

19th International Conference on
**Software Engineering
and Data Engineering
(SEDE-2010)**

PROGRAM

June 16-18, 2010

Hilton San Francisco Fisherman's Wharf
San Francisco, CA USA

Sponsored by



**International Society for
Computers and Their Applications**

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19th International Conference on Software Engineering and Data Engineering (SEDE-2010)

SPONSOR

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In cooperation with Winona State University, University of Texas at Dallas
and the College of St Benedict | St John's University

General Chair: Narayan Debnath, Winona State University, USA

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Rym Zalila-Wenkstern, University of Texas-Dallas, USA

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Xu, Xiaofeng, Xiamen Univ., China

Wednesday, June 16, 2010

MEETING ROOMS LOCATED ON 1st FLOOR

8:00 a.m. - 6:00 p.m. REGISTRATION – Coffee/tea/pastries – SONOMA Foyer

8:45 a.m. - 9:00 a.m. WELCOME - Sonoma I

**Rahal, College of St Benedict | St John's University, USA
Rym Zalila-Wenkstern, University of Texas-Dallas, USA**

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

**Dr. Prem Devanbu
University of California at Davis**

“Fair and Balanced? Bias in Bug-fix Datasets”

Location: SONOMA I, 1st Floor

10:00 a.m. – 10:30 a.m. COFFEE BREAK

SESSION 1A:

DATABASES AND DATA WAREHOUSES

Wednesday, June 16, 10:30 a.m. - 12:30 p.m., Sonoma I
Session Chair: Dr. Edward T. Hammerand, Arkansas State University

- 1. BigCube: A Metamodel for Managing Multidimensional Data**
Ganesh Viswanathan and Markus Schneider (University of Florida, USA)
- 2. Methods on Identifying Data Anomalies in a Normalized Database**
Tennyson X. Chen, Martin D. Meyer, Nanthini Ganapathi, Sean Liu, and Jon Cirella (RTI International, USA)
- 3. Top-Down Approach on Concurrent Access to the B-Link Tree**
Edward T. Hammerand and Hung-Chi Su (Arkansas State University, USA)
- 4. Comparison of SQL Injection Detection and Prevention Tools based on Attack Type and Deployment Requirements**
Atefeh Tajpour, Maslin Masrom, Mohammad JorJor Zadeh Shooshtari, and Hossein Rouhani Zeidanloo (University Technology Malaysia, Malaysia)

SESSION 1B:

SOFTWARE ARCHITECTURE AND DESIGN

Wednesday, June 16, 10:30 a.m. - 12:30 p.m., Sonoma II
Session Chair: Dr. Mourad Oussalah, University of Nantes

- 1. Reasoning about Safety during Software Architecture Design**
Tacksoo Im, Soujanya Vullam, and John D. McGregor (Clemson University, USA)
- 2. A Change Impact Analysis Process for Distributed Software Architecture Evolution**
Laurent Deruelle, Mohamed Oussama Hassan, and Henri Basson (Université du Lille Nord de France, France)
- 3. Locating Defects in Software Architectures Through Debugging**
Kyungsoo Im and John D. McGregor (Clemson University, USA)
- 4. An Optimum Selection of Enterprise Service Bus for DODAF Based Defense Systems**
Abdullah S. Alghamdi (King Saud University, Saudi Arabia)

12:30 p.m. – 2:00 p.m. LUNCH BREAK ON OWN

SESSION 2A:

DATA MINING AND APPLICATIONS

Wednesday, June 16, 2:15 p.m. - 4:15 p.m., Sonoma I

Session Chair: Dr. William Perrizo, North Dakota State University

1. **Using Metrics to Quantify Similarity in Source Code: An Empirical Study Using VOCS**
Jeremy Iverson, James Schnepf, and Imad Rahal (College of Saint Benedict's / Saint John's University, USA)
2. **Mining Redundant Industrial Alarm Occurrences with Association Rules Extraction and Complex Networks Modeling**
Leandro Pflieger de Aguiar, Virgilio A. F. de Almeida and Wagner Maira, Jr. (University of Minas Gerais, Brazil)
3. **A Web-based Interactive Data Visualization System for Outlier Subspace Analysis**
Dong Liu, Qigang Gao (Dalhousie University, Canada), Hai Wang (Saint Mary's University, Canada), and Ji Zhang (University of Southern Queensland, Australia)
4. **Unsupervised Identity Application Fraud Detection using Rule-based Decision Tree**
Amany M. Abdelhalim and Issa Traore (University of Victoria, Canada)

SESSION 2B:

SERVICES AND OPEN PLATFORMS

Wednesday, June 16, 2:15 p.m. - 4:15 p.m., Sonoma II

Session Chair: Dr. Muhammad Sulayman, The University of Auckland

1. **Toward the Definition of a Many-to-Many Service Discovery Approach**
Anthony Hock-Koon and Mourad Oussalah (University of Nantes, France)
2. **Metamodeling User Interfaces and Services for Composition Considerations**
Audrey Occello, Cédric Joffroy, Anne-Marie Dery-Pinna, Philippe Renevier, and Michel Riveill (University of Nice Sophia-Antipolis, France)
3. **Managing API Evolution for Open Software Platforms**
Hyun Cho (University of Alabama, USA), Eunyoung Kim (Samsung Electronics Co., Ltd, Korea), and Jeff Gray (University of Alabama, USA)
4. **ARIS Software: Envision Architecture Expansion Case Study**
Christina N. Meyers (ARIS Software LLC, USA)

4:15 p.m. – 4:30 p.m. Coffee Break

SESSION 3A:

BIOINFORMATICS

Wednesday, June 16, 4:30 p.m. - 6:00 p.m., Sonoma I

Session Chair: Dr. Imad Rahal, College of St. Benedict & St. John's University

1. **A Novel Combinatorial Score for Feature Selection with P-Tree in DNA Microarray Data Analysis**
Yan Wang, Tingda Lu, and William Perrizo (North Dakota State University, USA)
2. **Improving Start Codon Prediction Accuracy Using Naive Bayesian Classification**
Sean R. Landman and Imad Rahal (College of St. Benedict / St. John's University, USA)
3. **A Case Study in Clinical Data Management for Cancer Proteomics**
Ketaki Shirke, John A. Springer, Erik S. Gough, Ali Roumani, Catherine P. Riley, and Charles Buck (Purdue University, USA)

SESSION 3B:

SOFTWARE TESTING

Wednesday, June 16, 4:30 p.m. - 5:30 p.m., Sonoma II

Session Chair: Dr. Narayan Debnath, Winona State University and
Dr. Mark Burgin, UCLA

1. **On Software Test Estimate and Requirement Tracking**
Jing-Chiou Liou (Kean University, USA)
2. **Maximizing GUI Test Coverage Through Particle Swarm Optimization**
Abdul Rauf, Naveed Kazim, Sajid Anwar, Shafiq-Ur Rehman, and Arshad Ali Shahid
(National University of Computer & Emerging Sciences, Islamabad, Pakistan)

Thursday, June 17, 2010

8:30 a.m. – 6:30 p.m. REGISTRATION – Coffee/tea/pastries – SONOMA Foyer

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

Dr. Michael J. Franklin
University of California, Berkeley

**“Solving the Scalability Dilemma with Clouds,
Crowds, and Algorithms”**

Location: SONOMA I, 1st Floor

10:00 a.m. – 10:30 a.m. COFFEE BREAK

SESSION 4A:

SOFTWARE REQUIREMENTS

Thursday, June 17, 10:30 a.m. - 12:00 p.m., Sonoma I

Session Chair: Dr. Jukka Ojasalo, Laurea University of Applied Sciences

- 1. Specifying Components with Compositional Patterns, LOTOS and Design By Contract**
Abdelhafid Zitouni, Mahmoud Boufaida (Mentouri University of Constantine, Algeria),
and Lionel Seinturier (University of Lille, France)
- 2. Towards a Model for Dealing with Aspect Interactions at Requirement Phase**
Amel Boubendir (University of Skikda, Algeria) and Allaoua Chaoui (University Mentouri
Constantine, Algeria)
- 3. Lessons from a Pilot Study for Developing a Tool-kit that Contingently Supports
Teamwork**
Virallikattur Subramanian Dhenesh (University of South Australia, Australia)

SESSION 4B:

**SPECIAL SESSION:
APPLICATIONS IN SOFTWARE ENGINEERING
AND DATA ENGINEERING I**

Thursday, June 17, 10:30 a.m. - 12:00 p.m., Sonoma II

Session Chair: Dr. Narayan Debnath, Winona State University

- 1. An Object Oriented Programming Platform for Ontology Based KMS**
Baisakhi Chakraborty (National Institute of Technology Durgapur, India), Ranjan Kumar
Maji (Jadavpur University, India), and D. Ghosh (National Institute of Technology
Durgapur, India)
- 2. A Framework of Network Forensics System Based on IXP2850**
Jin Zhang (Hainan University, China) and Roger Lee (Central Michigan University,
USA)
- 3. Automating Web Data Model: Conceptual Design to Logical Representation**
Abhijit Sanyal (IBM India Pvt. Ltd, India), Anirban Sarkar (National Institute of
Technology - Durgapur, India), Sankhayan Choudhury (University of Calcutta, India),
and Narayan Debnath (Winona State University, USA)

12:15 p.m. – 2:00 p.m. CONFERENCE LUNCHEON

LOCATION: CASTAGNOLA'S RESTAURANT

**(Walk out hotel and turn right onto Jones - walk straight,
Castagnola's is at the end of Jones Street - 1 1/2 blocks)**

SESSION 5A:

DATA ENGINEERING APPLICATIONS I

Thursday, June 17, 2:15 p.m. - 4:15 p.m., Sonoma I

Session Chair: Dr. Imad Rahal, College of St. Benedict & St. John's University

1. **Metadata Services for Distributed Event Stream Processing Agents**
Mahesh B. Chaudhari and Suzanne W. Dietrich (Arizona State University, USA)
2. **A Recycle-Based Strategy to Modernize Data-Intensive Enterprise Applications for Multi-Tenancy**
Oliver Schiller, Alexander Moosbrugger, and Bernhard Mitschang (University of Stuttgart, Germany)
3. **Exploiting Schema Information for Efficient Streaming Queries**
Dónall McCann, Paolo Cappellari, and Mark Roantree (Dublin City University, Ireland)
4. **Ontology-based Intelligent Network-Forensics Investigation**
Sherif Saad and Issa Traore (University of Victoria, Canada)

SESSION 5B:

**SPECIAL SESSION:
APPLICATIONS IN SOFTWARE ENGINEERING
AND DATA ENGINEERING II**

Thursday, June 17, 2:15 p.m. - 4:15 p.m., Sonoma II

Session Chair: Dr. Narayan Debnath, Winona State University

1. **Towards Integrating Role Playing Game Constructs in Real-Time Strategy Games**
Brad Towle, Monica Nicolescu, and Sergiu Dascalu (University of Nevada, Reno, USA)
2. **Favorite Goal in Agent Based Modeling and Simulation**
Sharad Sharma (Bowie State University, USA)
3. **CBR Applications in Service Organization**
Baisakhi Chakraborty and D. Ghosh (National Institute of Technology, Durgapur, India)
4. **The Arabic Tutor - An Intelligent web based Language Tutoring System for Teaching Arabic**
Dina Salah and Amir Zeid (American University of Kuwait)

4:15 p.m. – 4:30 p.m. Coffee Break

SESSION 6A:

SOFTWARE IMPLEMENTATION AND WEB DEVELOPMENT

Thursday, June 17, 4:30 p.m. - 6:30 p.m., Sonoma I

Session Chair: Dr. Amir Zeid, America University of Kuwait

1. **Applying Enhanced Graph Clustering to Software Dependency Analysis**
Tolga Ovatman, Feza Buzluca (Istanbul Technical University, Turkey), and Thomas Weigert (Missouri University of Science and Technology, USA)
2. **Using Delta-Federations for On-Demand Crisis Situation Response**
Robert Baird and Rose Gamble (University of Tulsa, USA)
3. **Achieving Self-Optimization via Utility Functions**
Debzani Deb (Indiana University of Pennsylvania, USA)
4. **Security Controls Applied to Web Service Architectures**
Robert Baird and Rose Gamble (University of Tulsa, USA)

SESSION 6B:

**SPECIAL SESSION:
APPLICATIONS IN SOFTWARE ENGINEERING
AND DATA ENGINEERING III**

Thursday, June 17, 4:30 p.m. - 6:00 p.m., Sonoma II

Session Chair: Dr. Narayan Debnath, Winona State University

1. **Algorithmic Design and Implementation for Constructing Graphs of Circuits with Minimal Crossing Numbers**
Matthew Wolfe, Bryan McCauley, and Joyati Debnath (Winona State University, USA)
2. **The iPhone Teaching Companion: A Smartphone Application for Education**
Tsvetan A. Komarov and Sergiu Dascalu (University of Nevada-Reno, USA)
3. **Including Non-functional Requirements in the Invocation of Applications from the Workflow Engine using Web Services**
Narayan Debnath (Winona State University, USA), Paola Martellotto, Marcela Daniele (Universidad Nacional Rio Cuarto, Argentina), Daniel Riesco and German Montejano (Universidad Nacional de San Luis, Argentina)

Friday, June 18, 2010

8:30 a.m. – 3:00 p.m. REGISTRATION – Coffee/tea/pastries –SONOMA Foyer

SESSION 7A:

**SPECIAL SESSION:
TECHNOLOGIES FOR BIOMEDICAL APPLICATIONS**

Friday, June 18, 8:30 a.m. - 11:00 a.m., Sonoma I
Session Chair: Drs. Donna Hudson and Maurice Cohen, UCSF

- 1. Lab Norm: Automated Clinical Lab Data Normalization**
Rob Wynden and Donna L. Hudson (University of California San Francisco, USA)
- 2. Predicting Human Hepatic Clearance Using Hypernet Neural Networks**
Shahab Sheikh-Bahaei (UCSF, USA), Kamran A. Ali (University of California-Berkeley, USA), Sabina R. Bera (San Francisco State University, USA), and C. Anthony Hunt (University of California San Francisco, USA)
- 3. A Comparison of Classification Methods for Predicting Osteoporosis**
Karla Lindquist (University of California, San Francisco, USA), and Mark D. Danese (Outcomes Insights, Inc., USA)
- 4. Hadoop and MapReduce for Storage and Processing of Physiological Data**
Andrew V. Nguyen, Donna L. Hudson, and Maurice E. Cohen (University of California-San Francisco, USA)
- 5. An Agent-based System Model to Support Cardiac Tissue Engineering: Preliminary Results**
Laura Gaetano, Giacomo Di Benedetto, Umberto Morbiducci, Franco Montevocchi (Politecnico di Torino, Italy), and Anthony Hunt (University of California San Francisco, USA)

SESSION 7B:

**SPECIAL SESSION:
MODULARIZATION AND RE-USE IN SOFTWARE ARCHITECTURE**

Friday, June 18, 8:30 a.m. - 10:00 a.m., Sonoma II
Session Chair: Dr. Kendra Cooper, University of Texas at Dallas

- 1. A Nonfunctional Requirement Tradeoff Analysis Approach for Reusable SPLE Artifacts**
Lirong Dai (Seattle University, USA)
- 2. Knowledge Maps - Fundamentally Modular Approach to Software Architecture, Design, Development and Deployment**
M. E. Fayad (San Jose State University, USA), H. A. Sanchez (University of California Santa Cruz, USA), and Shivanshu K. Singh (San Jose State University, USA)
- 3. Reusing Evolution Practices onto Object-Oriented Designs: an Experiment with Evolution Styles**
Olivier Le Goer, Mourad Oussalah, and Dalila Tamzalit (University of Nantes, France)

SESSION 7C:**SPECIAL SESSION:
SOFTWARE ENGINEERING APPLICATIONS AND TOOLS**

Friday, June 18, 10:15 a.m. - 12:30 p.m., Sonoma II
Session Chair: Dr. Kyungsoo Im, Clemson University

- 1. Reliability Analysis of Climate Change Data Portals for Nevada**
David J. Walker and Shahram Latifi (University of Nevada - Las Vegas, USA)
- 2. Context-aware Framework for Rural Living Labs**
Olfa Mabrouki (CityPassenger SA, France), Yacine Amirat, Abdelghani Chibani (University of Paris-Est, France), Monica V. Fernandez and Mariano N. de la Cruz (Grupo Tragsa, Spain)
- 3. Designing Services and Systems for Safety of Elderly People at Home: An Ongoing Empirical Study**
Jukka Ojasalo, Rob Moonen, Niko Suomalainen, and Heikki Seppälä (Laurea University of Applied Sciences, Finland)
- 4. Helping Students Learn Expert Software Design Strategies**
David R. Wright (North Carolina State University, USA)
- 5. A New Approach on Priority Queue based Scheduling with Handoff Management for Mobile Networks**
P. K. Guha Thakurta, Souvik Sonar, Biswajit Bhowmik, Swapan Bhattacharya (National Institute of Technology-Durgapur, India), and Subhansu Bandyopadhyay (University of Calcutta, India)

12:30 p.m. – 2:15 p.m LUNCH BREAK ON OWN

SESSION 8A:**DATA ENGINEERING APPLICATIONS II**

Friday, June 18, 2:30 p.m. - 4:00 p.m., Sonoma I
Session Chair: Dr. Suprava Patnaik, Sardar Vallabhbhai Natl. Inst. of Technology

- 1. Spectral Information Guided Complexity Evaluation for Video Codec Design**
Jigisha N. Patel, Suparva S. Patnaik, and Vaibhavi P. Lineswala (Sardar Vallabhbhai National Institute of Technology, India)
- 2. A Novel Approach based on Optical Flow for Moving Object Detection**
Amisha J. Shah (SKPCET, India), Suprava Patnaik, and Jigisha N. Patel (SVNIT, India)
- 3. A Hierarchical Case-Based Computer-Assisted Process-Planning System**
Chi-Chun Hsu, Huan-Yu Lin, Jun-Ming Su (National Chiao Tung University, Taiwan), Shian-Shyong Tseng (Asia University, Taiwan), Chung-Chao Ku, Jui-Pin Tsai (Industrial Technology Research Institute, Taiwan), and Fengming M. Chang (Asia University, Taiwan)

SESSION 8B:

**SOFTWARE PROCESSES
AND SOFTWARE PROJECT MANAGEMENT**

Friday, June 18, 2:30 p.m. - 4:00 p.m., Sonoma II

Session Chair: Dr. Rym Z. Wenkstern, University of Texas at Dallas

1. **A Replication Study of SPI Success Factors for Small to Medium Sized Web Companies**
Muhammad Sulayman and Emilia Mendes (The University of Auckland, New Zealand)
2. **Maintainability Prediction for Database-driven Software Applications - Preliminary Results from Interviews with Software Professionals**
Mehwish Riaz, Emilia Mendes and Ewan Tempero (The University of Auckland, New Zealand)
3. **Planning Techniques for Re-Engineering the Legacy System with Components**
Jeong Ah Kim (Kwandong University)
4. **Measuring the Size of Business Sector and Business Software**
Alen Jakupovic (Polytechnic of Rijeka, Croatia), Mile Pavlic (University of Rijeka, Croatia), and Damir Simunovic (Croatian Radiotelevision, Croatia)