24th International Conference on Computers and Their Applications (CATA-2009)

PROGRAM

April 8-10, 2009

Holiday Inn Downtown-Superdome
New Orleans, Louisiana USA

Sponsored by

International Society for Computers and Their Applications

975 Walnut Street, Suite 132
Cary, NC 27511-4216
Phone: (919) 467-5559; Fax: (919) 467-3430; E-mail: isca@ipass.net
24th International Conference on Computers and Their Applications (CATA-2009)

SPONSOR
International Society for Computers and Their Applications (ISCA)

Conference Chair
Gongzhu Hu
Central Michigan University

Program Chair
Wei Li
Nova Southeastern University

International Program Committee

Reda A. Ammar, U. of Connecticut, USA
Behnam Arad, California State U., Sacramento, USA
Kamel Barkaoui, CNAM, France
Mark Burgin, U. of California, Los Angeles, USA
Suresh Chandra, NC A&T State U., USA
Fouad B. Chedid, Notre Dame U., Lebanon
Xiao Chen, Texas State U., USA
Andy Connor, Auckland U. of Tech., New Zealand
Stuart Cunningham, Glyndwr University, Wales
Alfredo Cuzzocrea, U. of Calabria, Italy
Sergiu Dascalu, U. of Nevada Reno, USA
Narayan Debnath, Winona State U., USA
Sherif Elfayoumy, U. of North Florida, USA
James H. Graham, U. of Louisville, USA
Vic Grout, Glyndwr University, Wales
Bidyu Gupta, Southern Illinois U. at Carbondale, USA
Ramzi Haraty, Lebanese American U., Lebanon
Fred Harris, University of Nevada, Reno, USA
Donna L Hudson, U. of California, San Francisco, USA
Jeff Jackson, U. of Alabama, USA
Ahmed Kamel, Concordia College, USA
Chung-Hong Lee, National Kaohsiung U. of Applied Sciences, Taiwan
Gordon K. Lee, San Diego State U., USA
Haesun Lee, U. of Texas of the Permian Basin, USA
Chia-Pin R. Liu, Jackson State U., USA
Jiang Bo Liu, Bradley U., USA
Peixiang Liu, Nova Southeastern U., USA
Sin Ming Loo, Boise State U., USA
Yi Lu, Prairie View A&M U., USA
Wenbin Luo, St. Mary’s U., USA
Prabhat Mahanti, U. of New Brunswick, Canada
Eda Marchetti, ISTI-CNR, Italy
Les Miller, Iowa State U., USA
Pornsiri Muenchaisri, Chulalongkorn U., Thailand
Mara Nikolaidou, Harokopio U. of Athens, Greece
David C. Pheanus, Arizona State U., USA
Thomas Philip, Mississippi State U., USA
Ahmed H. Salem, Hood College, USA
Stanislav G. Sedukhin, The U. of Aizu, Japan
Howard Sholl, U. of Connecticut, USA
Ambareen Siraj, Tennessee Tech U., USA
Baoying Wang, Waynesburg U., USA
John M. Weiss, South Dakota School of Mines and Technology, USA
Jun Zheng, New Mexico Inst. of Mining and Technology, USA
7:30 a.m. – 5:00 p.m. CONFERENCE REGISTRATION – Coffee/pastries – Bayou Foyer (Meeting Rooms on 8TH Floor)

8:30 a.m. – 8:45 a.m. WELCOME and Opening Remarks (Bayou Ballroom A)
Dr. Gongzhu Hu, Central Michigan U. (Conference Chair)
Dr. Wei Li, Nova Southeastern U. (Program Chair)

INTERNET
Wednesday, April 8, 10:30 a.m. – 12 Noon, Bayou Ballroom A
Session Chair: TBA

1. Performance Enhancement of Web Server System
   Sarah Tasneem (Eastern Connecticut State University, USA), Reda Ammar, Lester Lipsky, and Howard Sholl (University of Connecticut, USA)

2. Network End-to-End Link Performance Analysis using Internet2 Diagnostic Tester
   Sanjoy Chowdhury and Jiang B. Liu (Bradley University, USA)

3. Comparing Strategies for Evaluating Older Adults to Improve Web Accessibility
   Alfred Taylor, Sr., Les Miller and Sree Nilakanta (Iowa State University, USA)

IMAGE/AUDIO PROCESSING
Wednesday, April 8, 10:30 a.m. – 12 Noon, Bayou Ballroom B
Session Chair: TBA

1. Hybrid Vector Filtering for Noise Detection and Removal in Color Images
   Dung Dang and Wenbin Luo (St. Mary's University, USA)

2. Contactless Palmprint Recognition Using Gabor Filter
   A.Poinsot, F. Yang, and M. Paindavoine (University of Burgundy, France)

3. Performance Study for Instantaneous Blind Audio Source Separation Algorithms
   Amr E. Mahmoud, Medhat Hussien, Mohamed I I. Eladawy (Helwan University, Egypt) and Reda A. Ammar (University of Connecticut, USA)

12:00 p.m. – 1:30 p.m. LUNCH BREAK ON OWN

DATABASE SYSTEMS
Wednesday, April 8, 1:30 p.m. - 3:00 p.m. (Bayou Ballroom A)
Session Chair: TBA

1. Practical Methods for Preventing Data Anomalies in High Level Normal Forms
   Tennyson X. Chen, Martin D. Meyer, and Ganapathi Nanthini (RTI International, USA)

2. Augmenting Historical Research with Databases: A Case Study of 16th Century Elizabethan Military
   Michael Bauer (The University of Western Ontario, Canada) and William Acres (Huron College University, Canada)

3. Enhancing SQL with Set-Comparison Operators
   Jing Zhang, Wen-Chi Hou, Feng Yu and Dunren Che (Southern Illinois University at Carbondale, USA)
1. Single Event Upset Detection and Correction in Virtex-4 and Virtex-5 FPGAs
   Bradley F. Dutton and Charles E. Stroud (Auburn University, USA)

2. Built-in Self-Test for Memory Resources in Virtex-4 Field Programmable Gate Arrays
   Brooks R Garrison, Daniel T. Milton and Charles E. Stroud (Auburn University, USA)

3. A Neighborhood Dependent Approach (NDA) for a Power-Aware Design of a Real-Time Video Enhancement System
   Hau T. Ngo and Robert J. Voigt (United States Naval Academy, USA) and Vijayan K. Asari (Old Dominion University, USA)

3:00 p.m. – 3:30 p.m.  COFFEE BREAK

1. Reliable Agent Based Monitoring System
   Adina Morariu, Silviu Folea and Honoriu Valean (Technical University of Cluj-Napoca, Romania)

2. Dynamic Cost Minimization of Multi-Class Jobs in Computational Grids
   Satish Penmatsa (Southern Arkansas University, USA) and Venkata P. Mantena (Omnisoft, Inc., USA)

3. Comparison of Strategies for Serving Two Streams of Jobs
   Feng Zhang, Lester Lipsky (University of Connecticut, USA), Sarah Tasneem (Eastern Connecticut State University, USA) and Steve Thompson (University of Connecticut, USA)

1. A New Efficient Low Cost Pseudo-LRU Cache Line Replacement Algorithm
   D. Gille (ARM Ltd., France)

2. A Novel Floorplanning for Hierarchical VLSI Design
   Chia-Pin R. Liu (Jackson State University, USA)

3. An Accelerated Iterative Convergence Scheme for Papoulis-Gerchberg Algorithm
   Tsung-Ming Lo (China University of Technology, Taiwan) and Kuang-Shyr Wu (Ching Yun University, Taiwan)

4. Loop Fusion Technique with Minimal Memory Cost via Retiming
   Meilin Liu (Wright State University, USA), Edwin H.-M. Sha (University of Texas at Dallas, USA), Chun Xue (City University of Hong Kong, HK) and Meikang Qiu (University of New Orleans, USA)
8:00 a.m. – 5:15 p.m. - CONFERENCE REGISTRATION - Coffee/pastries
(8th Floor, Bayou Foyer)

SESSION 4A:

COMPUTER NETWORKS I
Thursday, April 9, 9:00 a.m. – 10:30 a.m. (Bayou Ballroom A)
Session Chair: TBA

Sangho Yi, Jaeheung Lee, Hong Min, Yookun Cho (Seoul National University, Korea)
and Jiman Hong (Soongsil University, Korea)

2. Deployment Strategy Effect on Maximizing the Lifetime of Wireless Sensor Networks
Saleh H. Al-Sharaeh, Ahmed A. Sharieh and Rana K. AbuElayyan (Jordan University, Jordan)

3. Rural Wireless Mesh Networks in Africa: An Experimental Study
Jonathan D. Backens, Min Song, Lutz Engels (Old Dominion University, USA)

SESSION 4B:

COMPUTER SECURITY
Thursday, April 9, 9:00 a.m. – 10:30 a.m. (Bayou Ballroom B)
Session Chair: TBA

1. Control and Audit of Information Systems in Small and Medium Enterprises
V. Uma (Practiving Chartered Accountant, India) and D. Illangovan
(Annamalai University, India)

2. Intrusion Detection System for SCADA Networks
Aleksey Ashikhmin, James Graham, Ahmed Desoky and Benjamin Arazi (University
of Louisville, USA)

3. Towards Reconfigurable Hardware for Cryptographic Benchmarking
Robert S. Fourney and Michael S. VanBemmel (South Dakota State University, USA)

10:30 a.m. – 11:00 a.m.  COFFEE BREAK

11:00 a.m. – 12:00 Noon - KEYNOTE ADDRESS

S. S. Iyengar
Louisiana State University

“DISTRIBUTED SENSOR NETWORKS: HYPE AND REALITY”

Location: Bayou Ballroom A
12:15 p.m. – 1:30 p.m.  CONFERENCE LUNCHEON

LOCATION: Ragtime Room, 1st Floor

BEST PAPER AWARD

Followed by

ISCA ANNUAL GENERAL ASSEMBLY MEETING

ISCA Members, Guests, and all conference participants are Welcome!

SESSION 5A:

COMPUTER NETWORKS II
Thursday, April 9, 1:30 p.m. - 3:00 p.m. (Bayou Ballroom A)
Session Chair: TBA

1. IP Payload Compression for Higher Throughput
   Bikrant Neupane and George H. Hamer (South Dakota State University, USA)

2. An Information Theoretic Model for Protocol Graph Based Anomaly Analysis
   Guangzhi Qu (Oakland University, USA)

3. End-to-End QoS-based Admission Control and APNs Interaction Framework with Negotiation
   R. Singh (MJP Rohilkhand University, India), N. Kumar (I. I. E. T., India), and Verma S. (Indian Institute of Information Technology, India)

SESSION 5B:

SPECIAL SESSION on COMPUTER AND INFORMATION TECHNOLOGY
Thursday, April 9, 1:30 p.m. - 3:00 p.m. (Bayou Ballroom B)
Session Chair: TBA

1. Usability of the Pen Input Device on a Menu with Force Fields
   Clay R. Smith and Narayan C. Debnath (Winona State University, USA)

2. Design of Lab Assistant Module for UTPB-CLTS
   Cheri Whalen, Ilhyun Lee and Haesun Lee (The University of Texas of the Permian Basin, USA)

3. Comparison of Touchpad Force Field Results: A Current Experiment
   Clay Smith and Narayan Debnath (Winona State University, USA)

   Baisakhi Chakraborty and Ranjan Kumar Maji (National Institute of Technology-Durgapur, India) and Narayan Debnath (Winona State University, USA)

3:00 p.m. – 3:30 p.m.  COFFEE BREAK
1. **Word Classification: An Experimental Approach with Naïve Bayes**  
   Wei Ding (University of Massachusetts, USA), Hisham Al-Mubaid and Srikanth Kotagiri (University of Houston-Clear Lake, USA)

2. **A Tree-Based Classification of High and Low Error-Severity Modules Using the CK Metrics**  
   Raed A. Shatnawi (Jordan University of Science and Technology, Jordan)

3. **Nearest Shrunken Centroid as Feature Selection of Microarray Data**  
   Myungsook Klassen and Nyunsu Kim (California Lutheran University, USA)

4. **Multiple Branch Prediction with Perceptrons**  
   Jongbok Lee (Hansung University, South Korea)

---

**SESSION 6B:**

**SPECIAL SESSION on NETWORKING AND DISTRIBUTED SYSTEMS**

Thursday, April 9, 3:30 p.m. - 5:30 p.m. (Bayou Ballroom B)  
Session Chair: TBA

1. **A Novel Bandwidth-Efficient Multicasting Protocol for Wide Area Networks**  
   B. Gupta, S. R. Sivada, S. Rahimi, and S. T. Adusumalli (Southern Illinois University, USA)

2. **A Novel Recovery Approach for Distributed Systems**  
   B. Gupta, D. Che and S. Rahimi (Southern Illinois University, USA)

   R. Nikolaev and B. Gupta (Southern Illinois University, USA)

   M. Burgin (University of California, Los Angeles, USA) and N. Debnath (Winona State University, USA)
8:00 a.m. – 12:15 p.m. - CONFERENCE REGISTRATION - Coffee/pastries
(8th Floor, Bayou Foyer)

SESSION 7A:

INFORMATION SYSTEM AND OPERATING SYSTEM
Friday, April 10, 10:30 a.m. -12 Noon (Bayou Ballroom A)
Session Chair: TBA

1. Measuring Software Evolution with Changing Lines of Code
   Nikolaus Baer and Robert Zeidman (Zeidman Consulting, USA)

2. Impact of Computing on the World Economy: A Position Paper
   Frederick Harris (University of Nevada at Reno, USA), Gordon Lee (San Diego State University, USA), Stuart Rubin (Spawar Systems Center, USA), T. C. Ting (University of Connecticut, USA), Billy Gaston (Anautics, Inc., USA) and Gongzhu Hu (Central Michigan University, USA)

3. File System Call Accounting: Measuring Different Workloads
   Randy R. Appleton (Northern Michigan University, USA)

SESSION 7B:

INTELLIGENT SYSTEMS II
Friday, April 10, 10:30 a.m. -12 Noon (Bayou Ballroom B)
Session Chair: TBA

1. A Three State Fast Vector Quantization Algorithm Based on Code Vector Activity Detection
   Mohammed M. Elhenawy and Mohsen M. Tantawy (National Telecommunication Institute, Egypt)

2. Developing a Performance Evaluation Tool for Distributed Problem-Solving Strategies
   Norman Carver, Eiham S. Khorasani and Shahram Rahim (Southern Illinois University, USA)

3. Learning and Representing Causal Relationships with Bayesian Networks
   Carlos Perez and Eman El-Sheikh (University of West Florida, USA)

4. A Performance Study of Connection-Oriented Time Warp
   Ali S. Al-Humaimidi and Hussam Soliman Ramadan (King Saud University, Saudi Arabia)