

16th International Conference on
**Software Engineering
and
Data Engineering**
(SEDE-2007)

PROGRAM

July 9-11, 2007

Imperial Palace Hotel
Las Vegas, Nevada

Sponsored by



International Society for
Computers and Their Applications

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Cary, NC 27511-4216

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16th International Conference on Software Engineering and Data Engineering (SEDE-2007)

SPONSOR

International Society for Computers and Their Applications (ISCA)

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M.Javed Zaki, RPI, USA
Qinghua Zou, Microsoft Research, USA

Monday, July 9, 2007

All meeting rooms are located on the 4th Floor.

7:45 a.m. - 6:00 p.m. REGISTRATION – Coffee, Tea, Pastries (FUJI Foyer)

8:45 a.m. - 9:00 a.m. WELCOME (FUJI Room, 4th Floor)

**Dr. Narayan Debnath, Winona State University, USA
Dr. Hisham Al-Mubaid, University of Houston-Clear Lake, USA
Dr. Marc Garbey, University of Houston, USA**

9:00 a.m. – 10:00 a.m. INVITED SPEAKER – Software Engineering

“Software Engineering of Ubiquitous Systems: Challenges & Opportunities”

**Mehdi T. Harandi
University of Illinois at Urbana-Champaign**

Location: FUJI Room, 4th Floor

10:00 a.m. – 10:30 a.m. COFFEE BREAK

SESSION 1A:

**SPECIAL SESSION on
APPLICATIONS IN SOFTWARE ENGINEERING**

Monday, July 9, 10:30 a.m. – 12:30 p.m., FUJI Room, 4th Floor
Session Chair: Dr. Narayan Debnath, Winona State University

- 1. goSmart: A New Solution for Home Automation**
Jim Motta, Fares Qeadan, Sergiu M. Dascalu, Siraj Malik, and Frederick C. Harris, Jr.
(University of Nevada, Reno, USA)
- 2. Evolutionary Neural Network Prediction for Software Reliability Modeling**
Sultan Aljahdali (Taif University, Saudi Arabia) and Khalid A. Buragga (King Faisal University, Saudi Arabia)
- 3. AVRATAR: A Virtual Environment for Puppet Animation**
Alexander Redei, Ed Tumbusch, Josh Koberstein, Sergiu Dascalu, and Frederick C. Harris, Jr. (University of Nevada, Reno, USA)
- 4. Software Projects Finance Feasibility Analysis in the Context of Project Management Body of Knowledge using "Use Case Points" Estimation Approach**
R. Uzal (Universidad Nacional de San Luis and Universidad de Buenos Aires, Argentina), G. Montejano and D. Riesco (Universidad Nacional de San Luis, Argentina) and N. C. Debnath (Winona State University, USA)
- 5. Correctness in the Software Life Cycle**
M. Burgin (University of California-Los Angeles, USA), N. Debnath (Winona State University, USA), and H. Lee (University of Texas of the Permian Basin, USA)

SESSION 1B:**SOFTWARE ARCHITECTURE**

Monday, July 9, 10:30 a.m. – 12:30 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Mara Nikolaidou, Harokopio University of Athens

1. **Software Architecture Based Connection Manager**
Mourad Oussalah, Abdelkrim Amirat, and Tahar Khammaci (University of Nantes, France)
2. **Integrating Behavioral Aspect into COSA Architecture**
Bessam Ammar (University of Jijel, Algeria) and Kimour Mohamed Tahar (University of Annaba, Algeria)
3. **Design and Implementation of the National R&D Information System Based-on Service-Oriented Architecture**
Myung Il Kim and Sung Jin Jhun (Korea Institute of Science and Technology Information, Korea)
4. **Application of Architecture Description Languages to Automatic Distribution of Sequential Code**
AliReza Soltani (Payam noor University -Bostanabad, Iran) and Siamak Najjar Karimi, Iran)

12:30 p.m. – 2:00 p.m. LUNCH BREAK (on your own)

SESSION 2A:**XML AND XML APPLICATIONS**

Monday, July 9, 2:00 p.m. – 4:00 p.m., FUJI Room, 4th Floor
Session Chair: Dr. Yun Bai, University of Western Sydney

1. **A Framework for Constraint Checking Involving Aggregates for Multiple XML Databases using Schematron**
Albin Laga and Praveen Madiraju (Marquette University, USA)
2. **On XML Document Security**
Yun Bai (University of Western Sydney, Australia)
3. **mGrid: a Matching Grid for Querying XML Streams**
Qinghua Zou (Microsoft Corporation, USA) and Guogen Zhang (IBM Silicon Valley Lab, USA)
4. **Efficient Twig Pattern Matching over XML Streams**
Yaw-Huei Chen and Ming-Chi Ho (National Chiayi University, Taiwan, ROC)

SESSION 2B:**DATABASE AND APPLICATIONS**

Monday, July 9, 2:00 p.m. – 4:00 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Sergiu Dascalu, University of Nevada, Reno

1. **Vertical Partitioning for Database Design: A Grouping Algorithm**
Mahmoud Y. AlFaress (Aleppo University, Syria), Hassan I. Abdalla and Farhi Marir (London Metropolitan University, UK), and Yahiya Najjar (Aleppo University, Syria)
2. **A Fuzzy Active Relational Database for Employee Performance Evaluation**
Cyrus Azarbod and Cindy Thompson (Minnesota State University at Mankato, USA)
3. **SIndex: Query Optimization and Access Control in a Semi-Structured Database**
Lauren J. Foutz (Rensselaer Polytechnic Institute, USA)
4. **Formal Verification of a New Optimistic Concurrency Control Algorithm for Temporal Databases**
Achraf Makni, Rafik Bouaziz, and Faiez Gargouri (FSEGS, Tunisia)
5. **Developing Three Tier Web Applications with an Object-Oriented Database and JAVA Technology**
Mark B. Jones and Morris M. Liaw (University of Houston - Clear Lake, USA)

4:00 p.m. – 4:30 p.m. COFFEE BREAK

SESSION 3A:

DATA QUERY AND APPLICATIONS

Monday, July 9, 4:30 p.m. – 6:30 p.m., FUJI Room, 4th Floor
Session Chair: Dr. Joshua Pauli, Dakota State University

1. **An Extensive Math Query Language**
Abdou S. Youssef and Moody E. Altamimi (The George Washington University, USA)
2. **Enhancing Noisy Speech in an MRT Using MFCC-CMAC**
Abdul Wahab and Teh E. C. (Nanyang Technological University, Singapore)
3. **Rank-Based Feature Weighting**
B. D. Gaston (Anautics, Inc., USA) and K. M. George (Oklahoma State University, USA)
4. **Breaking "EXTENDS" Relationships for Use/Misuse/Mitigation Use Case Refinement**
Joshua J. Pauli (Dakota State University, USA)

SESSION 3B:

WEB MINING AND WEB APPLICATIONS

Monday, July 9, 4:30 p.m. – 6:30 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Peiyi Tang, University of Arkansas at Little Rock

1. **Mining Web Access Patterns with First-Occurrence Linked WAP-Trees**
Peiyi Tang, Markus P. Turkia (University of Arkansas at Little Rock, USA), and
Kyle A. Gallivan (Florida State University, USA)
2. **BeLearning: Designing Accessible Web Applications**
Helmut Vieritz (Berlin University of Technology, Germany) and Sabina Jeschke
(University of Stuttgart, Germany)
3. **A Graph Model for Generating Simulated Web Domains**
Rong Yang (Western Kentucky University, USA) and Adel S. Elmaghraby (University
of Louisville, USA)
4. **Self-Organizing Map based Web Pages Clustering using Web Logs**
Dehu Qi (Lamar University, USA) and Chung-Chih Li (Illinois State University, USA)

Tuesday, JULY 10, 2007

8:00 a.m. – 6:00 p.m. REGISTRATION – Coffee, Tea, Pastries

9:00 a.m. – 10:00 a.m. INVITED SPEAKER

“DATA MINING APPLICATIONS”

**Margaret H. Dunham
Southern Methodist University**

LOCATION: SAMPAN Room, 4th Floor

10:00 a.m. – 10:30 a.m. COFFEE BREAK

SESSION 4A:

BIOINFORMATICS AND BIOMEDICAL APPLICATIONS

Tuesday, July 10, 10:30 a.m. – 12:30 p.m., FUJI Room, 4th Floor
Session Chair: Dr. Victoria Hilford, University of Houston

- 1. Using Text Mining to Extract Gene and Protein Synonyms from Biomedical Texts**
Duc Duong and Hisham Al-Mubaid (University of Houston - Clear Lake, USA)
- 2. WIMI - Web Interface to Medical Information**
Victoria Hilford, Marc Garbey, Sravan Vadakattu and Cody Addison (University of Houston, USA)
- 3. A Path Length Method for Gene Functional Similarity Using GO Annotations**
Elham Khabiri and Hisham Al-Mubaid (University of Houston - Clear Lake, USA)
- 4. Applying ARM in a Healthcare System -- A Case Study**
Claudia Raibulet, Luigi Ubezio, Stefano Mussino, Francesca Arcelli,
Francesco Tisato (University of Milano-Bicocca, Italy)

SESSION 4B:

DATA ENGINEERING AND DATA MANAGEMENT

Tuesday, July 10, 10:30 a.m. – 12:30 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Ray Bachnak, Texas A&M University-Corpus Christi

- 1. Effectivity Date Maintenance for a Product Data Management System**
Jiun-Yan Shiao (Chung Yuan Christian University, Taiwan)
- 2. Programming a Microcontroller for Data Capture and Display**
Rafic Bachnak, Ramya Chakinarapu, Mario Garcia, and Dulal Kar (Texas A&M University-Corpus Christi, USA)
- 3. The Application of 3D Range Images in the Interior Design Data Management**
Naii-Jung Shih and Je-Zen Hu (National Taiwan University of Science and Technology, Taiwan, ROC)
- 4. Using Data-Integrity Constraints in Model-Based Design**
Sukhamay Kundu (Louisiana State University, USA)

**12:30 p.m. – 2:30 p.m. CONFERENCE LUNCHEON
and Awards Ceremony**

LOCATION: PEARL ROOM, 4TH Floor

SESSION 5A:

DESIGN PRINCIPLES AND APPROACHES

Tuesday, July 10, 2:30 a.m. – 4:00 p.m., FUJI Room, 4th Floor
Session Chair: Dr. Haesun Lee, University of Texas of the Permian Basin

1. **Case Study: A Tool Centric Approach for Fault Avoidance in Microchip Designs**
Clemente Izurieta (Colorado State University, USA)
2. **A Common Ground: Extensible Operating Systems Design Principles**
Mohamed F. Ahmed (University of Connecticut, USA), Amr El-Kadi (American University in Cairo, Egypt), and Reda Ammar (University of Connecticut, USA)
3. **PNDOM: A Domain Function-Based Software Component Composition Plan Build Approach**
Pengwei Tian, Yaoxue Zhang, Ming Zhong, Yuezhi Zhou, and Cunhao Fang (Tsinghua University, China)

SESSION 5B:

SOFTWARE ENGINEERING AND LEARNING

Tuesday, July 10, 2:30 a.m. – 4:00 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Donald Schwartz, Millsaps College

1. **Service Learning and Software Engineering: Managing "Real World" Group Projects**
Donald R. Schwartz (Millsaps College, USA)
2. **Leveraging the TABLETPC in Systems Analysis and Design Courses**
Joshua J. Pauli (Dakota State University, USA)

4:00 p.m. – 4:30 p.m. COFFEE BREAK

SESSION 6A:**MACHINE LEARNING AND NEURAL NETWORKS**

Tuesday, July 10, 4:30 p.m. – 6:30 p.m., FUJI Room, 4th Floor
Session Chair: Dr. Donna L. Hudson, University of California, San Francisco

1. **A Parallel Neural Network Classification Approach to Assist in Decision Making**
D. L. Hudson, M. E. Cohen (University of California, San Francisco, USA)
2. **Probabilistic Artificial Neural Networks for Arabic Character Recognition**
Ahmad M. Sarhan (New York Institute of Technology, UAE) and Omar I. Al Helalat (Ministry of Education, UAE)
3. **A Systematic Algorithm to Construct Neuro-Fuzzy Inference System**
Tharwat E. Alhanafy (Al-Azhar University, Egypt), Tarek S. Sobh (Egyptian Armed Forces, Egypt), and Awad H. Khalil (The American University in Cairo, Egypt)
4. **A Simple Model for Distributed-Feedback Laser using Adaptive Neuro-Fuzzy Inference System**
Fatih V. Celebi, Tugba Ozturk (Baskent University, Turkey)

SESSION 6B:**UML AND SOFTWARE DESIGN**

Tuesday, July 10, 4:30 p.m. – 6:00 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Sukhamay Kundu, Louisiana State University and A&M College

1. **Measuring UML Design Quality in a Real-Time Development Environment**
Leigh J. French and Lorna Zorman (California State University, San Marcos, USA)
2. **A UML2.0 Profile for DEVS: Providing Code Generation Capabilities for Simulation**
Mara Nikolaidou, Vassilis Dalakas, George-Dimitrios Kapos, Loreta Mitsi, and Dimosthenis Anagnostopoulos (Harokopio University of Athens, Greece)
3. **Towards a Theory of Software Design: Timeless Principles of Software System Design**
David R. Wright (North Carolina State University, USA)
4. **A Software Tool for Optimal Class-Hierarchy Design Based on the Use-Relationship Among Functions and Variables**
Nigel Gwee (Southern University and A&M College, USA) and Sukhamay Kundu (Louisiana State University and A&M College, USA)
5. **Design for a Three-Tier Mobile Form in an ASP.NET Application**
I. H. M. van Coppenhagen (University of South Africa, South Africa) and Barry Dwolatzky (University of the Witwatersrand, South Africa)

8:30 a.m. - 2:00 p.m.

REGISTRATION – Coffee, Tea, Pastries

SESSION 7A:

MODELING DIAGRAMS AND METHODS

Wednesday, July 11, 8:30 a.m. – 10:15 a.m., FUJI Room, 4th Floor
Session Chair: Dr. Sultan Aljahdali, Taif University

1. **An Effective Service Modeling Method through Use Case Analysis**
Shin Su-mi and Jhun Sung-Jin (Korea Institute Science and Technology Information, Korea)
2. **Ontology Enhanced Modeling Diagrams**
Nisreen Innab (Arab Academy for Computer and Financial Sciences, Jordan) and
Ahmad Kayed (Applied Science University, Jordan)
3. **Testing Techniques for SOA Model**
Li Liao and Hareton K. N. Leung (Hong Kong Polytechnic University, Hong Kong)
4. **The Graph Object Oriented Multidimensional Data Model: A Conceptual Perspective**
Anirban Sarkar and Swapan Bhattacharya (National Institute of Technology, India)

10:15 a.m. – 10:30 a.m. COFFEE BREAK

SESSION 8A:

ALGORITHMS AND PROTOCOLS

Wednesday, July 11, 10:30 a.m. – 12:30 a.m., FUJI Room, 4th Floor
Session Chair: Dr. Ehab Ezzat Hassanien, Cairo University

1. **Improving the Compression of Inverted Index using Sequitur Algorithm**
Eman Essam Edeen Saied, Ehab Ezzat Hassanien, and Mohamed El Sharkawi
(Cairo University, Egypt)
2. **Advanced Robust E-Mail Protocols with Perfect Forward Secrecy**
Rui Jiang, Aiqun Hu, and Xiaohui Yang (Southeast University, P.R. China)
3. **Parallel Implementation for Solution Verification of CFD Code**
C. Picard, G. Garbey, M. Garbey (University of Houston, USA)
4. **Direct Transformation of Coordinates for GPS Positioning Using the Techniques of Genetic Programming and Symbolic Regression on Partitioned Data**
Chih-Hung Wu, Hung-Ju Chou (National University of Kaohsiung, Taiwan) and
Wei-Han Su (Shu-Te University, Taiwan)

SESSION 8B:

SOFTWARE MEASUREMENT, METRICS AND DEVELOPMENT

Wednesday, July 11, 10:30 a.m. – 12:30 p.m., SAMPAN Room, 4th Floor
Session Chair: Dr. Hisham Al-Mubaid, University of Houston - Clear Lake

1. **Issues in Open Source Software Development**
Radha Shankarmani, Siddhi Mehta and Farha Mukri (Sardar Patel College of Engineering, India)
2. **Measurement Theory Principles in Software Measurement**
P. N. Gedela, P. Kosaraju and A. Melton (Kent State University, USA)
3. **Visualization Taxonomy for Software Metrics**
Ibrahim M. Al-Harazin, Muhammad Shafique, Jarallah S. Al-Ghamdi, and Muhammed S. Al-Mulhem (King Fahd University of Petroleum and Minerals, Saudi Arabia)
4. **Monitoring Software Technology Evolution, One Trend at a Time**
Yanzhi Bai and Ali Mili (New Jersey Institute of Technology, USA)