Ontologies for Biomedical Systems I	GS-6 Signal and Image Processing in Medicine I	GS-2 Computer Aided Diagnosis I	GS-9 Network and Telemedicine Systems I
		Cascade I	Cascade II	Cascade III	Timpanogos	Cascade I	Cascade II	Cascade III	Timpanogos
2:40 pm – 3:00 pm		AFTERNOON BREAK Wasatch I & II				AFTERNOON BREAK Wasatch I & II			
3:00 pm – 17:00 pm		ST-2 Data Mining II	ST-9 Management and Analysis of Proteomics Data II	GS-1 Software Systems in Medicine II	GS-10 Medical Databases and Information Systems II	ST-11 Ontologies for Biomedical Systems II	GS-6 Signal and Image Processing in Medicine II	GS-2 Computer Aided Diagnosis II & GS-5 Medical Devices with Embedded Computers	GS-9 Network and Telemedicine Systems II
		Cascade I	Cascade II	Cascade III	Timpanogos	Cascade I	Cascade II	Cascade III	Timpanogos
Evening	Reception 6:00 pm – 8:00 pm	Poster Presentation 5:00 pm – 6:00 pm		Banquet 6:00 pm – 8:00 pm					
	Wasatch I & II	Foyer Area		Wasatch I & II					

SCHEDULE OF SESSIONS

Thursday, June 22, 2006

ST-1 Bioinformatics and its Medical Applications, 10:00:00-11:40:00, Cascade I

Chaired by Nadia Bolshakova

1. Computational Approaches to Supporting Large-Scale Analysis of Photoreceptor-Enriched Gene Expression
Haiying Wang, Huiru Zheng, Francisco Azuaje
2. Comparison of the Data-based and Gene Ontology-based Approaches to Cluster Validation Methods for Gene Microarrays
Nadia Bolshakova, Anton Zamolotskikh, Pádraig Cunningham
3. Dynamic Bayesian networks in modelling cellular systems: a critical appraisal on simulated data
Fulvia Ferrazzi, Paola Sebastiani, Isaac S Kohane, Marco F Ramoni, Riccardo Bellazzi
4. Identifying a Central Nervous System Perturbation that Explains Peripheral Hypocortisolism by Modeling the HPA Axis
Shakti Gupta, Eric Aslakson, Suzanne Vernon
5. Incorporating Gene Ontology in Clustering Gene Expression Data
Rafal Kustra, Adam Zagdanski

ST-3 Grids for Biomedicine and Bioinformatics I, 10:00:00-11:40:00, Cascade II

Chaired by Maria Mirto

1. A Distributed Workflow Management System for Automated Medical Image Analysis and Logistics
Jeroen Snel, Silvia Olabarriaga, Johan Alkemade, Hugo Gratama van Andel, Aart Nederveen, Charles Majoie, Gerard den Heeten, Marcel van Straten, Robert Belleman
2. A Split&Merge Data Management Architecture in a Grid Environment
Giovanni Aloisio, Massimo Cafaro, Sandro Fiore, Maria Mirto
3. Lessons Learned from MammoGrid for Integrated Biomedical Solutions
Richard McClatchey, David Manset, Anthony E Solomonides
4. Grid-Enabled Bio-Sample Management Application for Data-Intensive Biomarker Analysis
Erik Lickerman, Lynn Bry, Neil Herring, Yanni Pandelidis, Nighat Afsheen, Azita Sharif
5. Dorian: Grid Service Infrastructure for Identity Management and Federation
Stephen Langella, Scott Oster, Shannon Hastings, Frank Siebenlist, Tahsin Kurc, Joel Saltz

GS-4 Decision Support Systems, 10:00:00-11:40:00, Cascade III

Chaired by Caetano Traina

1. A Decision Support System for the Diagnosis of Coronary Artery Disease
Markos G. Tsipouras, Themis P. Exarchos, Dimitrios I. Fotiadis, Anna Kotsia, Aikaterini Naka, Lampros K. Michalis
2. Image Retrieval-Based Decision Support System for Dermatoscopic Images
Md. Mahmudur Rahman, Bipin Desai, Prabir Bhattacharya
3. A Modified Generalized RBF Model with EM-based Learning Algorithm for Medical Applications
Li Ma, Wahab Abdul, Chai Quek
4. Telederm: Enhancing Dermatological Diagnosis for Rural and Remote Communities
Monica Ou, Geoff West, Mihai Lazarescu, Chris Clay
5. Risk Stratification in Assessing Risk in Coronary Artery Bypass Surgery
Mike Rees, Jitesh Dineschandra

ST-4 Intelligent Patient Management, 10:00:00-11:40:00, Timpanogos

Chaired by Adele Marshall

1. Using Markov Models to assess the Performance of a Health and Community Care System
Sally McClean, Malcolm Faddy, Peter Millard
2. A Monte Carlo Simulation Model to Assess Volunteer Response Times in a Public Access Defibrillation Scheme in Northern Ireland
Adele Marshall, Karen Cairns, Frank Kee, Michael Moore, Andrew Hamilton, Jennifer Adgey,
3. A method for determining an emergency readmission time window for better patient management
Eren Demir, Thierry Chausalet, Haijeng Xie, Peter Millard
4. Optimization in a Health Care System: a Liver Transplantation Example
Gustavo Torres, Ricardo Ferreira, Henrique Luna, Agnaldo Lima
5. A system for patient management based discrete-event simulation and hierarchical clustering
Anthony Codrington-Virtue, Thierry Chausalet, Peter Millard, Paul Whittlestone, John Kelly

ST-2 Data Mining I, 13:00:00-14:40:00, Cascade I

Chaired by Seppo Puuronen

1. Efficient Rotation Invariant Retrieval of Shapes with Applications in Medical Databases
Selina Chu, Shrikanth Narayanan, C.-C. Jay Kuo
2. Handling Local Concept Drift with Dynamic Integration of Classifiers: Domain of Antibiotic Resistance in Nosocomial Infections
Alexey Tsymbal, Mykola Pechenizkiy, Pádraig Cunningham, Seppo Puuronen

3. Clustering Fetal Heart Rate Tracings by Compression
Cristina Costa Santos, João Bernardes, Paul Vitányi, Luís Antunes
4. Using Visual Interpretation of Small Ensembles in Microarray Analysis
Gregor Stiglic, Matej Mertik, Peter Kokol
5. Incorporating Data Mining Applications into Clinical Guidelines
Reza Sherafat Kazemzadeh, Kamran Sartipi

ST-3 Grids for Biomedicine and Bioinformatics II, 13:00:00-13:40:00, Cascade II

Chaired by Alfredo Tirado Ramos

1. A Conceptual Grid Architecture for Interactive Biomedical Applications
Alfredo Tirado-Ramos, Peter M.A. Sloot
2. GeneGrid: From "Virtual" Bioinformatics laboratory to "Smart" Bioinformatics laboratory
Sachin Wasnik, Paul Donachy, Terence Harmer, Ron Perrott, P. V. Jithesh, Mark McCurley, Jim Johnston, Michael Townsley, Shane Mckee,

ST-9 Computational Proteomics: Management and Analysis of Proteomics Data I, 13:40:00-14:40:00, Cascade II

Chaired by Alfredo Tirado Ramos

1. Analysis and Classification of Proteomics Data, a Case Study
P.H. Guzzi, M. Cannataro, M. Gaspari, T. Mazza, B. Quaresima, P. Veltri, F.S. Costanzo
2. Analysis and Visualization of Proteomic Data by Fuzzy labeled Self-Organizing Maps
Frank-Michael Schleif, Thomas Elssner, Markus Kostrzewa, Thomas Villmann, Barbara Hammer
3. Compression of LC/MS Proteomic Data
Agnieszka Miguel, John Keane, Jeffrey Whiteaker, Heidi Zhang, Amanda Paulovich

GS-1 Software Systems in Medicine I, 13:00:00-14:40:00, Cascade III

Chaired by Riccardo Bellazzi

1. A Leaf Sequencing Software for Intensity-Modulated Radiation Therapy
Shuang Luan, Chao Wang, Damy Chen, Xiaobo Hu
2. LENUS - The Hospital Content Management System
Dirk Krechel, Markus Hartbauer, Kerstin Maximini
3. Distributed Biomedical Database for Public Health Research
Yavuz Tor, Richard H. Fowler, Charles Harlow, Chaitanya Jasti, Zhixiang Chen
4. Properties of Confidentiality Requirements
Adeniyi Onabajo, Jens Jahnke
5. How to break access control in a controlled manner?
Ana Ferreira, Ricardo Correia, Luis Antunes, Pedro Farinha, Ernesto Palhares, David Chadwick, Altamiro Costa-Pereira

GS-10 Medical Databases and Information Systems I, 13:00:00-14:40:00, Timpanogos

Chaired by Sally McClean

1. A prototype infrastructure for the secure aggregation of imaging and pathology data for colorectal cancer care
Mark Slaymaker, Andrew Simpson, Mike Brady, David Gavaghan, Fiona Reddington, Phil Quirke
2. FreeFlowDB: Storage, Querying and Interacting with Structure-Activity Information from High-Throughput Drug Discovery
Rahul Singh, Elinor Velasquez, Preeti Vijayant, Emmanuel Yera
3. Relevance feedback query refinement for PDF medical journal articles
Ammon Christiansen, D.J. Lee
4. Optimizing Ranked Retrieval over Categorical Attributes
Seung-won Hwang
5. Design Considerations for a Reusable Medical Database
Chandrashekar Natarajan, Gautam Muralidhar, Srinivas K.S, Vijayananda J

ST-2 Data Mining II, 15:00:00-16:40:00, Cascade I

Chaired by Alexey Tsymbal

1. Machine learning techniques to enable closed-loop control in anesthesia
Olivier Caelen, Gianluca Bontempi, Eddy Coussaert, Luc Barvais, François Clément
2. Mining HLA Patterns Explaining Liver Diseases
Michele Berlingerio, Francesco Bonchi, Silvia Chelazzi, Michele Curcio, Fosca Giannotti, Fabrizio Scatena
3. Class Noise and Supervised Learning in Medical Domains: The Effect of Feature Extraction
Mykola Pechenizkiy, Alexey Tsymbal, Seppo Puuronen, Oleksandr Pechenizkiy
4. Caffeine Intake, Race, and Risk of Invasive Breast Cancer: Lessons Learned from Data Mining a Clinical Database
Susan Maskery, Yonghong Zhang, Hai Hu, Craig Shriver, Jeffrey Hooke, Michael Liebman
5. Using decision trees for real-time ischemia detection
Lacramioara Dranca, Alfredo Goñi, Arantza Illarramendi

ST-9 Computational Proteomics: Management and Analysis of Proteomics Data II, 15:00:00-16:40:00, Cascade II

Chaired by Mario Cannataro

1. JSSPrediction: a Framework to Predict Protein Secondary Structures Using Integration
Luigi Palopoli, Simona Ester Rombo, Giorgio Terracina, Giuseppe Tradigo, Pierangelo Veltri

2. Towards the Management of Information Quality in Proteomics
Alun Preece, Binling Jin, Paolo Missier, Suzanne Embury, David Stead, Al Brown
3. Proteome profiling without selection bias
Annalisa Barla, Bettina Irlinger, Stefano Merler, Giuseppe Jurman, Silvano Paoli, Cesare Furlanello
4. MS2DB: An Algorithmic Approach to Determine Disulfide Linkage Patterns in Proteins by Utilizing Tandem Mass Spectrometric Data,
Timothy Lee, Rahul Singh, Ten-Yang Yen, Bruce Macher
5. On Preprocessing of SELDI-MS Data and its Evaluation
Julien Prados, Alexandros Kalousis, Melanie Hilario

GS-1 Software Systems in Medicine II, 15:00:00-16:40:00, Cascade III

Chaired by Agma Traina

1. Active-RFID System Accuracy and its Implications for Clinical Applications
Duncan Clarke, Adrian Park
2. Generic Visualization and Manipulation Framework for Three-Dimensional Medical Environments
Brian Tani, Tiago Nobrega, Thiago dos Santos, Aldo v. Wangenheim
3. A Study of Community Care Platform Architecture
Ying-Hsu Chen, Shu-Ling Hsiao, Yu-Chia Hsu
4. A Query-based Medical Information Summarization System Using Ontology Knowledge
Ping Chen, Rakesh Verma
5. A modular and evolutive software for patient modeling using components, design patterns and a formal XML-based component management system
Jean-Baptiste Fasquel, Guillaume Brocker, Johan Moreau, Vincent Agnus, Nicolas Papier, Christophe Koehl, Luc Soler, Jacques Marescaux

GS-10 Medical Databases and Information Systems II, 15:00:00-17:00:00, Timpanogos

Chaired by Marina Krol

1. The Challenges of developing a collaborative data and compute grid for Neurosciences
John Geddes, Clare Mackay, Sharon Lloyd, Andrew Simpson, David Power, Douglas Russell, Mila Katarova, Martin Rossor, Nick Fox, Jonathon Fletcher, Derek Hil, Kate McLeish, Joseph Hajnal, Stephen Lawrie, Dominic Job, Andrew McIntosh, Joanna Wardlaw, Peter Sandercock, Jeb Palmer, Dave Perry, Rob Procter, Jenny Ure, Philip Bath, Graham Watson
2. A framework for Data and Web Services semantic mediation in Peer-to-Peer based Medical Information Systems
Mahmoud Barhamgi, Djamel Benslimane, Pierre-Antoine Champin
3. Analyzing DICOM and non-DICOM Features in Content-Based Medical Image Retrieval: A Multi-Layer Approach
Antonio da Luz Jr., Daniel Abdala, Aldo von Wangenheim, Eros Comunello
4. SemPub: An Ontology Based Semantic Literature Retrieval System
Raja Loganathanaraj, Badri Narayanan
5. Use of Workflow Technology Tools to Analyze Medical Data
Vojtech Huser, Roberto Rocha, Brent James
6. A Scalable Multi-tier Architecture for the National Taiwan University Hospital Information System based on HL7 Standard
T. H. Yang, P. H. Cheng, C. H. Yang, F. Lai, C. L. Chen, H. H. Lee, K. P. Hsu, C. H. Chen, C. T. Tan, Y. S. Sun

Poster Presentation, 17:00:00-18:00:00

Chaired by James Archibald

1. Pattern Recognition Using Hybrid Optimization for a Robot Controlled by Human Thoughts
guozheng yan, banghua yang, shuo chen, rongguo yan
2. Personal Heart Monitoring System using Smart Phones to detect life threatening Arrhythmias
Peter Leijdekkers, Valerie Gay
3. Evaluation of an Online Analogical Patient Simulation Program
Gregory Thompson, Robert Morrison, Keith Holyoak, Terry Clark
4. A preliminary study of respiratory variations in the photoplethysmogram during lower body negative pressure
Suzanne Wendelken, Stephen Linder, Susan McGrath
5. An Aid System to the Medical Diagnosis of Patients with Neurological Problems
Elba Quirino, Fabio Paraguaçu, George Souza
6. Synergy of Symmetric Region Grow and Active Contour in Reconstruction of a 3D Rat
Shu-Yen Wan, Chian-Hung Hou
7. PsyGrid: Applying e-Science to Epidemiology
John Ainsworth, Robert Harper, Ismael Juma, Iain Buchan
8. Automatic Segmentation of Neck CT images
Chia-Chi Teng, Linda Shapiro, Ira Kalet
9. Quantitative Analysis of Histopathological Features of Precancerous Lesion and Condition Using Image Processing Technique
Abhijeet Jadhav, Swapna Banerjee, P K Datta, R R Paul, Mausami Pal, P Banerjee, K Chaudhuri, J Chatterjee
10. Medical Image Registration and Fusion with 3D CT and MR data of Head
Chih-Hua Huang, Ching-Fen Jiang, Wen-Hsu Sung
11. Model Reference Adaptive Control on Glucose for the Treatment of Diabetes Mellitus
Wahab Abdul, Yew Kuen Kong, Chai Quek

12. Segmentation of Calcification Regions in Intravascular Ultrasound Images by Adaptive Thresholding
Esmeraldo dos Santos Filho, Yoshifumi Saijo, Tomoyuki Yambe, Akira Tanaka, Makoto Yoshizawa
13. A Noninvasive Auto-estimation System for Hemodynamic Parameters of Pulmonary Circulation
Yu Ma, Yuanyuan Wang, Xiaodong Cai, Weiqi Wang, Yuqi Zhang, Shubao Chen
14. Pulse Contour Variability Before and After Exercise
Lisheng Xu, Kuanquan Wang, Lu Wang, Naimin Li
15. Identifying lymphoma in microscopy images with Classificational Cellular Automata
Petra Povalej, Mateja Verliè, Peter Kokol, Jose Luis Sanches de la Rosa, Jose Sigut
16. Pre-Indexing for Fast Partial Shape Matching of Vertebrae Images
Xiaoqian Xu, D. J. Lee, Sameer Antani, L. R. Long
17. A Generic Framework: From Clinical Notes to Electronic Medical Records
Hyoil Han, Yoori Choi, Yoo Myung Choi, Ari Brooks
18. Automatic Internal Medicine Diagnostics Using Statistical Imaging Methods
Daniel Smutek, Akinobu Shimizu, Ludvik Tesar, Hidefumi Kobatake, Shigeru Nawano, Stepan Svacina
19. Development of a Computer-aided Tool for Evaluation and Training in 3D Spatial Cognitive Function
Ching-Fen Jiang, De-Kai Chen, Yuan-Si Li, Jheng-Long Kuo
20. On the interest of using the HL7 CDA Release 2 for the exchange of annotated medical documents
Michel Treins, Olivier Curé, Gabriella Salzano
21. Infrastructure of Stream Data Mining, Fusion and Management for Monitored Patients
Hyoil Han, Han C. Ryoo, Herbert Patrick
22. Rapid answer retrieval from clinical practice guidelines at the point of care
Sek-Kwong Poon, Roberto A Rocha, Guilherme De Fiol

Friday, June 23, 2006

GS-7 Medical Image Segmentation, 08:20:00-09:40:00, Cascade I

Chaired by Rodney Long

1. Computer-aided evaluation of protein expression in pathological tissue images
Elisa Ficarra, Luca Benini, Giovanni De Micheli, Enrico Macii
2. Asymmetric Affinity in Fuzzy Connectedness Segmentation for Oral Contrast-Enhanced CT Colonography
Marek Franaszek, Ronald Summers
3. Blood Vessel Detection via a Multi-window Parameter Transform
Katia Estabridis, Rui Defigueiredo
4. The Optimisation of Thresholding Techniques for the Identification of Choroidal Neovascular Membranes in Exudative Age-Related Macular Degeneration
Eamonn Brankin, Paul McCullagh, Norman Black, William Patton, Alyson Muldrew

ST-13 Bioinformatics Visualization in 3D, 08:20:00-09:40:00, Cascade II

Chaired by Andrei Turinsky

1. Graph Drawing Tools for Bioinformatics Research: An Overview
Kay C. Wiese, Christina Eicher
2. jViz.Rna - An Interactive Graphical Tool for Visualizing RNA Secondary Structure Including Pseudoknots
Kay C. Wiese, Edward Glen
3. Multi-Variate Visualization of Cardiac Virtual Tissue
James Handley, Richard Clayton, Ken Brodlie
4. Using Time Decompositions to Analyze PubMed Abstracts
Rui Zhang, Parvathi Chundi

GS-11 Web-based Delivery of Medical Information, 08:20:00-09:40:00, Cascade III

Chaired by Sameer Antani

1. A Framework for Web-based Interactive Applications of High-Resolution 3D Medical Image Data
Danzhou Liu, Kien A. Hua, Kiminobu Sugaya
2. Web-Based Distributed Simulation and Data Management Services for Medical Applications
Masashi Nakagawa, Kazunori Nozaki, Shinji Shimojo
3. Automatic Recognition of Text Difficulty from Consumers Health Information
Yunli Wang
4. Tracking Changes in Healthcare Documents
Sudarshan Chawathe

ST-12 Advances in Medical Simulation, 08:20:00-09:40:00, Timpanogos

Chaired by Elisa Barney Smith

1. Real-time simulation and visualization of subject-specific 3D lung dynamics
Anand Santhanam, Cali Fidopiastis, Paul Davenport, Katja Langen, Sanford Meeks, Jannick Rolland
2. Soft Tissue Deformation and Cutting Simulation for the Multimodal Surgery Training
Yi-Je Lim, John Hu, Chuyin Chang, Neil Tardella
3. Modeling the Health of Refugee Camps: An Agent-Based Computational Approach
James Anderson, Alok Chaturvedi, David Lengacher, Mike Cibulskis

4. A Training System for Photodynamic Therapy using Modeling and Simulation
Eduardo Barriga, Stephen Russell, Michael Abramoff, Robert Brittain, Russell Waymire, Anne Edwards, Richard Engstrom, Bert David, Peter Soliz

ST-5 Analysis and Retrieval of Biomarkers from Large Image Databases, 10:00:00-11:40:00, Cascade I

Chaired by Brian Nutter

1. Application of Maximum Entropy-Based Image Resizing to Biomedical Imaging
Pingli Kao, Brian Nutter
2. Automatic Medical Image Annotation and Retrieval Using SECC
Jian Yao, Sameer Antani, Rodney Long, George Thoma, Zhongfei Zhang
3. Technology for medical education, research, and disease screening by exploitation of biomarkers in a large collection of uterine cervix images
L. Rodney Long, Sameer Antani, Jose Jeronimo, Mark Schiffman, Mike Bopf, Leif Neve, Carl Cornwell, Scott R. Budihas, George R. Thoma
4. Classification of Cervix Lesions Using Filter Bank-Based Texture Models
Yeshwanth Srinivasan, Brian Nutter, Sunanda Mitra, Benny Phillips, Eric Sinzinger

ST-8 Intelligent Analysis of Text and Multimedia Data, 10:00:00-11:40:00, Cascade II

Chaired by Hyoil Han

1. Fighting the Semantic Gap on CBIR Systems through New Relevance Feedback Techniques
Agma Traina, Joselene Marques, Caetano Traina
2. Statistical Association Rules and Relevance Feedback: Powerful Allies to Improve the Retrieval of Medical Images
Marcela Xavier Ribeiro, Joselene Marques, Agma Juci Machado Traina, Caetano Traina Jr
3. An Automated Gridding and Segmentation Method for cDNA Microarray Image Analysis
Wei-bang Chen, Chengcui Zhang, Wen-lin Liu
4. Distance Functions Association for Content-Based Image Retrieval using Multiple Comparison Criteria
Ives Pola, Agma Traina, Caetano Traina
5. Automatic Extraction of Bibliographic Information from Biomedical Online Journal Articles Using a String Matching Algorithm
Jongwoo Kim, Daniel X. Le, George R. Thoma

GS-13 Intelligent Biomedical Knowledge Discovery, 10:00:00-11:40:00, Cascade III

Chaired by Wallapak Tavanapong

1. Semantically Based Data Integration Environment for Biomedical Research
Vadim Astakhov, Amarnath Gupta, Jeffrey Grethe, Edward Ross, David Little, Aylin Yilmaz, Xufei Qian, Simone Santini, Maryann Martone, Mark Ellisman
2. Discovering Gene Clusters via Integrated Analysis on Time-Series and Group-Comparative Microarray Datasets
Vincent S. Tseng, Lien-Chin Chen, Yao-Dung Hsieh
3. Mining Plausible Patterns from Genomic Data
Jiri Klema, Arnaud Soulet, Bruno Cremilleux, Sylvain Blachon, Olivier Gandrillon
4. Feature Selection for Medical Data Mining: Comparisons of Expert Judgment and Automatic Approaches
Tsang-Hsiang Cheng, Chih-Ping Wei, Vincent Tseng
5. Biomathematics Oriental Machine Learning System for Reconstructing Temporal Profiles of Biological or Clinical Markers
Ronen Botzer-Tal, Nir Hadaya, Rachel S. Levy-Drummer, Ariel Feiglin, David H. Shalom, Avidan U. Neumann

ST-4 Intelligent Patient Management II, 10:00:00-10:40:00, Timpanogos

Chaired by Morgan Price

1. Intelligent Patient Management using Dynamic Models of Clinical Variables
Adele Marshall, Ronan Donaghy
2. Maintaining the Integrity of Links Between Assets within a Clinical Knowledge Repository
Timothy Hanna, Roberto Rocha, Nathan Hulse, Guilherme Del Fiol, Richard Bradshaw,

ST-7 The Use of Open Source Software and Open Document Formats in Health and Medical Systems, 10:40:00-11:40:00, Timpanogos

Chaired by Jens Jahnke

1. Using the Clinical Document Architecture as open data exchange format for interfacing EMRs with clinical decision support systems
Iryna Bilykh, Jens Jahnke, Glen McCallum, Morgan Price
2. BioFOSS: a survey of Free/Open Source Software in Bioinformatics
Kirby Shabaga, Daniel German
3. An image processing tool to support gestational age determination
Luciano Silva, Olga Bellon, Rubisley Lemes, Jorge Meira, Monica Cat

ST-11 Ontologies for Biomedical Systems I, 13:00:00-14:40:00, Cascade I

Chaired by Aman Sidhu

1. Biomedical Ontology MeSH Improves Document Clustering Quality on MEDLINE Articles: A Comparison Study
Illhoi Yoo, Xiaohua Hu

- Using Ontology Visualization to Coordinate Cross-species Functional Annotation for Human Disease Genes
Mary E. Dolan, Judith A. Blake
- Advances in Protein Ontology Project
Amandeep Sidhu, Tharam Dillon, Elizabeth Chang
- Symptoms Ontology for Mapping Diagnostic Knowledge Systems
Robert Minchin, Fabio Porto, Sven Hartmann, Christelle Vangenot
- A Knowledge-based System for Managing Complex Clinical Trials
Ravi Shankar, Susana Martins, Martin O'Connor, David Parrish, Amar Das

GS-6 Signal and Image Processing in Medicine I, 13:00:00-14:40:00, Cascade II

Chaired by Swapna Bannerjee

- A Real Time Speckle Noise Cleaning Filter for Ultrasound Images
Bodhisatwa Mazumdar, Aman Mediratta, Joydeep Bhattacharyya, Swapna Banerjee
- A Method for Fetal Heart Rate Extraction Based on Time-Frequency Analysis
Evangelos C. Karvounis, Markos G. Tsiouras, Dimitrios I. Fotiadis, Katerina K. Naka
- A Monte Carlo-based Fiber Tracking Algorithm using Diffusion Tensor MRI
Ferran Prados, Anton Bardera, Mateu Sbert, Imma Boada, Miquel Feixas
- Toward Developing Multiple Organs and Diseases Diagnosing Intellectual System referring to Knowledge Base and CT Images
Tetsuya Sato, Norihiro Abe, Kazuaki Tanaka, Yoshimasa Kinoshita, Shoujie He
- Measurement of relative brain atrophy in neurodegenerative diseases
Daniel Abdala, Aldo Wangenheim

GS-2 Computer Aided Diagnosis I, 13:00:00-14:40:00, Cascade III

Chaired by Pau Choo Chung

- Automated MRI-Based Quantification of the Cerebral Atrophy Providing Diagnostic Information on Mild Cognitive Impairment and Alzheimer Disease
Klaus Fritzsche, Aldo von Wangenheim, Rüdiger Dillmann, Roland Unterhinninghofen
- Support Vector Machines for Computer Assisted Diagnostic Neuropathology
Muhammad Hassan, Peter Bentley, Malcolm Galloway
- Audio-Visual Tools for Computer-Assisted Diagnosis of Cardiac Disorders
Zeeshan Syed, Daniel Leeds, Dorothy Curtis, John Guttag, Francesca Nesta, Robert Levine
- Discrimination of Liver Diseases from CT Images Based on Gabor Filters
Chien-Cheng Lee, Sz-Han Chen, Hong-Ming Tsai, Pau-Choo Chung, Yu-Chun Chiang
- Automatic classification system for lumbar spine X-ray images
Soontharee Koompaiojn, Kien Hua, Chutima Bhadrakom

GS-9 Network and Telemedicine Systems I, 13:00:00-14:40:00, Timpanogos

Chaired by Rodney Long

- Switched lightpaths for e-health applications: a feasibility study
Lee Montahan, Andrew Simpson
- A Wireless Physiological Multi-Parameter Monitoring System Based on Mobile Communication Networks
Shaosheng Dai, Yue Zhang
- Clinical Trials of a Wireless LAN based Patient Monitoring System
Aoife Deery, Desmond Chambers, Denis Moriarty, Elizabeth Connolly, Gerard Lyons
- Towards a Grid of Sensors for Telemedicine
Carlos Rolim, Fernando Koch, Marcos Assunção, Carlos Westphal
- Application Protocol for a DICOM Real Time Collaborative System
Daniel Abdala, Martin Prusse, André Regert, Aldo Wangenheim

ST-11 Ontologies for Biomedical Systems II, 15:00:00-16:40:00, Cascade I

Chaired by Aman Sidhu

- Extending EER Modeling Concepts for Biological Data
Ramez Elmasri, Feng Ji, Jack Fu, Yiming Zhang, Zoe Raja
- A Coevolution Approach for Database Schemas and related Ontologies
Andreas Kupfer, Silke Eckstein, Karl Neumann, Brigitte Mathiak
- Oasis: a Mapping and Integration Framework for Biomedical Ontologies
Guanglei Song, Yu Qian, Ying Liu, Kang Zhang
- Engineering Trustworthy Ontologies: Case Study of Protein Ontology
Farooqh Hussain, Amandeep Sidhu, Elizabeth Chang, Tharam Dillon
- An Ontology-Driven Mediator for Querying Time-Oriented Biomedical Data
Martin O'Connor, Ravi Shankar, Amar Das

GS-6 Signal and Image Processing in Medicine II, 15:00:00-16:40:00, Cascade II

Chaired by D. J. Lee

- Using the Morphology of the Photoplethysmogram Envelope to Automatically Detect Hypovolemia
Stephen Paul Linder, Suzanne Wendelken

2. An Unsupervised Fluoroscopic Analysis of Knee Joint Kinematics
Charles Scott, Elisa Barney Smith
3. Interactive Image Registration as a Positioning Verification Tool for Radiation Treatment Planning
Ti-Cheng Lu, Ching-Fen Jiang, Shuh-Ping Sun, Ching-Jung Wu
4. Automatic Acquisition of Immunofluorescence Images: Algorithms and Evaluation
Paolo Soda, Amelia Rigon, Antonella Afeltra, Giulio Iannello

GS-2 Computer Aided Diagnosis II, 15:00:00-15:40:00, Cascade III

Chaired by Peter Kokol

1. A Multi-Expert System to classify fluorescent intensity in Antinuclear Autoantibodies testing
Paolo Soda, Giulio Iannello
2. Measuring Arterial Diameters for Surgery Assistance, Patient Customized Endovascular Prosthesis Design and Post-Surgery Evaluation
Diego Carvalho, Thiago R. dos Santos, Aldo von Wangenheim

GS-5 Medical Devices with Embedded Computers, 15:40:00-16:40:00, Cascade III

Chaired by Peter Kokol

1. Design of a Compact System Using a MEMS Accelerometer to Measure Body Posture and Ambulation
Kara Bliley, Daniel Schwab, David Holmes III, Paul Kane, James Levine, Erik Daniel, Barry Gilbert
2. Optimization of fabrication process for a PDMS-SOG-Silicon based PCR Micro Chip through system identification techniques
Venumadhav Korampally, Shantanu Bhattacharya, Yuanfang Gao, Sheila Grant, Steven Kleiboeker, Keshab Gangopadhyay, Jinglu Tan, Shubhra Gangopadhyay
3. An innovative system that runs at a PDA for a continuous monitoring of people
Miren Itziar Bagüés, Jesús Bermúdez, Alfredo Burgos, Alfredo Goñi, Arantza Illarramendi, Jimena Rodriguez, Alberto Tablado

GS-9 Network and Telemedicine Systems II, 15:00:00-16:40:00, Timpanogos

Chaired by Sameer Antani

1. A Statewide Telemedicine Network for Public Health in Brazil
Rafael Simon Maia, Aldo von Wangenheim, Luiz Felipe Nobre
2. Enhancing Wireless Patient Monitoring by Integrating Stored and Live Patient Information
Upkar Varshney
3. Development and Evaluation of a Bluetooth EKG Monitoring Sensor
Joshua Proulx, Ryan Clifford, Sarah Sorensen, Dah-Jye Lee, James Archibald
4. Addressing Un-cooperation of Routers in Wireless Patient Monitoring.
Upkar Varshney
5. Probing the Use and Value of Video for Multi-Disciplinary Medical Teams in Teleconference
Bridget Kane, Saturnino Luz

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