



# Program for the 33rd Annual IEEE International Computers, Software and Applications Conference

*Harmonizing Humans, Computers, and Software  
in Services Environments*

# COMPSAC 2009

*IEEE Signature Conference on Computers, Software and Applications*



Seattle, Washington USA  
Hyatt Regency Bellevue  
July 20-24, 2009



**IEEE**





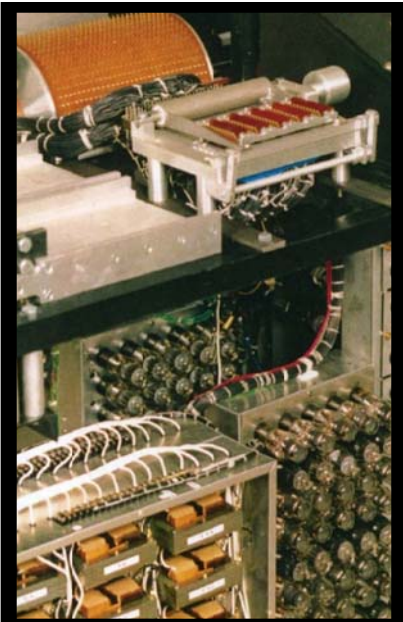
## Welcome to COMPSAC 2009, the IEEE Signature Conference on Computers, Software and Applications

The creation of trustworthy, dependable and distributed computer services satisfying the needs of environments spans all aspects of software systems engineering. COMPSAC is a unique forum to bring together these facets and their major stakeholders. Building on the trustworthy, secure, and dependable distributed software themes of highly successful recent COMPSAC conferences, the technical theme for the 33rd conference is ***Harmonizing Humans, Computers, and Software in Services Environments***.

This program continues to feature research and industrial practice papers with a wide range of topics, focusing (but not exclusively) on software and middleware development for distributed platforms, social and collaborative networks, services computing, cloud computing, data center design and applications, communication applications, and mobile and embedded systems. To properly engineer such domains, the foundations, methodologies, and mechanisms that support the design, modelling, and evaluation of software systems and computer applications must come from diverse sources. Topics of interest include but are not limited to: requirement analysis, co-analysis/co-design, modelling, development, testing, measurement, verification, validation, performance, autonomy, safety, security, and dependability constraints. Effective construction of these systems is not limited solely to the field of computer science and engineering and comes as a synergetic effort, between various domains of research. Multidisciplinary work, research and development of software prototypes, industry-university collaborations, all based on new emerging and critical technologies are of particular interest to this conference. All accepted papers listed in this program can be found in their full text form in the electronic proceedings published by the IEEE Computer Society, indexed through INSPEC and EI Index, and automatically included in the IEEE digital library.

We greatly appreciate the sponsorship of IEEE and the IEEE Computer Society. We would also like to thank our 2009 supporters: The U.S. National Science Foundation, Microsoft Research, Iowa State University (USA), Purdue University (USA), Tsinghua University (China), and the University of Westminster (UK).





Plenary Roundtable Discussion

Wednesday July 22, 2009

1:30-3:00pm

Regency Ballroom

## 70 Years Electronic Digital Computing that Changed the World

**2009** marks the 70<sup>th</sup> anniversary of the first proof-of-concept prototype of the electronic digital computer. This technical forum will re-examine, from a modern perspective, the contribution of John V. Atanasoff to the invention and development of electronic digital computing.

### Hosts:

John V. Atanasoff II,  
JVA Initiative

Carl K. Chang,  
Iowa State University

### Moderator:

Vladimir Getov,  
University of Westminster

### Panelists:

Gordon Bell, Microsoft  
Charles Call,  
Patent Attorney, Chicago IL

John Gustafson, Intel

Mike Williams,  
University of Calgary

### Distinguished Guests:

Mike Geselowitz,  
IEEE History Center

Richard J. Gowen,  
IEEE Foundation

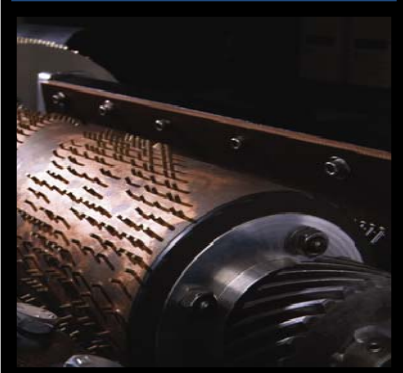
### **Expert panelists will present their views on:**

1. The variety of different technologies explored and used in the early days of automatic computing.
2. The advantages of digital vs. analog calculations.
3. The importance of binary arithmetic for electronic digital computing.
4. The engineering challenge for the design of dynamically refreshed memory.

### **Discussion questions will include:**

1. How have the main principles of electronic digital computing invented by John V. Atanasoff propagated to most of the computer designs today?
2. Does the introduction of electronic digital computing mark the beginning of a new revolution in human history?
3. What was the impact of the 1973 federal court decision on the recognition of Atanasoff's invention?

**Additional questions from the audience are welcome and encouraged!**



Sponsored by the JVA Initiative Endowment at

**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

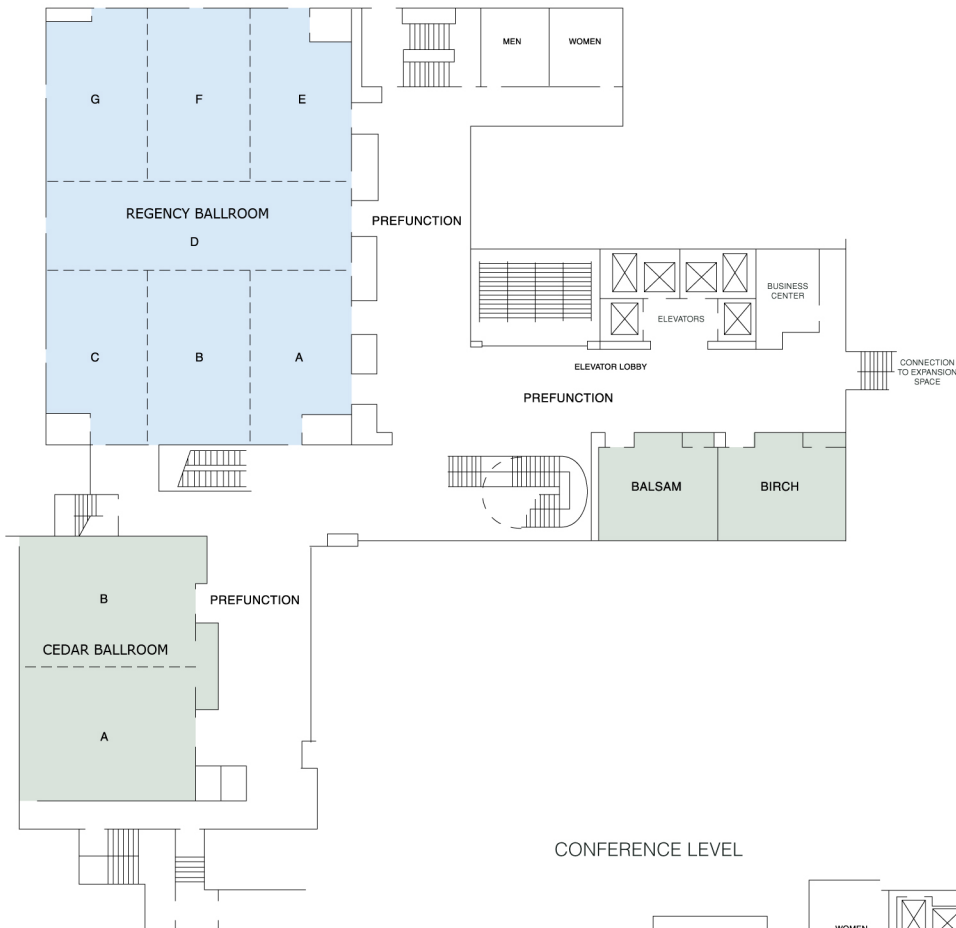


## Hyatt Regency Bellevue

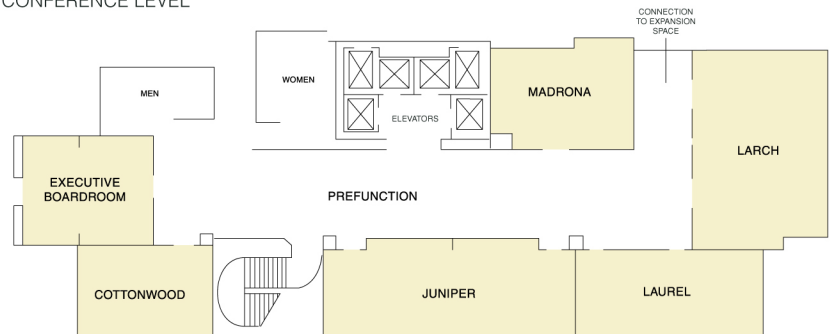
### DIRECTIONS

Directions from Sea-Tac Int'l Airport (17 miles): Follow signs to "All Freeways". Take Hwy. 518 to 405 North to Bellevue for 14 miles. Exit onto NE 8th St. West (exit #13B). Follow NE 8th for 6 1/2 blocks. Hotel is on right after crossing 106th Ave, at corner of NE 8th and Bellevue Way.

### BALLROOM LEVEL



### CONFERENCE LEVEL



## Monday July 20: Workshop Day

ROOM:	Cedar A	Cedar B	Larch	Laurel	Juniper	Regency AB	Cottonwood	Regency EF
8:30-9:30	REFS I	QUORS I	ESAS I	STPSA I	RTSOAA I	SECASA I	ME I	IWSC I
9:30-10:00	Morning Break							
10:00-11:30	REFS II	QUORS II	ESAS II	STPSA II	RTSOAA II	SECASA II	ME II	IWSC II
11:30-13:30	Lunch							
13:30-15:00	REFS III	QUORS III	ESAS III	STPSA III	RTSOAA III	SECASA III		IWSC III
15:00-15:30	Afternoon Break							
15:30-17:00		QUORS IV			RTSOAA IV			
19:00-21:00	COMPSAC/SAINT Joint Welcome Reception: East Lawn Garden, adjacent to Hyatt Regency Bellevue (alternate rain location: Regency Ballroom)							

## Tuesday July 21: Conference Day 1

<p>8:00am: Opening Session: Joint COMPSAC/SAINT Keynote            Opening and Welcome Remarks            Best Paper Awards            Keynote Address: Larry Smarr  <i>Project Greenlight: Optimizing Cyberinfrastructure for a Carbon Constrained World</i>            Location: Regency Ballroom            Session Chair: Elisa Bertino, COMPSAC09 Program Chair</p>				
ROOM:	Regency Ballroom ABC	Larch	Laurel	Juniper
10:00-10:30	Morning Break			
10:30-12:00	Doctoral Symposium I	Testing I	Location Based Services I	Software Evolution I
12:00-13:30	Lunch			
13:30-15:00	Doctoral Symposium II	Software Quality I	Testing II	Social Networks I
15:00-15:30	Afternoon Break			
15:30-17:00	Panel I: Interoperable Identity Services	Requirements Engineering I	Embedded Systems I	Software Quality II
18:30-20:30	COMPSAC/SAINT Presidential Reception: Regency Ballroom			
20:30-22:00	COMPSAC/SAINT Planning Meeting: Juniper Room, All invited			

## Wednesday July 22: Conference Day 2

<p>8:30am: Joint COMPSAC/SAINT Keynote            Keynote Address: Tony Hey, <i>Programming the Cloud</i>            Location: Regency Ballroom            Session Chair: Vladimir Getov, COMPSAC09 Program Chair</p>					
ROOM:	Regency ABC	Larch	Laurel	Juniper	Regency FG
10:00-10:30	Morning Break				
10:30-12:00	Social Networks II	Software Quality III	Security I	Testing III	Location Based Services II
12:00-13:30	Lunch				
13:30-15:00	Roundtable: 70 Years Electronic Digital Computing that Changed the World Session Chair: Vladimir Getov, COMPSAC09 Program Chair Grand Ballroom				
15:00-15:30	Afternoon Break				
15:30-17:00	Panel II: Evolution of Services Computing Curriculum and Services University	Requirements Engineering II	Fast Abstracts I	Testing IV	Software Architecture I
18:30-20:30	COMPSAC/SAINT Conference Banquet: Argosy Cruise through the Navy Locks Shuttle buses departs Hyatt at 5:30pm; Ship departs 7pm from Naval Reserve Dockyard on Lake Washington *YOU MUST PRESENT YOUR TICKET AT BOARDING TO ATTEND!				



**Thursday July 23: Conference Day 3**

8:30am: COMPSAC/SAINT Joint Keynote

Keynote Address: Tatsuaki Okamoto, *Towards Fine-Grained Secure Communications*

Location: Regency Ballroom

Session Chair: Haruo Takemura, SAINT 2009 General Chair

ROOM:	Regency ABC	Larch	Laurel	Juniper
10:00-10:30	Morning Break			
10:30-12:00	Panel III: New Paradigms in Software Testing: Towards Solutions	Software Architecture II	Mobile and Pervasive Computing I	Formal Methods
12:00-13:30	Lunch			
13:30-15:00	Best Practice	Software Architecture III	Mobile and Pervasive Computing II	Fast Abstracts II
15:00-15:30	Afternoon Break			
15:30-17:00	Joint Panel: Emerging Pervasive Systems: Research Challenges and Proposed Solutions		Education and Learning	Security II
17:30-22:00	COMPSAC/SAINT Joint Planning: Invitation Only			

**Friday July 24: Workshop Day**

8:30-10:00	Joint Concluding Panel: Security and Privacy in Community-based Internet Applications Location: Regency Ballroom Chaired by Stephen Yau, Arizona State University					
ROOM:	Larch	Laurel	Juniper	Regency AB	Cottonwood	Regency EF
10:00-10:30	Morning Break					
10:30-12:00	SAPSE I	STA I	CORCS I	BINDIS I	IEESD	CFSE I
12:00-13:30	Lunch					
13:30-15:00	SAPSE II	STA II	CORCS II	BINDIS II		CFSE II
TRAVEL SAFELY! SEE YOU NEXT YEAR IN SEOUL, KOREA FOR COMPSAC 2010						

## Monday July 20, 2009

### 3rd IEEE International Workshop on Requirements Engineering For Services (REFS 2009)

Location: Cedar Ballroom A

Organizing Chairs: Lin Liu, Tsinghua University, China; Colette Rolland, University of PARIS-1 Pantheon Sorbonne, France;  
Eric Yu, University of Toronto, Canada; Jian Yang, Macquarie University, Australia

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#### 8:00-9:30 Session I: Services Requirements Modelling Specification

Chair: Jian Yang, Macquarie University, Australia

- *Requirements Engineering Needs in a Solution and Infrastructure Improvement Project*  
Xiping Song, William Sherman, Beatrice Hwong, Brian Berenbach, Gilberto Matos
- *Rediscovering Zachman Framework using Ontology from a Requirement Engineering Perspective*  
Zhuozhi Chen, Rob Pooley
- *A Scenario-Based Architecture Evaluation Framework for Network Enabled Capability*  
Colin C. Venters, Duncan J. Russell, Lu Liu, Zongyang Luo, David E. Webster, Jie Xu
- *Decomposition and Traceability in Software Design*  
Hung-Fu Chang, Stephen C-Y. Lu

#### 10:00-11:30 Session II: Workshop Panel on Requirements Engineering for Services

Moderator: Colette Roland, University of PARIS-1 Pantheon Sorbonne, France

Panelists: Eric Dubois, CRP Henry Tudor, Luxembourg; Lin Liu, Tsinghua University, China; Xiping Song, Siemens Corporate Research, USA;  
Jian Yang, Macquarie University, Australia; Eric Yu, University of Toronto, Canada

### 4th IEEE International Workshop on Engineering Semantic Agent Systems (ESAS 2009)

Location: Larch Room

Organizing Chairs: Atilla Elçi, Eastern Mediterranean University, North Cyprus; Mamadou Tadiou Kone, C.I.D.T. Bouake, Ivory Coast;  
Mehmet A. Orgun, Macquarie University, Australia

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#### 8:00-9:30 Session I: Semantic Mining

Chair: Tugkan Tuglular, Izmir Institute of Technology, Turkey

- *Variable Support Based Association Rule Mining*  
Rajul Anand, Ravi Agrawal, Joydip Dhar
- *Social Graph Generation & Forecasting using Social Network Mining*  
Marjaneh Safaei, Merve Sahan, Mustafa Ilkan

#### 10:00-11:30 Session II: Mobile Agents

Chair: Weichang Du, University of New Brunswick, Canada

- *Mobile-agent Approach for Mobile Code Localization in Ad-hoc Networks*  
Zafoune Youcef, Mokhtari Aïcha, Kanawati Rushed
- *Implementing an Mobile Agent Platform for M-Commerce*  
Xining Li, Guillaume Autran
- *Semantic Web Enabled Composition of Semantic Web Services*  
Duygu Çelik, Atilla Elçi

#### 13:30-15:00 Session III: Semantic Agent Systems

Chair: William Wei Song, Durham University, UK

- *An Architecture for Verification of Access Control Policies with Multi Agent System Ontologies*  
Fatih Tekbacak, Tugkan Tuglular, Oguz Dikenelli
- *OWL Manipulation toward Building Semantic Applications and Agents*  
Pooyan Balouchian, Amin Almassian, Atilla Elçi
- *Agent-Oriented Middleware for Mobile eLearning Services*  
Stanimir Stoyanov, Ivan Ganchev, Máirtín O'Droma, Hussein Zedan, Veselina Valkanova

### 2nd IEEE International Workshop on Real-Time Service-Oriented Architecture and Applications (RTSOAA 2009)

Location: Juniper Room

Organizing Chairs: Jun-Jang Jeng, IBM TJ Watson, USA ; Carolyn McGregor, University of Ontario Institute of Technology, Canada;  
Josef Schiefer, Vienna University of Technology, Austria

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#### 8:00-8:15 Opening Remarks by Jung-Jang Jeng, IBM TJ Watson, USA

#### 8:15-9:30 Session I: RTSOAA Models

- *Real-time Guarantees in Flexible Advance Reservations*  
Kleopatra Konstanteli, Dimosthenis Kyriazis, Theodora Varvarigou, Tommaso Cucinotta, Gaetano Anastasi
- *Respecting Temporal Constraints in Virtualised Services*  
Tommaso Cucinotta, Gaetano Anastasi, Luca Abeni
- *Universal and Extensible Service-Oriented Platform Feasibility and Experience: The Service Abstract Machine*  
Jacky Estublier, Eric Simon

#### 10:00-11:30 Session II: RTSOAA for Cloud

- *Toward a Smart Cyber-Physical Space: A Context-Sensitive Resource-Explicit Service Model*  
Jian Huang, Farokh Bastani, I-Ling Yen, Jun-Jang Jeng
- *Towards Self-manageable Cloud Services*  
Ivona Brandic
- *Dynamic Service and Data Migration in the Clouds*  
Wei Hao, I-Ling Yen, Bhavani Thuraisingham

- 13:30-15:00      **Session III: RTSOAA Infrastructure**
- *Building an Enterprise Service Bus for Real-Time SOA: A Messaging Middleware Stack*  
Luis Garcés-Erice
  - *A Service Broker Providing Real-time Telecommunications Services for 3rd Party Services*  
Niklas Blum, Irina Boldea, Thomas Magedanz, Ulrich Staiger, Horst Stein
  - *A Complex Event Routing Infrastructure for Distributed Systems*  
Gabe Wishnie, Hossein Saiedian

- 15:30-16:45      **Session IV: RTSOAA Applications**
- *A Survey of Physiological Monitoring Data Models to Support the Service of Critical Care*  
Carolyn McGregor, Kathleen P. Smith
  - *Microcontroller-based AWGNG for Security Enhancement of Embedded Real-time Web Services*  
Behnam Rahnama, Atilla Elçi, Ramin Bakhshi, Alirad Malek, Arjang Ahmadi
  - *Clustering Versus Shared Nothing: A Case Study*  
Jonathan Lifflander, Adam McDonald, Orest Pilskalns

15:45-16:00      **Concluding Remarks**

### 1st IEEE International Workshop on Middleware Engineering (ME 2009)

**Location: Cottonwood Room**

**Organizing Chairs: Rong Ge, Marquette University, USA; Praveen Madiraju, Marquette University, USA**

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- 8:00-9:30      **Session I**  
**Chair: Praveen Madiraju, Marquette University, USA**
- *An OSGi Based In-Vehicle Gateway Platform Architecture for Improved Sensor Extensibility and Interoperability*  
Pyungsun Park, Hongbin Yim, Heeseok Moon, Jaeil Jung
  - *Performance Impact Analysis of Two Generic Group Communication APIs*  
Leandro Sales, Henrique Teófilo, Jonathan D'Orleans, Nabor C. Mendonca, Rafael Barbosa, Fernando Trinta
  - *Middleware for RFID Systems: An Overview*  
Jameela Al-Jaroodi, Junaid Aziz, Nader Mohamed

- 10:00-11:30      **Session II**  
**Chair: Praveen Madiraju, Marquette University, USA**
- *A Software Product Line Architecture for Grid-Oriented Middleware*  
Davi Oliveira, Nelson Rosa
  - *Design of MIDA, a Web-Based Diagnostic Application for Hydroelectric Generators*  
Luc Vouligny, Claude Hudon, Duc Ngoc Nguyen
  - *An Algorithm for Mining Frequent Items on Data Stream Using Fading Factor*  
Ling Chen, Shan Zhang, Li Tu

### 2nd IEEE International Workshop on Software Engineering for Context Aware Systems and Applications (SECASA 2009)

**Location: Regency Ballroom A**

**Organizing Chairs: John Plaiçe, University of New South Wales, Australia; Weichang Du, University of New Brunswick, Canada; Rondogiannis Panagiotis, University of Athens, Greece**

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- 8:00-9:30      **Session I**
- *Context-Aware Trust Management for Peer-to-Peer Mobile Ad-Hoc Networks*  
Rajan Shankaran, Vijay Varadharajan, Mehmet Orgun, Michael Hitchens
  - *A Contextual Guidance Approach to Software Security*  
Philipp Schugerl, David Walsh, Juergen Rilling, Philippe Charland
  - *AlertMe: A Semantics-based Context-Aware Notification System*  
Asterios Leonidis, George Baryannis, Xenofon Fafoutis, Maria Korozi, Niki Gazoni, Michail Dimitriou, Maria Koutsogiannaki, Aikaterini Boutsika, Myron Papadakis, Haridimos Papagiannakis, George Tesseris, Emmanouil Voskakis, Antonis Bikakis, Grigoris Antoniou

- 10:00-11:30      **Session II**
- *A Quality-Aware Context Middleware Specification for Context-Aware Computing*  
Yuanping Li, Ling Feng
  - *Context Analysis of Intensional Languages*  
Weichang Du, Khaled Ben Hamed
  - *Distributed Eductive Execution of Hybrid Intensional Programs*  
Joey Paquet

- 13:30-15:00      **Session III**
- *Relaxed Objects - Object Model for Context-Aware Applications*  
Michal Kopecký, Michal Žemlička
  - *Cartesian Programming: The TransLucid Programming Language*  
John Plaiçe, Blanca Mancilla
  - *Declarative Multithreaded Programming*  
Blanca Mancilla, John Plaiçe



### 3rd IEEE International Workshop on Quality Oriented Reuse of Software (QUORS 2009)

Location: Cedar Ballroom B

Organizing Chairs: Xiaodong Liu, Napier University, UK; Hongji Yang, DeMontfort University, UK

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8:00-9:30

#### Session I: Service Based Systems

Chair: Anne Miller, Verizon Communications, USA

- *Formal Analysis of Services Compatibility*  
Xueqiang Gong, Jing Liu, Miaomiao Zhang, Jueliang Hu
- *A Perspective on Middleware-oriented Context-aware Pervasive Systems*  
Zakwan Jaroucheh, Xiaodong Liu, Sally Smith

10:00-11:30

#### Session II: Design Pattern and Advanced Software Design

Chair: Xiaodong Liu, Edinburgh Napier University, UK

- *Towards a Problem Oriented Engineering Theory of Pattern-Oriented Analysis and Design*  
Jerry Overton, Jon G. Hall, Lucia Rapanotti, Yijun Yu
- *A Model-Driven Multicore Software Development Environment for Embedded System*  
Chihhsiong Shih, Pao-Ann Hsiung, Nien-Lin Hsueh, Chih-Hung Chang, Chong-Shiuh Koong, William C. Chu
- *Photon: A Domain-specific Language for Testing Converged Applications*  
Anne Miller, Balaji Kumar, Anukul Singhal

13:30-15:00

#### Session III: Software Reuse

Chair: Hongji Yang, DeMontfort University, UK

- *Using Artifact Flow Diagrams to Model Artifact Usage Anomalies*  
Hwai-jung Hsu, Feng-jian Wang
- *Dual-Container: Extending the EJB2.x Container to Support EJB3.0*  
Ziyou Wang, Minghui Zhou, Donggang Cao, Haiyan Zhao
- *Best Principles in the Design of Shared Software*  
Dino Konstantopoulos, John Marien, Mike Pinkerton, Eric Braude

15:30-17:00

#### Session IV: Software Evolution

Chair: Yang Li, BT Innovate, British Telecom plc, UK

- *Domain Analysis in the Reengineering Process of a COBOL System*  
Richard Millham, Hongji Yang
- *A Business-Logic Based Framework for Evolving Software Systems*  
Mohammed Alawairdhi, Hongji Yang
- *A Constraint Based Bug Checking Approach for Python*  
Baowen Xu, Tianlin Zhou, Xiaoyu Zhou

### 4th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA 2009)

Location: Laurel Room

Organizing Chairs: Sheikh Iqbal Ahamed, Marquette University, USA; Mohammad Zulkernine, Queen's University, Canada

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8:00-9:30

#### Session I

Chair: Rafael Accorsi, University of Freiburg, Germany

- *Agent Protection Based on the Use of Cryptographic Hardware*  
Antonio Muñoz, Antonio Maña, Rajesh Harjani, Marioli Montenegro
- *Towards Usable Solutions to Graphical Password Hotspot Problem*  
Kemal Bicakci, Nart Bedin Atalay, Mustafa Yuceel, Hakan Gurbaslar, Burak Erdeniz
- *On Information Flow Forensics in Business Application Scenarios*  
Claus Wonnemann, Rafael Accorsi, Günter Müller

10:00-11:30

#### Session II

Chair: Zhenping Wu, University of Bridgeport, USA

- *An Enforcement Architecture for Security and Trust Policies in Federated Web-service-based Systems*  
Zhengping Wu, Lifeng Wang
- *A Model for Privacy Policy Visualization*  
Kambiz Ghazinour, Maryam Majedi, Ken Barker

13:30-15:00

#### Session III

Chair: Bruce M. McMillin, Missouri University of Science and Technology, USA

- *The Security Implication of Multiple Observers in a Distributed System*  
Derek P. Ditch, Bruce M. McMillin
- *Defending Battery Exhaustion Attacks on Mobile Systems*  
Sungyong Shin, Taek Lee, Hoh Peter In
- *On Selecting Appropriate Development Processes and Requirements Engineering Methods for Secure Software*  
Muhammad Umair Ahmed Khan, Mohammed Zulkernine

**6th IEEE International Workshop on Software Cybernetics: Harmonizing Software Engineering and Control Theory (IWSC 2009)**

**Location: Regency Ballroom E**

**Organizing Chairs: Joao Cangussu, University of Texas at Dallas, USA; Ratnesh Kumar, Iowa State University, USA; Ron Kenett, KPA, Israel**

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8:00-9:30

**Session I**

**Chair: Ratnesh Kumar, Iowa State University, USA**

**Introduction and Welcome to IWSC 2009 by Ron S. Kenett, KPA, Israel**

**Keynote: Scott Lintelman, Boeing Networked Systems Technology, USA**

10:00-11:30

**Session II**

**Chair: Joao W. Cangussu, University of Texas at Dallas, USA**

- *Adaptive Control Framework for Software Components: Case-Based Reasoning*  
Mykola Tkachuk, Sergii Polkovnikov, Sergiy Bronin
- *Modeling Simulink Diagrams using Input/Output Extended Finite Automata*  
Changyan Zhou, Ratnesh Kumar
- *T3: Secure, Scalable, Distributed Data Movement and Remote System Control for Enterprise Level Cyber Security*  
Gregory S. Thomas, Bill Nickless, David R. Thiede, Ian Gorton, Bill J. Pitre, Jason E. Christy, Liz Faultersack, Jeffery A. Mauth

13:30-15:00

**Session III**

**Chair: Kai-Yuan Cai, Beijing University of Aeronautics and Astronautics, China**

- *A Control-Based Approach to Balance Services Performance and Security for Adaptive Service Based Systems (ASBS)*  
Chang Liu, Changhai Jiang, Hai Hu, Kai-Yuan Cai, Dazhi Huang, Stephen S. Yu
- *Prevention of Sequential Message Loss in CAN Systems*  
Shengbing Jiang, Ratnesh Kumar
- *Risk-based Adaptive Group Testing of Semantic Web Services*  
Xiaoying Bai, Ron S. Kenett

19:00-21:00

**Welcome Reception: East Lawn Garden, adjacent to Hyatt Regency Bellevue—enter through the Wintergarden Lobby (main Hyatt lobby)  
Alternate rain location: Regency Ballroom**

**Tuesday, July 21, 2009**

8:00-9:00

**Opening Session and Keynote**

**Location: Regency Ballroom**

**Joint Conference Welcome:** Carl Chang, Chair, COMPSAC Steering Committee, Chair, SAINT Steering Committee

**Welcome Remarks:** Darrell Long, General Chair SAINT09; Tony Hey, General Chair COMPSAC09

**Opening Remarks:** Susan K. Land, 2009 President, IEEE Computer Society

**COMPSAC Program Overview:** Vladimir Getov, COMPSAC09 Program Chair

**SAINT Program Overview:** Morris Chang, Kenichi Yoshida, SAINT09 Program Chairs

**COMPSAC Best Paper Awards:** Lin Liu, COMPSAC Program Chair

**SAINT Best Paper Awards:** Kilnam Chon, Johnny Wong, SAINT Awards Chairs

9:00-10:00

**Keynote: *Project Green Light: Optimizing Cyber Infrastructure for a Carbon Constrained World***

Larry Smarr, California Institute for Telecommunications and Information Technology, USA

Chair: Elisa Bertino, Purdue University, USA

10:00-10:30

**AM Break**

10:30-12:00

**Parallel Sessions**

**Location Based Services (Privacy Protection in Location Based Services)**

**Chair: Paolo Bellavista, University of degli Studi di Bologna, Italy**

**Location: Laurel Room**

- *A Privacy Enhancing Approach for Identity Inference Protection in Location Based Services*  
Sharif Hasan, Sheikh Iqbal Ahamed, Mohammad Tanviruzzaman
- *ELALPS: A Framework To Eliminate Location Anonymizer from Location Privacy Systems*  
Mehrab Monjur, Sheikh Ahamed, Chowdhury Sharif Hasan
- *Indoor Navigation on Distributed Stationary Display Systems*  
Peter Ruppel, Florian Gschwandtner, Corina Kim Schindhelm, Claudia Linhoff-Popien

**Software Evolution I (Software Architecture Development and Evaluation)**

**Chair: Atilla Elçi, Eastern Mediterranean University, North Cyprus**

**Location: Juniper Room**

- *Aspectual Separation of Feature Dependencies for Flexible Feature Composition*  
Kwanwoo Lee, Goetz Botterweck, Steffen Thiel
- *Initiating and Institutionalizing Software Product Line Engineering: from Bottom-up Approach to Top-down Practice*  
Dong Li, Carl Chang
- *Transforming a Software Product Company into a Service Business: Case Study at F-Secure*  
Marko Komssi, Marjo Kauppinen, Juho Heiskari, Matti Ropponen
- *Viewpoint-Oriented Variability Modeling*  
Mike Mannion, Juha Savolainen, Timo Asikainen

## Testing I (Context-aware Software Analysis)

Chair: Hong Zhu, Oxford Brooks University, UK

Location: Larch Room

- *Practical Extensions of a Randomized Testing Tool*  
Hojun Jaygarl, Sung Kim, Carl Chang
- *3D Support for Business Process Simulation*  
Daniel Eichhorn, Agnes Koschmider, Yu Li, Peter Stürzel, Andreas Oberweis, Ralf Trunko
- *An Empirical Study of the Use of Frankl-Weyuker Data Flow Testing Criteria to Test BPEL Web Services*  
Lijun Mei, W. K. Chan, T. H. Tse, F. C. (Diana) Kuo

## Doctoral Symposium

Chair: Jinchun Xia, San Jose State University, USA

Room: Regency Ballroom ABC

- *Dihomotopic Reduction Used in Deadlock Detection*  
David Cape, Bruce McMillin
- *Towards a Resource-Aware Component Model for Embedded Systems*  
Aneta Vulgarakis
- *Efficient Management of Consistent Backups in a Distributed File System*  
Jan Stender
- *Model-checking BNDC Properties in Cyber-physical Systems*  
Ravi Akella, Bruce McMillin

12:00-13:30            **Lunch**

13:30-15:00         **Parallel Sessions**

## Doctoral Symposium

Chair: Jinchun Xia, San Jose State University, USA

Location: Regency Ballroom ABC

- *On Expressing Different Concurrency Paradigms on Virtual Execution Systems*  
Cristian Dittamo
- *A General Framework for Quantitative Modeling of Dependability in Cyber-Physical Systems: A Proposal for Doctoral Research*  
Jing Lin, Sahra Sedigh, Ann Miller
- *Reliability Modeling for the Advanced Electric Power Grid: A Proposal for Doctoral Research*  
Ayman Faza, Sahra Sedigh, Bruce McMillin
- *An Integrated Framework for Checking Concurrency-related Programming Errors*  
Qichang Chen, Liqiang Wang

## Software Quality I (Software Quality Measurement, Modelling and Analysis)

Chair: Ron Kenett, KPA, Israel

Location: Larch Room

- *Towards Improving OCL-based Descriptions of Software Metrics*  
Taeyeon Kim, Yunkyung Kim, Heung Seok Chae
- *Modeling and Predicting Software Failure Costs*  
Michael Grottke, Christian Graf
- *A Service Discovery System Analyzed with a Queueing Theory Model*  
Beihong Jin, Haibin Weng, Yunfeng Wen, Faen Zhang

## Testing II (Modularization, Composition and Reuse)

Chair: Tugkan Tuglular, Izmir Institute of Technology, Turkey

Location: Laurel Room

- *How Well Do Test Case Prioritization Techniques Support Statistical Fault Localization*  
Bo Jiang, Zhenyu Zhang, W.K. Chan, T. H. Tse, T. Y. Chen
- *Automatic Discovery of Web Services Based on Dynamic Black-Box Testing*  
Youngki Park, Woosung Jung, Byungjeong Lee, Chisu Wu
- *An Improved Test Case Generation Method for Web Service Testing from WSDL-S and OCL with Pair-wise Testing Technique*  
Siripol Noikajana, Taratip Suwannasart

## Social Networks I (Collaborative Networks)

Chair: Doo-Hwan Bae, KAIST, Korea

Location: Juniper Room

- *Computing Reputation for Collaborative Private Networks*  
Jordi Nin, Barbara Carminati, Elena Ferrari, Vicenç Torra
- *Towards the Operational Semantics of User-centric Communication Models*  
Yingbo Wang, Yali Wu, Andrew Allen, Barbara Espinoza, Peter Clarke, Yi Deng
- *Software Outsourcing Subcontracting and Its Impacts: An Exploratory Investigation*  
Yi Wang, Huihui Shi

15:00-15:30            **PM Break**

15:30-17:00         **Parallel Sessions**

## Panel 1: Interoperable Identity Services

Location: Regency Ballroom ABC

Moderator: Kenji Takahashi and Paul Madsen, NTT, Japan

Panelists: Chi-Hung Chi, Tsinghua University, China; Kim Cameron, Microsoft, USA; Soren Peter Andersen, Danish National IT and Telecom Agency, Denmark; Joseph Smarr, Plaxo, USA

## Software Quality II (Software and Services Reliability Models)

Chair: T.H. Tse, The University of Hong Kong

Location: Juniper Room

- *A Hierarchical Reliability Model of Service-Based Software System*  
Lijun Wang, Xiaoying Bai, Yinong Chen, Lizhu Zhou
- *Applicability of Software Reliability Growth Modeling in the Quality Assurance Phase of a Large Business Software Vendor*  
Arne Beckhaus, Lars M. Karg, Gerrit Hanselmann
- *Towards Transaction-based Reliable Service Compositions*  
Chang-ai Sun

## Embedded Systems I (Design and Verification of Embedded Systems)

Chair: Tiberiu Seceleanu, ABB Corporate Research, Sweden

Location: Laurel Room

- *ACaMES: A Novel Design Methodology on Multicore Embedded System*  
Youngsam Shin, Seungwon Lee
- *ESIDE: An Integrated Development Environment for Component-Based Embedded Systems*  
Nicholas Pilkington, Juncao Li, Fei Xie
- *Formalization and Verification of PLC Timers in Coq*  
Hai Wan, Gang Chen, Xiaoyu Song, Ming Gu

## Requirements Engineering I (Requirements Structure, Analysis, and Traceability)

Chair: Eric Dubois, CRP Henry Tudor, Luxembourg

Location: Larch Room

- *System Safety Requirements As Control Structures*  
Zhe Chen, Gilles Motet
- *Improving E-Government through Benefit Analysis and Value Modeling*  
Gustaf Juell-Skielse, Erik Perjons
- *Traceability ReARMed*  
Joern David, Maximilian Koegel, Helmut Naughton, Jonas Helming

18:30-20:30

**COMPSAC 2009 Presidential Reception – Regency Ballroom**

20:30-22:00

**COMPSAC/SAINT 2010 Planning Meeting**

Location: Juniper Room, All invited

## Wednesday, July 22, 2009

8:00-10:00

**Keynote: *Programming the Cloud***

**Tony Hey, Corporate Vice President, External Research, Microsoft Research, Microsoft Corporation, USA**

**Location: Regency Ballroom**

**Chair: Vladimir Getov, Westminster University, UK**

10:00-10:30

**AM Break**

10:30-12:00

**Parallel Sessions**

## Security I (Security Analysis and Protection Techniques)

Chair: Xuhai Zou, Purdue University, USA

Location: Laurel Room

- *Analyzing Semantics of Documents by using a Program Analysis Method*  
Hiroyuki Sato
- *Tamper Resistance for Software Defined Radio Software*  
Shucai Xiao, Jung-Min "Jerry" Park, Yanzhu Ye
- *A Multiple Secret Sharing Scheme based on Matrix Projection*  
Kai Wang, Xukai Zou, Yan Sui

## Software Quality III (Software Quality Improvement Technique)

Chair: Kai-yuan Cai, Beijing University of Aeronautics and Astronautics, China

Location: Larch Room

- *Toward Middleware-based Online Application Migration*  
Fang Deng, Qianxiang Wang, Jin Shao
- *Tool Support for Design Pattern Recognition at Model Level*  
Hong Zhu, Ian Bayley, Lijun Shan, Richard Amphlett
- *Predicting Change Impact in Object-Oriented Applications with Bayesian Networks*  
Abdi Mustapha Kamel, Lounis Hakim, Sahraoui Houari
- *Modeling and Performance Analysis of Software Rejuvenation Policies for Multiple Degradation Systems*  
Xiaozhi Du, Yong Qi, Di Hou, Ying Chen, Xiao Zhong

### Testing III (Testing Economics, Models and Analysis)

Chair: Xiaoying Bai, Tsinghua University, China

Location: Juniper Room

- *An Economical Approach to Usability Testing*  
Carl Mueller, Dan Tamir, Oleg Komogortsev, Liam Feldman
- *A Sentence Generation Algorithm for Testing Grammars*  
Lixiao Zheng, Duanyi Wu
- *Software Input Space Modeling with Constraints among Parameters*  
Sergiy Vilkomir, Thomas Swain, Jesse Poore
- *HEAT: An Integrated Static and Dynamic Approach for Thread Escape Analysis*  
Qichang Chen, Liqiang Wang, Zijiang Yang

### Social Networks II (Trust and Contracting in Social Networks)

Location: Regency Ballroom ABC

Chair: Chi-Hung Chi, Tsinghua University, China

- *Leveraging Social Contacts for Message Confidentiality in Delay Tolerant Networks*  
Karim El Defrawy, John Solis, Gene Tsudik
- *Hot Set Identification for Social Network Applications*  
Claudia Canali, Michele Colajanni, Riccardo Lancellotti
- *An Agent-Based Framework Supporting Trust Evaluation for Service Selection*  
Manling Zhu, Zhi Jin
- *A Framework for Enabling User-controlled Persona in Online Social Networks*  
Dongwan Shin, Rodrigo Lopes, Gail-Joon Ahn

### Location Based Services II

Location: Regency Ballroom FG

Chair: Yang Li, BT Innovate, British Telecom plc, UK

- *Improvements for 802.11-based Location Fingerprinting Systems*  
Hendrik Lemelson, Stephan Kopf, Thomas King, Wolfgang Effelsberg
- *Enhancing the Scalability of IMS-based Presence Service for LBS Applications*  
Paolo Bellavista, Antonio Corradi, Luca Foschini

12:00-13:30      **Lunch**

13:30-15:00      **Roundtable: 70 Years: Electronic Digital Computing that Changed the World**  
**Location: Regency Ballroom**  
**Hosts: John V. Atanasoff II, JVA Initiative; Carl K. Chang, Iowa State University**  
**Distinguished Guests: Richard J. Gowan, IEEE Foundation, USA; Mike Geselowitz, IEEE History Center, USA**  
**Moderator: Vladimir Getov, COMPSAC09 Program Chair**  
**Panelists: Gordon Bell, Microsoft, USA; Charles Call, Patent Attorney, Chicago, IL, USA;**  
**John Gustafson, Intel; Mike Williams, University of Calgary, Canada**

15:00-15:30      **PM Break**

15:30-17:00      **Parallel Sessions**

### Panel 2: Evolution of Services Computing Curriculum and Services University

Moderator: Liang-Jie (LJ) Zhang, IBM, USA

Location: Regency Ballroom ABC

### Fast Abstracts I (Formal Methods, Software Tools, Robotics)

Chair: Hen-I Yang, Iowa State University, USA

Location: Laurel Room

- *The Java Data Mining Package—A Data Processing Library for Java*  
Holger Arndt
- *Toward the Design of Robotic Software with Verifiable Safety*  
Chih-Hong Cheng, Markus Rickert, Christian Buckl, Edward A. Lee, Alois Knoll
- *A Systematic Robot Fault-tolerance Approach*  
Bingu Shim, Beomho Baek, Sooyong Park
- *Generation of Pairwise Test Sets using a Genetic Algorithm*  
James D. McCaffrey
- *An Ontology-based Approach for GUI Testing*  
Han Li, Feng Chen, Hongji Yang, He Guo, William Cheng-Chung Chu
- *A Fine-Grained Privacy Structure for Service-Oriented Architecture*  
David Allison, Hany El Yamany, Miriam Capretz

### Software Architecture I (Software Architecture Development And Scheduling)

Chair: Hongji Yang, DeMontfort University, UK

Location: Regency Ballroom FG

- *Towards a Well Structured and Dynamic Application Server*  
Chao You, Minghui Zhou, Zan Xiao, Hong Mei

- *ProtoTalk: A Generative Framework for Prototyping Protocols in Smalltalk*  
Ali Razavi, Kostas Kontogiannis
- *Usage History-based Architectural Scheduling*  
Dongsun Kim, Seokhwan Kim, Sooyong Park

#### Testing IV (Testing Theory, Methodology and Application)

**Chair: Joao Cangussu, University of Texas at Dallas, USA**

**Location: Juniper Room**

- *A Study of Applying Extended PIE Technique to Software Testability Analysis*  
Tsung-Han Tsai, Chin-Yu Huang, Jun-Ru Chang
- *Asynchronous Input-Output Conformance Testing*  
Martin Weiglhofer, Franz Wotawa
- *Towards a Theory for Testing Non-terminating Programs*  
Arnaud Gotlieb, Matthieu Petit
- *Test Case Generation for Collaborative Real-time Editing Tools*  
Lian Yu, Wei Zhao, Xiaofeng Di, Changzhu Kong, Wenbo Zhao, Qianxiang Wang, Jun Zhu

#### Requirements Engineering II (Process Analysis and Service Management)

**Chair: Colette Rolland, University of PARIS-1 Pantheon Sorbonne, France**

**Location: Larch Room**

- *Towards a Design Method Supporting the Alignment Between Business and Software Services*  
Sophie Ramel, Eric Grandry, Eric Dubois
- *A Framework for Cost Sensitive Assessment of Intrusion Response Selection*  
Chris Strasburg, Natalia Stakhanova, Samik Basu, Johnny Wong
- *Applying PageRank Algorithm in Requirement Concern Impact Analysis*  
Ying Jin, Jing Zhang, Penfei Ma, Weiping Hao, Shutong Luo, Zepeng Li
- *Distributed Collaborative Modeling Support System Associating UML Diagrams with Chat Messages*  
Dongmei Xu, Jun Kurogi, Yoshihide Ohgame, Atsuo Hazeyama

18:30-22:00 **COMPSAC Banquet: Argosy Cruise through the U.S. Navy Locks; Shuttle leaves from Hyatt Cedar Bellevue at 5:30pm. Return time: 10pm**

### Thursday, July 23, 2009

8:30-10:00 **Keynote: Towards Fine Grained Secure Communications**  
**Tatsuaki Okamoto, NTT, Japan**  
**Location: Regency Ballroom**  
**Chair: Haruo Takemura, SAINT 2009 GC**

10:00-10:30 **AM Break**

10:30-12:00 **Parallel Sessions**

#### Panel 3: New Paradigms in Software Testing: Towards Solutions

**Moderator: Rajesh Subramanyan, Siemens Corporate Research, USA**

**Panelists: Ron Kenett, KPA, Israel; Hamid Salemezadeh, Siemens, USA; T.H. Tse, The University of Hong Kong; Jeffrey M. Voas, SAIC, USA**

**Location: Regency Ballroom ABC**

#### Software Architecture II (Software Architecture Specification and Analysis)

**Chair: Kostas Kontogiannis, National Technical University of Athens, Greece**

**Room: Larch Room**

- *Software Methodologies for the Engineering of Service-Oriented Industrial Automation: The Continuum Project*  
J. Marco Mendes, Axel Bepplerling, João Pinto, Paulo Leitão, Francisco Restivo, Armando W. Colombo
- *A Next-Generation Matrix Library for Java*  
Holger Arndt, Markus Bundschus, Andreas Naegele
- *Towards Dynamic Component Updating: A Flexible and Lightweight Approach*  
Zan Xiao, Donggang Cao, Chao You, Haiyan Zhao, Hong Mei

#### Mobile and Pervasive Computing I (RFID, Wireless Network and Services)

**Chair: Sheikh Iqbal Ahamed, Marquette University, USA**

**Location: Laurel Room**

- *Towards Passive RFID Event*  
Wei Ye, Wen Zhao, Yu Huang, Wenhui Hu, Shikun Zhang, Lifu Wang
- *Estimating Rate of Queue Usage to Differentiate Cause of Packet Loss in Multi-hop Wireless Networks*  
Mi-Young Park, Sang-Hwa Chung, Prasanthi Sreekumari
- *Deployment of Services Applications in Services Execution Environments*  
Antonin Chazalet, Philippe Lalanda

#### Formal Methods (Formal Specification and Model Checking)

**Chair: Cristina Seceleanu, Mälardalen University, Sweden**

**Location: Juniper Room**

- *A Formal Description Language and an Automated Detection Method for Complex Events in RFID*  
Jiaqi Zhu, Yu Huang, Hanpin Wang



- *Translation-based Model Checking for PLC Programs*  
Min Zhou, Fei He, Ming Gu, Xiaoyu Song
- *Modular Certification of Low-level Intermediate Representation Programs*  
Yuan Dong, Shengyuan Wang, Liwei Zhang, Ping Yang

12:00-13:30           **Lunch**  
13:30-15:00           **Parallel Sessions**

### **Software Architecture III (Analysis of Software Updates)**

**Chair: Qianxiang Wang, Peking University, China**

**Location: Larch Room**

- *Design of Service Component Layer in SOA Reference Architecture*  
Liangjie Zhang, Jia Zhang
- *The Design and Implementation of a Bare PC Email Server*  
George Ford, Ramesh Karne, Alexander Wijesinha, Patrick Appiah-Kubi
- *Service Identification via Ontology Mapping*  
Feng Chen, Zhuopeng Zhang, Jianzhi Li, Jian Kang, Hongji Yang

### **Mobile and Pervasive Computing II (Software Testing and Re-engineering)**

**Chair: Bruce McMillin, Missouri University of Science and Technology, USA**

**Location: Laurel Room**

- *An Overlay-based Resource Monitoring Scheme for Social Applications in MANET*  
Kyungman Kwak, Gonzalo Huerta-Canepa, Yangwoo Ko, Dongman Lee, Soon J. Hyun
- *More Tales of Clouds: Software Engineering Research Issues from the Cloud Application Perspective*  
Lijun Mei, Zhenyu Zhang, W.K. Chan
- *Shift Hashing for Memory-Constrained Applications*  
Sushamna Deodhar, Alan Tharp
- *Transaction Level Control for Application Execution on the SegBus Platform*  
Tiberiu Seceleanu, Ivica Crnkovici, Cristina Seceleanu

### **Best Practice**

**Chair: Liang-Jie (LJ) Zhang, IBM, USA**

**Location: Regency Ballroom ABC**

- *Integrating System Modeling with Project Management – a Case Study*  
Jonas Helming, Jörn David, Maximilian Kögel, Helmut Naughton
- *Efficient Temporal Blocking for Stencil Computations by Multicore-aware Wavefront Parallelization*  
Gerhard Wellein, Georg Hager, Markus Wittmann, Thomas Zeiser, Holger Fehske
- *Extensions for Integrated Queries on Heterogeneous Semantic Web Resources*  
Cheng-Zen Yang, Ing-Xiang Chen, Jia-Da Ye
- *Swarm Intelligence in the fine-tuning of Software Development Cost Estimation Models*  
Tad Gonsalves, Kei Yamagishi, Kiyoshi Itoh

### **Fast Abstracts II (Software Engineering, MDA)**

**Chair: Katsunori Oyama, Iowa State University**

**Location: Juniper Room**

- *A Multi-Model Process Improvement Methodology Driven by Capability Profiles*  
Clenio Salviano
- *On Model Transformation Reuse*  
Xiao He, Zhiyi Ma, Yan Zhang, Weizhong Shao
- *Requirement Risk Assessment Focused-on Stakeholder Risk Analysis*  
Li Xiaohong, Liu Qiang
- *Industrial Opinion on the Effectiveness of Risk Management Methods*  
Mira Kajko-Mattsson, Jan Lundholm, Jonas Norrby
- *A Study of the Impact on Students Understanding Cross Cultural Differences in Software Engineering Work*  
Nancy R. Mead, Antonio Drommi, Dan Shoemaker, Jeff Ingalsbe
- *Industrial Report: Data Reengineering of COBOL Sequential Legacy Systems*  
Richard Millham, Hongji Yang

15:00-15:30           **PM Break**

15:30-17:00           **Parallel Sessions**

### **Joint Panel: Emerging Pervasive Systems—Research Challenges and Proposed Solutions**

**Moderator: Sahra Sedigh, Missouri University of Science and Technology**

**Panelists: Paolo Bellavista, Università di Bologna, Italy; Yuuichi Teranishi, Osaka University/NICT, Japan; Ankur Teredesai, University of Washington, USA;**

**Johnny Wong, Iowa State University, USA;**

**Location: Regency Ballroom ABC**

## Education and Learning (Domain Specific Software Architecture Design)

Chair: Antonio Drommi, University of Detroit Mercy, USA

Location: Laurel Room

- *Temporally Robust Software Features for Authorship Attribution*  
Steven Burrows, Alexandra L. Uitdenbogerd, Andrew Turpin
- *An Augmented Social Interactive Learning Approach through Web2.0*  
Li Jin, Zhigang Wen
- *RHE: A Lightweight JVM Instructional Tool*  
Shaoshan Liu, Chengrui Deng, Xiao-Feng Li, Jean-Luc Gaudiot

## Security II (Intelligent Applications)

Chair: Xia Wang, Google, USA

Location: Juniper Room

- *Exploring Security in PROFINET IO*  
Johan Akerberg, Mats Bjorkman
- *A Static Java Birthmark Based on Control Flow Edges*  
Hyun-il Lim, Heewan Park, Seokwoo Choi, Taisook Han
- *A Secure and Flexible Electronic-ticket System*  
Fahim Khan, Yashiro Takeshi, Ito So, Masahiro Bessho, Ken Sakamura
- *PAIDS: A Proximity-Assisted Intrusion Detection System for Unidentified Worms*  
Zhenyun Zhuang, Ying Li, Zesheng Chen

## Friday, July 24, 2009

8:30-10:00

**Concluding Plenary Panel: Security and Privacy in Community-based Internet Applications**

**Location: Regency Ballroom**

**Moderator: Stephen S. Yau, Arizona State University, USA**

**Panelists: Balachander Krishnamurthy, AT&T Bell Labs, USA; Shiro Uesugi, University of Matsuyama, Japan; Jeffrey Voas, Science Applications International Corp., USA; Yi-Min Wang, Microsoft Research, USA**

10:00-10:30

**AM Break**

## 2nd IEEE International Workshop on Barriers towards Internet-Driven Information Services (BINDIS 2009)

Location: Regency Ballroom A

Organizing Chair: Yang Li, BT Innovate, British Telecom plc, UK

10:30-12:00

**Session I: Service Creation and Management**

**Chair: Yang Li, BT Innovate, British Telecom plc, UK**

- *A Cooperative Framework of Service Chain for Digital Library*  
Huang Meng-xing, Xing Chun-xiao, Yang Ji-jiang
- *A Specialized Meta-scheduler for Business and Applications Constraints Management*  
J r mie Chevalier, St phane Mouton
- *Towards Industry-Strength SLA Optimization Capabilities for Service Chains*  
Yang Li

13:30-15:00

**Session II: Service Marketing and Inoperability**

**Chair: Jijiang Yang, Tsinghua University, China**

- *Matchmaking Using Natural Language Description*  
Joe Geldart, William Song, Yang Li
- *An Investigation of the Role of Service Level Agreements in Classified Advertisement Websites*  
Aijaz Soomro, William Song, Yang Li

## 1st IEEE International Workshop on Computer Forensics in Software Engineering (CFSE 2009)

Location: Regency Ballroom E

Organizing Chairs: Jigang Liu, Kyoto University, Japan; Doris Carver, Louisiana State University, USA

10:30-12:00

**Session I: Software System Forensics**

**Chair: Jigang Liu, Kyoto University, Japan**

- *Analysis of Redundant Traces for Consistency*  
Fred Cohen
- *A Method for Historical Ext3 Inode to Filename Translation on Honeypots*  
Kevin D. Fairbanks, Ying H. Xia, Henry L. Owen III
- *Log Data as Digital Evidence: What Secure Logging Protocols Have to Offer?*  
Rafael Accorsi

13:30-15:00

**Session II: Protection Testing and Computer Forensics**

**Chair: Jigang Liu, Kyoto University, Japan**

- *Penetration Testing for Spam Filters*  
Yugesh Madhavan, Joao W. Cangussu, Ram Dantu
- *Acer Aspire One Netbooks: A Forensic Challenge*  
Amrit Pal Singh, Michael Lavine, Benjamin Turnbull, Trupti Shiralkar

## 1st IEEE International Workshop on Security Aspects of Process and Services Engineering (SAPSE 2009)

Location: Larch Room

Organizing Chair: Stelvio Cimato, University of Milan, Italy

10:30-12:00      **Session I: Service Collaboration and Access Control**  
**Chair: Stelvio Cimato, University of Milan, Italy**

- *Policy Composition based on Petri Nets*  
Hejiao Huang, Helene Kirchner
- *Verification of Access Control Policies for REA Business Processes*  
Vahid R. Karimi, Donald D. Cowan
- *Towards the Verification of Services Collaboration*  
Yue Xie, Dehui Du, Jing Liu, Zuohua Ding

13:30-15:00      **Session II: Service Security and Protection**  
**Chair: Stelvio Cimato, University of Milan, Italy**

- *Towards Validating Security Protocol Deployment in the Wild*  
Luca Compagna, Ulrich Flegel, Volkmar Lotz
- *On a Classification Approach for SOA Vulnerabilities*  
Lutz Lewis, Rafael Accorsi
- *SN2K Attacks and Honest Services*  
Ashish Kundu
- *PhishCatch – A Phishing Detection Tool*  
Weider Yu, Shruti Nargundkar, Nagapriya Tiruthani

## 2nd IEEE International Workshop on Component-Based Design of Resource-Constrained Systems (CORCS 2009)

Location: Juniper Room

Organizing Chairs: Cristina Secelanu, Mälardalen Real-Time Research Centre (MRTC), Sweden;  
Paul Pettersson, Mälardalen Real-Time Research Centre (MRTC), Sweden

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10:30-12:00      **Session I: Modeling and Optimization of Component-based Systems**  
**Chair: Paul Pettersson, Mälardalen University, Sweden**

- *Optimizing Component-Based Embedded Software*  
Olivier Lobry, Juan Navas, Jean-Philippe Babau
- *Towards a Unified Behavioral Model for Component-Based and Service-Oriented Systems*  
Aida Čaušević, Aneta Vulgarakis

13:30-15:00      **Session II: Analyzing Complex Real-Time and Embedded Systems**  
**Chair: Cristina Seceleanu, Mälardalen University, Sweden**

- *Testing with Large Parameter Sets for the Development of Embedded Systems in the Automation Domain*  
Florian Kantz, Thomas Ruschival, Philipp Nenninger, Detlef Streitferdt
- *Transformational Specification of Complex Legacy Real-Time Systems via Semantic Anchoring*  
Yue Lu, Antonio Cicchetti, Stefan Bygde, Johan Kraft, Thomas Nolte, Christer Norström

## 2nd IEEE International Workshop on Industrial Experience in Embedded Systems Design (IEESD 2009)

Location: Cottonwood Room

Organizing Chairs: Tiberiu Seceleanu, ABB Corporate Research, Sweden; Detlef Streitferdt, ABB Corporate Research, Sweden

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10:30-12:00      **Session I**

- *An Integrative Approach for Embedded Software Design with UML and Simulink*  
Tibor Farkas, Carsten Neumann, Andreas Hinnerichs
- *State of the Art in Using Agile Methods for Embedded Systems Development*  
Radu Dobrin, Kristina Lundqvist
- *Test Case Mutation in Hybrid State Space for Reduction of No-Fault-Found Test Results in the Industrial Automation Domain*  
Philipp Nenninger, Florian Kantz, Detlef Streitferdt

## 1st IEEE International Workshop on Software Test Automation (STA 2009)

Location: Laurel Room

Organizing Chairs: Rajesh Subramanyan, Siemens Corporate Research, USA; Fevzi Belli, University of Paderborn, Germany

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10:30-12:00      **Session I: Test Automation I**  
**Chair: Rajesh Subramanyan, Siemens Corporate Research, USA**  
**Keynote speaker: Hamid Salemizadeh, Siemens, USA**

- *Implementing an Effective Test Automation Framework*  
Eun Ha Kim, Jong Chae Na., Seok Moon Ryoo
- *GUI-Based Testing of Boundary Overflow Vulnerability*  
Tugkan Tuglular, Can A. Muftuoglu, Ozgur Kaya, Fevzi Belli, Michael Linschulte

13:30-15:00      **Session II: Test Automation II**  
**Chair: Tugkan Tuglular, Izmir Institute of Technology, Turkey**

- *Test Selection Prioritization Strategy*  
Rajesh Subramanyan, Christof Budnik
- *Automatic Testing of Program Security Vulnerabilities*  
Hossain Shahriar, Mohammad Zulkernine
- *A New Mutation Analysis Method for Testing Java Exception Handling*  
Changbing Ji, Zhenyu Chen, Baowen Xu, Ziyuan Wang

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Jan Camenisch, IBM Research, Switzerland

### Social and Collaborative Networks Track Co-chairs

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Hongji Yang, Demontfort University, UK

### Testing Track Co-chairs

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# COMPSAC 2010

34th Annual IEEE Computer Software and Applications Conference



## CALL FOR CONTRIBUTIONS

19-23 JULY 2010

COMPSAC, the *IEEE Signature Conference on Computers, Software & Applications*, is one of the major international forums for academia, industry, and government to discuss research results, advances and future trends in computer and software technologies and applications. The technical program includes keynote addresses, research papers, industrial case studies, panel discussions and fast abstracts. It also includes a number of workshops on emerging important topics.

The creation of trustworthy, dependable, distributed, and smart services satisfying the needs of today pervasive and ubiquitous computing environments spans all aspects of software systems engineering. COMPSAC is a unique forum bringing together these facets and their major stakeholders. It gives researchers and practitioners an opportunity to share their perspective with others interested in the various aspects of computer systems and applications.

### The technical theme for the 34<sup>th</sup> conference is *Computationally Smart Environments*.

Smart software solutions applied to diverse areas (including but not limited to Healthcare, Energy, Social, Environmental, Industrial applications etc...) can improve efficiency, reliability, quality and simultaneously reduce costs. Requirement analysis, co-analysis/co-design, modelling, development, testing, measurement, verification, validation, performance, autonomy, safety, security, and dependability constraints are a few of numerous computing disciplines that can collectively contribute to these smart solutions and are some of the topics of interest. The program of COMPSAC 2010 will continue to feature research and industrial practice papers with a wide range of topics, focusing on software and middleware development for distributed platforms, services computing, cloud computing, and mobile systems. The program is not limited to these topics. Interdisciplinary submissions are also encouraged.

To properly engineer smart solutions, the foundations, methodologies, and mechanisms that support the design, modelling, and evaluation of software systems and computer applications must come from diverse sources. Multidisciplinary work, research and development of software prototypes, industry-university collaborations, all based on new emerging and critical technologies will be of particular interest to this conference. All accepted papers will be published in the electronic proceedings by the IEEE Computer Society, indexed through INSPEC and EI Index, and automatic inclusion in the IEEE digital library.

Authors are invited to submit original, unpublished research papers as well as industrial practice papers. Simultaneous submissions to other publication venues are not permitted. Detailed instructions for electronic paper submission, panel and workshop proposals, fast abstracts, doctoral symposium and review process can be found at <http://www.compsac.org/>. The length of the camera-ready of an accepted paper will be limited to 8 (IEEE Proceedings style) pages, and printed on 10-12 point fonts. Please follow the IEEE Computer Society Press Proceedings Author Guidelines to prepare your papers. At least one author of each accepted paper (regular, short, workshop) or fast abstract is required to pay full registration fee to the conference. Each accepted paper must be presented in person by the author or one of the authors. At least one Best Paper Award and 1-3 Best Student Paper Awards will be presented by COMPSAC 2010. Arrangements are being made to publish sets of the best technical contributions to reputable journals. The first author of the best student papers must be a full-time student. Doctoral Symposium papers are encouraged with reduced student registration rate.

#### Main Conference Deadlines

January 15, 2010: Abstracts  
January 31, 2010: Full manuscripts  
March 15, 2010: Author notification  
April 30, 2010: Camera-ready papers and author registration

#### Satellite Workshops and Panels Deadlines

December 8, 2009: Workshop and panel proposals  
March 1, 2010: Workshop paper submission  
March 30, 2010: Workshop paper author notification  
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