

# APPLIED COMPUTING 2009

The 24<sup>th</sup> Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2009 ACM  
SYMPOSIUM ON APPLIED COMPUTING

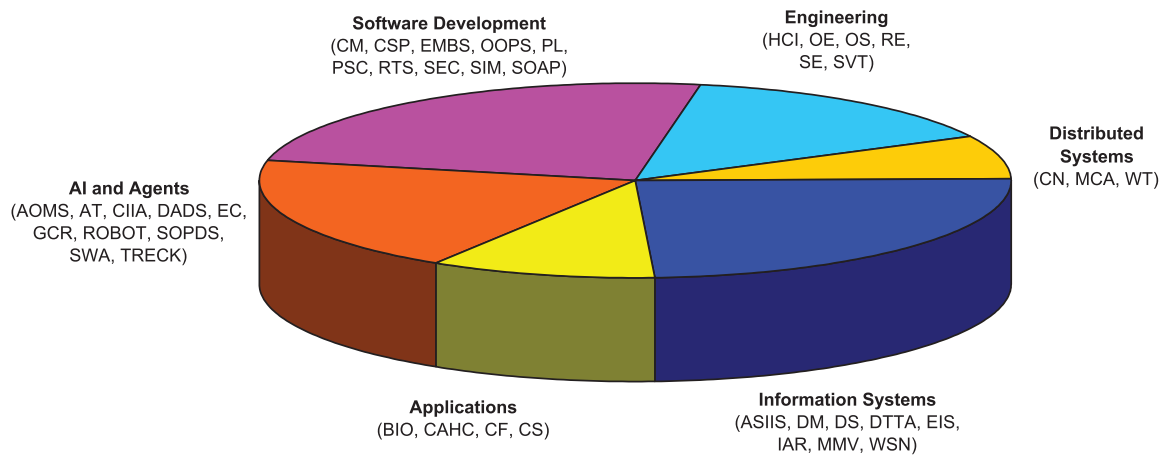
Honolulu, Hawaii, USA

March 8-12, 2009

Organizing Committee

**Sung Y. Shin**  
**Sascha Ossowski**  
**Paulo Martins**  
**Ronaldo Menezes**  
**Mirko Viroli**  
**Jiman Hong**

**Dongwan Shin**  
**Mathew J. Palakal**  
**Udo Fritzke**  
**Martha Crosby**  
**Hisham M. Haddad**



Hosted by  
University of Hawaii at Mānoa and Chaminade University of Honolulu



# SAC 2009

## Introduction

SAC 2009 is a premier international conference on applied computing and technology. Attendees have the opportunity to hear from expert practitioners and researchers about the latest trends in research and development in their fields. SAC 2009 features 2 keynote speakers on Monday and Wednesday, from 8:20 to 10:00. The symposium consists of a Technical program offering 41 tracks on a wide number of different research topics, which run from Monday March 9 through Thursday March 12, 2009. Regular sessions start at 8:20 and end at 17:20 in up to 5 parallel sessions. Moreover, two poster tracks also run on Tuesday March 10, from 9:00 to 12:00 and from 14:00 to 17:00.

## Organizing Committee

- Sascha Ossowski**, *Conference Co-Chair*  
University Rey Juan Carlos, Spain
- Sung Y. Shin**, *Conference Co-Chair*  
South Dakota State University, USA
- Paulo Martins**, *Conference Vice-Chair*  
Chaminade University, USA
- Ronaldo Menezes**, *Program Chair*  
Florida Institute of Technology, Melbourne, USA
- Mirko Viroli**, *Program Chair*  
Alma Mater Studiorum - Università di Bologna, Italy
- Dongwan Shin**, *Publication Chair*  
New Mexico Tech, USA
- Mathew J. Palakal**, *eConference Management Chair*  
Indiana University Purdue University, USA
- Jiman Hong**, *Posters Chair*  
Soongsil University, Korea
- Martha Crosby**, *Local Chair*  
University of Hawai'i at Manoa, USA
- Udo Fritzke**, *Publicity Chair*  
PUC-Minas, Brazil
- Barrett R. Bryant**, *Steering Committee Member*  
University of Alabama at Birmingham, USA
- Hisham M. Haddad**, *Steering Committee Member, Treasurer, Webmaster*  
Kennesaw State University, USA
- Roger L. Wainwright**, *Steering Committee Member*  
University of Tulsa, USA

## Track Chairs

- (AOMS) Agent-Oriented Software Engineering Methodologies and Systems**  
Massimo Cossentino, ICAr-CNR Palermo, Italy  
Ambra Molesini, Alma Mater Studiorum - Università di Bologna, Italy  
Andrea Omicini, Alma Mater Studiorum - Università di Bologna, Italy  
Valeria Seidita, Università degli Studi di Palermo, Italy

### **(ASIIS) Advances in Spatial and Image-based Information Systems**

Richard Chbeir, Bourgogne University, France  
Ki-Joune Li, Pusan National University, Korea  
Kokou Yetongnon, Bourgogne University, France

### **(AT) Agreement Technologies**

Jesús Cerquides, University of Barcelona, Spain  
Peter McBurney, University of Liverpool, United Kingdom  
Pablo Noriega, IIIA-CSIC, Spain  
Juan A. Rodríguez-Aguilar, IIIA-CSIC, Spain

### **(BIO) Bioinformatics**

Rajaraman Kanagasabai, Institute for Infocomm Research, Singapore  
Mathew J. Palakal, Indiana University Purdue University Indianapolis, United States

### **(CAHC) Computer Application in Health Care**

Rosa M. E. M. da Costa, Universidade do Estado do Rio de Janeiro, Brazil  
Fátima L. S. Nunes, Escola de Artes, Ciências e Humanidades - Universidade de São Paulo, Brazil

### **(CF) Computer Forensics**

Robert L. Hutchinson, Sandia National Laboratories, United States  
Lorie M. Liebrock, New Mexico Institute of Mining and Technology, United States  
Brajendra Panda, University of Arkansas, United States

### **(CIIA) Computational Intelligence and Image Analysis**

Chih-Cheng Hung, Southern Polytechnic State University, United States  
Agostinho Rosa, LASeeb-IST-UTL, Portugal

### **(CM) Coordination Models, Languages and Applications**

Michael Ignaz Schumacher, University of Applied Sciences Western Switzerland, Switzerland  
Alan Wood, University of York, United Kingdom

### **(CN) Computer Networks**

Mário M. Freire, University of Beira Interior, Portugal  
Edmundo Monteiro, University of Coimbra, Portugal  
Manuela Pereira, University of Beira Interior, Portugal  
Teresa Vazão, INESC ID/IST, Portugal

### **(CS) Computational Sciences**

Yang Cao, Virginia Polytechnic Institute and State University, United States  
Adrian Sandu, Virginia Polytechnic Institute and State University, United States

### **(CSP) Constraint Solving and Programming**

Stefano Bistarelli, University of Perugia, University of Chieti-Pescara and IIT-CNR, Pisa, Italy  
Eric Monfroy, Eric Monfroy, UTFSM, Valparaiso, Chile and LINA, University of Nantes, France,  
Barry O'Sullivan, University College Cork, Ireland

### **(DADS) Dependable and Adaptive Distributed Systems**

Karl M. Goeschka, Vienna University of Technology, Austria  
Svein O. Hallsteinsen, SINTEF ICT, Norway  
Rui Oliveira, Universidade do Minho, Portugal  
Alexander Romanovsky, University of Newcastle, United Kingdom

### **(DM) Data Mining**

Hasan Jamil, Wayne State University, United States  
Chandan Reddy, Wayne State University, United States  
Osmar Zaiane, University of Alberta, Canada

### **(DS) Data Streams**

Jesús Aguilar, University Pablo Olavide, Spain  
André Carvalho, University S. Paulo, Brasil  
João Gama, University of Porto, Portugal  
Pedro Pereira Rodrigues, Porto University of Porto, Portugal

### **(DTTA) Data Theory, Technology, and Applications**

Ramzi A. Haraty, Lebanese American University, Lebanon  
Apostolos N. Papadopoulos, Aristotle University, Greece  
Junping Sun, Nova Southeastern University, United States

### **(EC) Applications of Evolutionary Computation**

Bryant A. Julstrom, St. Cloud State University, United States

### **(EIS) Enterprise Information Systems**

Rogério Atem de Carvalho, CEFET Campos, Brazil  
Maria-Eugenia Iacob, University of Twente, The Netherlands  
Asterio Kiyoshi Tanaka, UniRio, Brazil

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**(EMBS) Embedded Systems**

Alessio Bechini, University of Pisa, Italy  
Prete Cosimo Antonio, University of Pisa, Italy

**(GCR) Geometric Constraints and Reasoning**

Xiao-Shan Gao, Chinese Academy of Sciences, China  
Robert Joan-Arinyo, Universitat Politècnica de Catalunya, Catalonia  
Dominique Michelucci, CNRS, France

**(HCI) Human-Computer Interaction**

Brent Auernheimer, California State University, Fresno, United States  
Shih-Hsi Liu, California State University, Fresno, United States

**(IAR) Information Access and Retrieval**

Gloria Bordogna, CNR - National Research Council, Italy  
Gabriella Pasi, University of Milano Bicocca, Italy

**(MCA) Mobile Computing and Applications**

Alvin Chan, The Hong Kong Polytechnic University, Hong Kong  
Hong Va Leong, The Hong Kong Polytechnic University, Hong Kong

**(MMV) Multimedia and Visualization**

Maria G. Pimentel, SCC/ICMC/USP, Brazil  
Ethan V. Munson, University of Wisconsin-Milwaukee, United States

**(OE) Organizational Engineering**

Artur Caetano, Technical University of Lisbon, Portugal  
José Tribolet, Technical University of Lisbon, Portugal  
Robert Winter, University of St. Gallen, Switzerland

**(OOPS) Object Oriented Programming Languages and Systems**

Davide Ancona, University of Genova, Italy  
Alex Buckley, Sun Microsystems, United States

**(OS) Operating Systems**

Jiman Hong, Soongsil University, Korea  
Tei-Wei Kuo, National Taiwan University, Taiwan

**(PL) Programming Languages**

Barrett Bryant, University of Alabama at Birmingham, United States  
Marjan Mernik, University of Maribor, Slovenia

**(PSC) Programming for Separation of Concerns**

Yvonne Coady, University of Victoria, Canada  
Corrado Santoro, Università di Catania, Italy  
Emiliano Tramontana, Università di Catania, Italy

**(RE) Requirement Engineering**

Maria Lencastre, Universidade de Pernambuco, Brazil

**(ROBOT) Intelligent Robotic Systems**

Eduardo Marques, University of Sao Paulo, Brazil  
Fernando Osorio, University of Sao Paulo, Brazil  
Denis Wolf, University of Sao Paulo, Brazil

**(RTS) Real-Time Systems**

Paulo Martins, Chaminade University, United States  
Binoy Ravindran, Virginia Tech, United States

**(SE) Software Engineering**

Sung Y. Shin, South Dakota State University, United States  
Chang Oan Sung, Indiana University Southeast, United States  
W. Eric Wong, University of Texas at Dallas, United States

**(SEC) Computer Security**

Giampaolo Bella, Università di Catania, Italy  
Luca Compagna, SAP Research, Sophia Antipolis, France

**(SIM) Advances in Computer Simulation**

Fabien Michel, Université Montpellier II, CNRS, France  
Giuseppe Vizzari, University of Milano-Bicocca, Italy

**(SOAP) Service Oriented Architectures and Programming**

Claudio Guidi, Alma Mater Studiorum – Università di Bologna, Italy  
Ivan Lanese, Alma Mater Studiorum – Università di Bologna, Italy  
Manuel Mazzara, Newcastle University, United Kingdom

**(SOPDS) Self-Organization in Pervasive Distributed Systems**

Marco Mamei, university of modena and reggio emilia, Italy  
Justin Werfel, NECSI/Harvard Med School, United States

**(SVT) Software Verification and Testing**

Tamara Rezk, INRIA, France

**(SWA) The Semantic Web and Applications**

Hyoil Han, Drexel University, United States

**(TRECK) Trust, Reputation, Evidence and other Collaboration Know-how**

Jean-Marc Seigneur, University of Geneva, Switzerland

**(WSN) Wireless Sensor Networks**

Richard Anthony, Greenwich University, United Kingdom  
Julie McCann, Imperial College London, United Kingdom

**(WT) Web Technologies**

Davide Rossi, Alma Mater Studiorum – Università di Bologna, Italy  
Fabio Vitali, Alma Mater Studiorum – Università di Bologna, Italy

## Local Support

Local support for SAC 2009 is provided by Chaminade University of Honolulu (CUH) and University of Hawaii at Manoa (UH). The SAC organizing committee acknowledges and thanks the local supporters for their generous contributions to SAC 2009. Their support has been essential to the success of the Symposium, and it is greatly appreciated.

## ACM SIGAPP

The ACM Special Interest Group on Applied Computing is ACM's primary applications-oriented SIG. Its mission is to further the interests of the computing professionals engaged in the development of new computing applications and application areas and the transfer of computing technology to new problem domains. SIGAPP offers practitioners and researchers the opportunity to share mutual interests in innovative application fields, technology transfer, experimental computing, strategic research, and the management of computing. SIGAPP also promotes widespread cooperation among business, government, and academic computing activities. Its annual Symposium on Applied Computing (SAC) provides an international forum for presentation of the results of strategic research and experimentation for this inter-disciplinary environment. SIGAPP supports the applied computing community by providing funds for students and researchers from economically developing countries to present their papers at SAC. This year we awarded \$10,000 to 14 researchers representing 5 different developing countries, and over \$30,000 to 51 students, representing 13 different countries. SIGAPP is also pleased to sponsor the opening reception for SAC 2009. SIGAPP membership fees are: \$30.00 for ACM Non-members, \$15.00 for ACM Members, and \$8.00 for Student Members. For further information contact Barrett Bryant at [bryant@cis.uab.edu](mailto:bryant@cis.uab.edu). Also, check out the SIGAPP website at <http://www.acm.org/sigapp>.

## Message from the Symposium Chairs

**Sung Y. Shin**

*South Dakota State University, USA*

**Sascha Ossowski**

*University Rey Juan Carlos, Spain*

On behalf of the Organizing Committee, we welcome you to the 24th Annual ACM Symposium on Applied Computing (SAC 2009) hosted by Chaminade University in Hawaii. This international forum has been dedicated to computer scientists, engineers and practitioners for the purpose of presenting their findings and research results in various areas of computer applications. The organizing committee is grateful for your participation in this exciting international event. We hope that this conference proves interesting and beneficial.

The Symposium is sponsored by the ACM Special Interest Group on Applied Computing (SIGAPP), whose mission is to further the interests of computing professionals engaged in the design and development of new computing applications, interdisciplinary applications areas, and applied research. This conference is dedicated to the study of applied research of real-world problems. This event provides an avenue to discuss and exchange new ideas in the wide spectrum of application areas. We all recognize the importance of keeping up with the latest developments in our current areas of expedites.

SAC 2009 offers Technical Tracks and Posters. The success of the conference can be attributed to the substantial contribution of talented Track Chairs and Co-Chairs. Each track maintains a program committee and a set of highly qualified reviewers. We wish to thank the Track Chairs, Co-Chairs, Committee Members and participating reviewers for their hard work and effort to make the SAC 2009 conference a high quality conference. We also thank our invited keynote speakers, Dr. Vahid Tarokh, Harvard University and Dr. Rolf-Peter Kudritzki, University of Hawaii's Institute for Astronomy for sharing their knowledge with SAC attendees. Most of all, special thanks to the authors and presenters for sharing their experience with the rest of us and to all attendees for joining us in Honolulu, Hawaii this year.

The local organizing committee has always been a central contributor to the success of the SAC 2009 conference. Our gratitude goes to the Conference Vice-Chair Dr. Paulo Martins of Chaminade University and Local Chair Dr. Martha Crosby of University of Hawaii at Mānoa. We also extend our thanks to the Publication Chair, Dr. Dongwan Shin, New Mexico Tech for his tremendous effort in putting together the conference proceedings, Posters Chair Dr. Jiman Hong of Soongsil University for his hard work to make a successful Poster Program, Publicity Chair, Dr. Udo Fritzsche, PUC-Minas for his hard work, and eConference Management Chair, Dr. Mathew J. Palakal of Indiana University Purdue University for successfully maintaining the eCMS system. A special thanks goes to our Program Chairs Dr. Mirko Viroli, Università di Bologna and Dr. Ronaldo Menezes, Florida Institute of Technology for coordinating and bringing together an excellent Technical Program.

Again, we welcome you to SAC 2009 and the beautiful city of Honolulu, Hawaii. We hope you enjoy the SAC 2009 conference and your stay in Hawaii. Next year, we invite you to participate in SAC 2010 to be held in Crans-Montana/Sierre, Switzerland. The conference will be hosted by the University of Applied Sciences Western Switzerland (HES-SO) Sierre, and Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland.

## Message from the Program Chairs

**Ronaldo Menezes**

*Florida Institute of Technology, USA*

**Mirko Viroli**

*Alma Mater Studiorum - Università di Bologna, Italy*

It is a pleasure to introduce the Final Program of the 24th Symposium on Applied Computing (SAC 2009). Over the past 23 years, SAC has been an international forum for researchers and practitioners to present their findings and research results in the areas of computer applications and technology. SAC 2009 consolidates this tradition, and offers a Technical Program with a wide range of tracks covering major areas of computer applications. Published papers have been reviewed by highly qualified referees with strong expertise and special interest in their respective research areas. As part of the Technical Program, this is the sixth year that SAC incorporates poster papers, carefully selected by Poster Chair Jiman Hong from Soongsil University in Korea.

SAC 2009 would not be possible without contributions from members of the scientific community. It is easy to imagine that many people have dedicated tremendous time and effort over the period of the last 12 months to bring you an excellent program. The success of SAC 2009 relies on the effort and hard work of many volunteers. On behalf of the SAC 2009 Organizing Committee, we would like to take this opportunity to thank all of those who made this year's technical program a reality, including speakers, referees, track chairs, session chairs, presenters, and attendees. We would specially like to thank the local arrangement committee lead by Paulo Pedro from the Chaminade University.

SAC's open Call for Track Proposals resulted in the submission of 60 track proposals. These proposals were carefully evaluated by the conference Program Committee, based on their scientific quality, on available data from previous editions, and on their appropriateness for SAC. In response to the call for papers produced by each track, 1084 papers were submitted from more than 58 countries, and 41 tracks have been eventually established. After a reviewing process where each paper was evaluated by a minimum of three reviewers, 315 papers were accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. This gives SAC 2009 an acceptance rate of 29.1% across all tracks. These numbers make SAC 2009 the most competitive SAC to date. Additionally, 96 posters have been selected to form the Poster Paper Program, and to appear as short papers in the proceedings. Due to the success last year, this year we maintained the idea of organizing the tracks into themes related to 6 main

areas in computer science. The themes were used in the preparation of the Proceedings and the schedule of presentations, aimed at forming streams of related track sessions, and at minimizing overlap of scope in presentations of related fields.

We hope you will enjoy the meeting and have the opportunity to exchange your ideas and make new friends. We also hope you will enjoy your stay in Hawaii and take pleasure from the many entertainments and activities that the city of Honolulu has to offer. We encourage you and your colleagues to submit your research findings to next year's technical program when the conference will be move back to Europe, more specifically to Switzerland. Thank you for being part of SAC 2009, and we hope to see you in Switzerland for SAC 2010.

## SAC 2009 Themes

This year SAC tracks are divided into 6 *themes*: each theme will be associated to one room (APP and DS stay in the same room), hence related tracks will take place sequentially in the same room, so as to promote sharing and cross-fertilization of ideas through the whole audience of a theme. Check the schedule at page 7 for details. These are the six themes of SAC 2009:

### **(ENG) Engineering**

Located in S.Pacific Ballroom #1  
Tracks: HCI, OE, OS, RE, SE, SVT

### **(IS) Information Systems**

Located in S.Pacific Ballroom #2  
Tracks: ASIIS, DM, DS, DTTA, EIS, IAR, MMV, WSN

### **(AIA) AI and Agents**

Located in S.Pacific Ballroom #3  
Tracks: AOMS, AT, CIA, DADS, EC, GCR, ROBOT, SOPDS, SWA, TRECK

### **(SWD) Software Development**

Located in S.Pacific Ballroom #4  
Tracks: CM, CSP, EMBS, OOPS, PSC, PL, RTS, SEC, SIM, SOAP

### **(DS) Distributed Systems**

Co-located in Hibiscus Suite  
Tracks: CN, MCA, WT

### **(APP) Applications**

Co-located in Hibiscus Suite  
Tracks: BIO, CAHC, CF, CS

## Other Activities

**SIGAPP Annual Business Meeting:** Monday March 9, from 18:00 to 19:00 in Coral Ballroom #1. Open to everyone.

**SAC Reception** (Hosted by SIGAPP): Monday March 9, from 19:00 to 21:00. Coral Ballroom #4. Open for all registered attendees.

**Poster Sessions:** Tuesday March 10, from 9:00 to 12:00 and from 14:00 to 17:00 in Coral Lounge. Open to everyone.

**SAC General Luncheon:** Tuesday March 10, from 12:10 to 13:30. Coral Ballroom #4. Open for all registered attendees.

**Future SAC Organization Meeting:** Tuesday March 10, from 18:00 to 19:00 in Coral Ballroom #2. Open for SAC Organizing Committee.

**Track Chairs Business Meeting:** Wednesday March 11, from 18:00 to 19:00. S.Pacific Ballroom #1. Open for SAC Organizing Committee and Track Chairs.

**SAC Banquet:** Wednesday March 11. Departure at 19:15 from Hilton Hawaiian Village Hotel towards Polynesian Cultural Center. Open for Banquet Ticket holders. See your tickets for full details.

**SAC Best Papers Award:** Wednesday March 11. Polynesian Cultural Center. During the SAC Banquet SAC Program Chairs will award one best paper for each of the six themes of this conference.

**Track-Chairs Luncheon:** Thursday March 12, from 12:10 to 13:30. Sea Pearl Suite 1-2. Open for SAC Organizing Committee and Track Chairs.

## SAC 2010

SAC 2010 will be held in Crans-Montana/Sierre, Switzerland, from March 21st to March 26th, 2010. It is hosted by the University of Applied Sciences Western Switzerland (HES-SO) Sierre, and Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland. Please check the registration desk for handouts. You can also visit the website at <http://www.acm.org/conferences/sac/sac2010/>.

## Monday Keynote Address

### Computational Aspects and Algorithms for Dynamic Spectrum Allocation

Dr. Vahid Tarokh  
Harvard University, USA

MONDAY MARCH 9, 8:20 – 10:00AM  
ROOM: CORAL BALLROOM 1-2

#### Abstract

In many emerging wireless networks (such as ad hoc networks, cognitive radios, etc.), no central frequency allocation authority is available. This makes distributed frequency allocation an important but mostly uncharted territory in wireless networking. However, it is well-known that optimal dynamic frequency assignment is a computationally hard problem.

We will first discuss emerging applications for dynamic frequency allocation and then discuss the underlying computational issues. We then discuss some of the existing proposed solutions to dynamic frequency allocation in different contexts, such as methods based on graph coloring and iterative water filling. These approaches either excessively simplify the interference models, or are not fully decentralized, or require too much information exchange between autonomous entities, or suffer from all these shortcomings. Additionally, they are all too complex to implement.

Subsequently, for a specific class of networks, we disclose a simple, fully distributed, greedy asynchronous interference avoidance algorithm (GADIA) that requires neither any information exchange between autonomous devices, nor even any knowledge of the existence of other autonomous entities. The GADIA algorithm achieves performance close to that of a centralized optimal algorithm for this class of networks, and achieves about 90% of the Shannon capacities corresponding to the optimum/near-optimum centralized frequency band assignments. Additionally, it can be used in conjunction with any realistic wireless radio channel model such as those commonly employed in wireless standards.

We prove the convergence of the GADIA algorithm to a sub-optimal solution, and develop performance bounds showing that this sub-optimal solution is near-optimal under various practical node activity models. In particular, using stochastic analysis, we introduce a framework to analyze the performance of the GADIA in the presence of time-varying activity rates of clusters. This framework opens the possibilities of both open loop and closed loop stochastic control to improve the performance of distributed frequency allocation. Extension of Gadia to more general networks and addressing the underlying computational problems remain an open problem.

This is a joint work with Behtash Babadi.

**Short Bio:** Dr. Vahid Tarokh worked at AT&T Labs-Research and AT&T wireless services until August 2000, where he was the head of the Department of Wireless Communications and Signal Processing. In September 2000, he joined Department of Electrical Engineering and Computer Sciences (EECS) at MIT as an associate professor. In June

2002, he joined Harvard University as a Gordon McKay Professor of Electrical Engineering. Since July 2005, he is a Hammond Vinton Hayes Senior Fellow of Electrical Engineering at Harvard University, and a Perkins professor. His research is mainly focused in the areas of Signal processing, Communications (wireline and wireless) and Networking. He has received a number of awards and holds 2 honorary degrees.

## Wednesday Keynote Address

### Astronomy in Hawaii: Exploring Our Universe with the Largest Telescopes in the World

Dr. Rolf-Peter Kudritzki  
Director of the University of Hawaii's Institute for  
Astronomy, USA

WEDNESDAY MARCH 11, 8:20 – 10:00AM  
ROOM: CORAL BALLROOM 1-2

#### Abstract

Astronomy, like no other science, has revolutionized our thinking about the world and our human existence. With every new generation of technology, more and more powerful telescopes have contributed to extending our knowledge of the universe. Today, the largest and most powerful telescopes in the world are located in Hawaii on the summit of Mauna Kea (14,000 feet). The many spectacular and fundamental discoveries made with these new facilities are the subject of this presentation. We will discuss the detection of new worlds such as planets orbiting around other stars, proto-planetary disks forming new planetary systems, the black hole in the center of our galaxy, dark matter and dark energy and the accelerated expansion of the universe, and the detection of galaxies 13 billion light years away from us. We will also discuss the scientific potential and scope of the coming next generation telescopes, which will take us even further in this breathtaking endeavor to understand the cosmos we live in.

**Short Bio:** Dr. Rolf-Peter Kudritzki has been the Director of the University of Hawaii's Institute for Astronomy since October of 2000. Dr. Kudritzki was formerly a Professor of Astronomy and Director of the Institut für Astronomie und Astrophysik at the University of Munich. Since the summer of 1999, he has been Dean of the Faculty of Physics at the University of Munich. He has also been a director of the Max-Planck-Institut für Astrophysik. Dr. Kudritzki's research activities and international collaborations have led to his participation and membership in a wide range of international committees. For many years he has been a member and chair of the advisory Visiting Committee for the Hubble Space Telescope Science Institute, located at the Johns Hopkins University. In addition, he was chair of the European Southern Observatory Advisory Committee, and is a member of the Board of Directors of the Association of Universities for Research and Astronomy (AURA). AURA manages U.S. national observatories located in Arizona, New Mexico and Chile; the two international Gemini observatories,

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which are located in Chile and Hawaii; and the Hubble Space Telescope Science Institute. He is also the chair of the National Science Working group for the Next Generation Giant Segmented Mirror Telescope. In addition to his administrative responsibilities, Dr. Kudritzki has continued to pursue a career as an active researcher. His recent research has been in the area of the investigation of the physics of stars and galaxies, and in particular their evolution. For the past ten years, he has been involved in the development of new telescopes and telescope instrumentation. He has published more than 200 publications in refereed journals and has been invited frequently to give presentations at international science conferences. He has supervised more than 30 Ph.D. students, many of whom now are professors themselves. From January 2003 to December 2004, Dr. Kudritzki has held the title of Interim Vice Chancellor for Research and Graduate Education at the University of Hawaii. Dr. Kudritzki holds a diploma in Physics and a Ph.D. in Astronomy from the Technische Universität, Berlin.

# Tracks Schedule

Monday March 9, 2009

MON. 8:20 - 10:00 CORAL BALLROOM 1-2  
Keynote Address

## Computational Aspects and Algorithms for Dynamic Spectrum Allocation

Dr. Vahid Tarokh  
Harvard University, USA

See details at page 5

10:00 - 10:30 CORAL LOUNGE  
Coffee Break

MON. 10:30 - 12:10 ENG: S.PACIFIC BALLROOM #1

### (SVT-1) Software Verification and Testing

Session chair: Tamara Rezk, INRIA, France

#### An Optimized Change-Driven Regression Testing Selection Strategy for Binary JAVA Applications

Sheng Huang, IBM China Research Lab, China  
Yang Chen, Tsinghua University, China  
Jun Zhu, IBM China Research Lab, China  
Zhong Jie Li, IBM China Research Lab, China  
Hua Fang Tan, IBM China Research Lab, China

#### An Approach for Component Testing and Its Empirical Validation

Fernando R.C. Silva, Federal University of Pernambuco, Brazil  
Eduardo S. Almeida, Recife Center for Advanced Studies & Systems, Brazil  
Silvio R.L. Meira, Federal University of Pernambuco, Brazil

#### The Synergy of Precise and Fast Abstractions for Program Verification

Natasha Sharygina, University of Lugano, Switzerland  
Stefano Tonetta, Fondazione Bruno Kessler, Italy  
Aliaksei Tsitovich, University of Lugano, Switzerland

#### Enforcement Monitoring wrt. the Safety-Progress Classification of Properties

Yliès Falcone, VERIMAG - University of Grenoble, France  
Jean-Claude Fernandez, VERIMAG - University of Grenoble, France  
Laurent Mounier, VERIMAG - University of Grenoble, France

#### On the Verification of Probabilistic I/O Automata with Unspecified Rates

Sergio Giro, FaMAF, Universidad Nacional de Córdoba, Argentina  
Pedro R. D'Argenio, FaMAF, Universidad Nacional de Córdoba, Argentina

MON. 10:30 - 12:10 IS: S.PACIFIC BALLROOM #2

### (MMV-1) Multimedia and Visualization

Session chair: Simone Diniz Junqueira Barbosa, PUC-Rio, Brazil

#### Incremental Board: A Grid-Based Space for Visualizing Dynamic Data Sets

Roberto Pinho, Universidade de São Paulo, Brazil  
Maria Cristina F. Oliveira, Universidade de São Paulo, Brazil  
Alneu de A. Lopes, Universidade de São Paulo, Brazil

#### Visualization of Clustered Directed Acyclic Graphs with Node Interleaving

Pushpa Kumar, University of Texas at Dallas, United States  
Kang Zhang, University of Texas at Dallas, United States

#### Term Distribution Visualizations with Focus+Context

Moses Schwartz, New Mexico Institute of Mining & Technology, United States  
Curtis Hash, New Mexico Institute of Mining & Technology, United States  
L.M. Liebrock, New Mexico Institute of Mining & Technology, United States

#### A Recommendation System for Browsing Digital Libraries

Antonio d'Acierno, ISA-CNR, Italy  
Vincenzo Moscato, University of Naples, Italy  
Antonio Picariello, University of Naples, Italy  
Massimiliano Albanese, University of Maryland, United States  
Angelo Chianese, University of Naples, Italy

#### Information-Theoretic Identification of Content Pages for Analyzing User Information Needs and Actions on the Multimedia Web

Rahul Singh, San Francisco State University, United States  
Bibek D. Bhattacharai, San Francisco State University, United States

MON. 10:30 - 12:10 SWD: S.PACIFIC BALLROOM #3

### (RTS) Real-Time Systems

Session chair: Paulo Martins, Chaminade University, USA

#### Resource Sharing in Behavioral based Scheduling

Leo Ordinez, Universidad Nacional del Sur, Argentina  
David Donari, Universidad Nacional del Sur, Argentina  
Rodrigo Santos, Universidad Nacional del Sur, Argentina  
Javier Orozco, Universidad Nacional del Sur, Argentina

#### Exploiting Stack Distance to Estimate Worst-Case Data Cache Performance

Yu Liu, Southern Illinois University Carbondale, United States  
Wei Zhang, Southern Illinois University Carbondale, United States

#### An Implementation of the Earliest Deadline First Algorithm in Linux

Dario Faggioli, Scuola Superiore Sant'Anna, Italy  
Michael Trimarchi, Scuola Superiore Sant'Anna, Italy  
Fabio Checconi, Scuola Superiore Sant'Anna, Italy  
Marko Bertogna, Scuola Superiore Sant'Anna, Italy  
Antonio Mancina, Scuola Superiore Sant'Anna, Italy

#### An Orthogonal Real-Time Scheduling Architecture for Responsiveness QoS Requirements in SOA Environments

F.J. Monaco, University of São Paulo, Brazil  
M. Nery, University of São Paulo, Brazil  
M.M.L. Peixoto, University of São Paulo, Brazil

MON. 10:30 - 12:10 AIA: S.PACIFIC BALLROOM #4

**(AT) Agreement Technologies**

Session chair: Jesus Cerquides, University of Barcelona, Spain

**Market-Based Coordination for Intersection Control**

Matteo Vasirani, University Rey Juan Carlos, Spain  
Sascha Ossowski, University Rey Juan Carlos, Spain

**MultiAgent System Adaptation in a Peer-to-Peer Scenario**

Jordi Campos Miralles, Universitat de Barcelona, Spain  
Maite López-Sánchez, Universitat de Barcelona, Spain  
Marc Esteva, Artificial Intelligence Research Institute (IIIA, CSIC), Spain

**Organising MAS: A Formal Model based on Organisational Mechanisms**

Roberto Centeno, University Rey Juan Carlos, Spain  
Holger Billhardt, University Rey Juan Carlos, Spain  
Ramón Hermoso, University Rey Juan Carlos, Spain  
Sascha Ossowski, University Rey Juan Carlos, Spain

**Towards Organizational Agent-Oriented Operating Systems**

Javier Palanca, Universidad Politécnica de Valencia, Spain  
Vicent Botti, Universidad Politécnica de Valencia, Spain  
Ana García-Fornes, Universidad Politécnica de Valencia, Spain

MON. 10:30 - 12:10 DS: HIBISCUS SUITE

**(CN-1) Computer Networks**

Session chair: Edoardo Biagioni, University of Hawaii, USA

**Using Geo-Spatial Session Tagging for Smart Multicast Session Discovery**

Piyush Harsh, University of Florida, United States  
Richard Newman, University of Florida, United States

**Robust Scheduler for Grid Networks**

Daniel M. Batista, Institute of Computing, State University of Campinas, Brazil  
André C. Drummond, Institute of Computing, State University of Campinas, Brazil  
Nelson L.S. da Fonseca, Institute of Computing, State University of Campinas, Brazil

**Quality of Service Management in GMPLS-Based Grid OBS Networks**

Rafael Esteves, Universidade Federal do Pará, Brazil  
Antonio Abelém, Universidade Federal do Pará, Brazil  
Michael Stanton, Universidade Federal Fluminense, Brazil

**New Content-Aware Request Distribution Policies in Web Clusters Providing Multiple Services**

Mei-Ling Chiang, National Chi-Nan University, Taiwan  
Chun-Hung Wu, National Chi-Nan University, Taiwan  
Yi-Jiun Liao, National Chi-Nan University, Taiwan  
Yu-Fen Chen, National Chi-Nan University, Taiwan

12:10 - 13:30

**Lunch Break**

MON. 13:30 - 15:10 ENG: S.PACIFIC BALLROOM #1

**(SVT-2) Software Verification and Testing**

Session chair: Tamara Rezk, INRIA, France

**Local Reasoning for Abstraction and Sharing**

Renato Cherini, FaMAF, Universidad Nacional de Córdoba, Argentina  
Javier O. Blanco, FaMAF, Universidad Nacional de Córdoba, Argentina

**Reasoning about Comprehensions with First-Order SMT Solvers**

K. Rustan M. Leino, Microsoft Research, United States  
Rosemary Monahan, National University of Ireland, Ireland

**Specifying and Checking Protocols of Multithreaded Classes**

Clément Hurlin, INRIA Sophia Antipolis, France

**Extended Static Checking in JML4: Benefits of Multiple-Prover Support**

Perry R. James, Concordia University, Canada  
Patrice Chalin, Concordia University, Canada

**Certification of Smart-Card Applications in Common Criteria**

Iman Narasamdy, VERIMAG - Université de Grenoble, France  
Michaël Périn, VERIMAG - Université de Grenoble, France

MON. 13:30 - 15:10 IS: S.PACIFIC BALLROOM #2

**(MMV-2) Multimedia and Visualization**

Session chair: Rahul Singh, San Francisco State University, USA

**A New Inter-Layer Prediction Scheme for Spatial Scalability with Different Frame Rates**

Jinmi Kang, Pusan National University, Korea  
Gyeongun Goh, Pusan National University, Korea  
Kidong Chung, Pusan National University, Korea

**A Smart Clustering Algorithm for Photo Set Obtained from Multiple Digital Cameras**

Chuljin Jang, Pusan National University, Korea  
Taijin Yoon, Pusan National University, Korea  
Hwan-Gue Cho, Pusan National University, Korea

**An Enhanced Multi-View Video Compression Using the Constrained Inter-View Prediction**

Sunghwan Chun, Pusan National University, Korea  
Seoyoung Lee, Pusan National University, Korea  
Kwangmu Shin, Pusan National University, Korea  
Kidong Chung, Pusan National University, Korea

**Discovery of Time Series in Video Data through Distribution of Spatiotemporal Gradients**

Omar U. Florez, Utah State University, United States  
SeungJin Lim, Utah State University, United States

MON. 13:30 - 15:10 SWD: S.PACIFIC BALLROOM #3

**(SEC-1) Computer Security**

Session chair: Jaideep Vaidya, Rutgers, The State University of New Jersey, USA

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**On the Practical Importance of Communication Complexity for Secure Multi-Party Computation Protocols**

Florian Kerschbaum, SAP Research, Germany  
Daniel Dahlmeier, SAP Research, Germany  
Axel Schröpfer, SAP Research, Germany  
Debmalya Biswas, IRISA/INRIA, France

**Open Source vs. Closed Source Software: Towards Measuring Security**

Guido Schryen, International Computer Science Institute, United States  
Rouven Kadura, RWTH Aachen University, Germany

**Improving Stream Correlation Attacks on Anonymous Networks**

Gavin O’Gorman, Dublin City University, Ireland  
Stephen Blott, Dublin City University, Ireland

**KvmSec: A Security Extension for Linux Kernel Virtual Machines**

Flavio Lombardi, Consiglio Nazionale delle Ricerche, Ufficio Sistemi Informativi, Italy  
Roberto Di Pietro, Universitat Rovira i Virgili, Spain

**Bayesian Bot Detection based on DNS Traffic Similarity**

Ricardo Villamarín-Salomón, University of Pittsburgh, United States  
José Carlos Brustoloni, University of Pittsburgh, United States

MON. 13:30 - 15:10 AIA: S.PACIFIC BALLROOM #4

**(AOMS) Agent-Oriented Software Engineering Methodologies and Systems**

Session chair: Matteo Casadei, Alma Mater Studiorum - Università di Bologna, Italy

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**SoSAA: A Framework for Integrating Components and Agents**

Mauro Dragone, University College Dublin, Ireland  
David Lillis, University College Dublin, Ireland  
Rem Collier, University College Dublin, Ireland  
G.M.P. O’Hare, University College Dublin, Ireland

**Situated Process Engineering for Integrating Processes from Methodologies to Infrastructures**

Ambra Molesini, Università di Bologna, Italy  
Elena Nardini, Università di Bologna, Italy  
Enrico Denti, Università di Bologna, Italy  
Andrea Omicini, Università di Bologna, Italy

**agentTool Process Editor: Supporting the Design of Tailored Agent-Based Processes**

Juan C. Garcia-Ojeda, Kansas State University, United States  
Scott A. DeLoach, Kansas State University, United States  
Robby , Kansas State University, United States

**A Collaborative Tool for Designing and Enacting Design Processes**

M. Cossentino, ICAR-CNR Consiglio Nazionale delle Ricerche, Italy  
L. Sabatucci, Università degli Studi di Palermo, Italy  
V. Seidita, Università degli Studi di Palermo, Italy  
S. Gaglio, Università degli Studi di Palermo, Italy

MON. 13:30 - 15:10 DS: HIBISCUS SUITE

**(CN-2) Computer Networks**

Session chair: Daniel Macêdo Batista, State University of Campinas, Brazil

**Network Protocol Interoperability Testing based on Contextual Signatures and Passive Testing**

Fatiha Zaidi, University Paris-Sud, France  
Emmanuel Bayse, Stéria Télécom, France  
Ana Cavalli, Telecom Sud-Paris, France

**Cross-Layer Cooperation between Membership Estimation and Routing**

Juan Carlos García, Instituto Tecnológico de Informática, Spain  
Stefan Beyer, Instituto Tecnológico de Informática, Spain  
Pablo Galdámez, Instituto Tecnológico de Informática, Spain

**NECTAR: A DTN Routing Protocol based on Neighborhood Contact History**

Etienne C.R. de Oliveira, Instituto de Computação - Universidade Federal Fluminense, Brazil  
Célio V.N. de Albuquerque, Instituto de Computação - Universidade Federal Fluminense, Brazil

**BPR: A Bit-Level Packet Recovery in Wireless Sensor Networks**

Jianping He, Tsinghua University, China  
Jiahai Yang, Tsinghua University, China  
Changqing An, Tsinghua University, China  
Xuenong Li, Tsinghua University, China

15:10 - 15:40

CORAL LOUNGE

Coffee Break

MON. 15:40 - 17:20 ENG: S.PACIFIC BALLROOM #1

**(OS-1) Operating Systems**

Session chair: Jian-Jia Chen, ETH Zurich

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**Impact of Function Inlining on Resource-Constrained Embedded Systems**

Bongjae Kim, Seoul National University, Korea  
Sangho Yi, Seoul National University, Korea  
Yookun Cho, Seoul National University, Korea  
Jiman Hong, Soongsil University, Korea  
Joongjin Kook, Soongsil University, Korea  
Hyung-Do Choi, ETRI, Korea

**Building a Self-Healing Embedded System in a Multi-OS Environment**

Tomohiro Katori, Waseda University, Japan  
Lei Sun, Waseda University, Japan  
Dennis K. Nilsson, Chalmers University of Technology, Sweden  
Tatsuo Nakajima, Waseda University, Japan

**DARAW: A New Write Buffer to Improve Parallel I/O Energy-Efficiency**

Xiaojun Ruan, Auburn University, United States  
Adam Manzanares, Auburn University, United States  
Kiranmai Bellam, Auburn University, United States  
Xiao Qin, Auburn University, United States  
Ziliang Zong, South Dakota School of Mines & Technology, United States

**A Real-Time Message Scheduler Support for Dual-Sink Mobile Ad-Hoc Sensor Networks**

Junghoon Lee, Cheju National University, Korea  
Gyung-Leen Park, Cheju National University, Korea  
Shafqat Rehman, Cheju National University, Korea  
Sung Tae Jhang, Suwon University, Korea  
Mikyung Kang, Information Sciences Institute East, University of Southern California, United States

MON. 15:40 - 17:20 IS: S.PACIFIC BALLROOM #2

### (MMV-3) Multimedia and Visualization

Session chair: SeungJin Lim, Utah State University, USA

#### A New Multimedia Synchronous Distance Learning System: The IVA Study Case

Valter Roesler, Federal University of Rio Grande do Sul, Brazil  
Ronaldo Husemann, Federal University of Rio Grande do Sul, Brazil  
Carlos Haas Costa, Federal University of Rio Grande do Sul, Brazil

#### Variable Handling in Time-Based XML Declarative Languages

Luiz Fernando G. Soares, Pontifícia Universidade Católica do Rio de Janeiro, Brazil  
Rogério F. Rodrigues, Pontifícia Universidade Católica do Rio de Janeiro / FAST, a Microsoft Subsidiary, Brazil  
Renato Cerqueira, Pontifícia Universidade Católica do Rio de Janeiro, Brazil  
SimoneDJ Barbosa, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

#### User-Media Interaction via Interactive TV

Cesar A.C. Teixeira, Universidade Federal de São Carlos, Brazil  
Erick L. Melo, Universidade Federal de São Carlos, Brazil  
Renan G. Cattelan, Universidade de São Paulo, Brazil  
Maria da Graça C. Pimentel, Universidade de São Paulo, Brazil

#### Ubiquitous Services in Home Networks offered through Digital TV

Giliard Brito de Freitas, Universidade Federal de São Carlos, Brazil  
Cesar Augusto Camillo Teixeira, Universidade Federal de São Carlos, Brazil

MON. 15:40 - 17:20 SWD: S.PACIFIC BALLROOM #3

### (SEC-2) Computer Security

Session chair: Jaideep Vaidya, Rutgers, The State University of New Jersey, USA

#### Semi-Supervised Co-Training and Active Learning based Approach for Multi-View Intrusion Detection

Ching-Hao Mao, National Taiwan University of Science & Technology, Taiwan  
Hahn-Ming Lee, National Taiwan University of Science & Technology / Academia Sinica, Taiwan  
Devi Parikh, Carnegie Mellon University, United States  
Tsuhan Chen, Carnegie Mellon University, United States  
Si-Yu Huang, National Taiwan University of Science & Technology, Taiwan

#### Taking Total Control of Voting Systems: Firmware Manipulations on an Optical Scan Voting Terminal

Seda Davtyan, University of Connecticut, United States  
Sotiris Kentros, University of Connecticut, United States  
Aggelos Kiayias, University of Connecticut, United States  
Laurent Michel, University of Connecticut, United States  
Nicolas Nicolaou, University of Connecticut, United States  
Alexander Russell, University of Connecticut, United States  
Andrew See, University of Connecticut, United States  
Narasimha Shashidhar, University of Connecticut, United States  
Alexander A. Shvartsman, University of Connecticut, United States

#### SQLProb: A Proxy-Based Architecture towards Preventing SQL Injection Attacks

Anyi Liu, George Mason University, United States  
Yi Yuan, George Mason University, United States  
Duminda Wijesekera, George Mason University, United States  
Angelos Stavrou, George Mason University, United States

#### Secure Web-Based Retrieval of Documents with Usage Controls

Peter Djalaliev, University of Pittsburgh, United States  
José Carlos Brustoloni, University of Pittsburgh, United States

#### Privacy-Preserving Linear Programming

Jaideep Vaidya, Rutgers University, United States

MON. 15:40 - 17:20 AIA: S.PACIFIC BALLROOM #4

### (SOPDS) Self-Organization in Pervasive Distributed Systems

Session chair: Matteo Casadei, Alma Mater Studiorum - Università di Bologna, Italy

#### Keeping Diversity when Exploring Dynamic Environments

Jose Luis Fernandez-Marquez, Artificial Intelligence Research Institute, Spanish National Research Council, Spain  
Josep Lluís Arcos, Artificial Intelligence Research Institute, Spanish National Research Council, Spain

#### Geographical Data Collection in Sensor Networks with Self-Organizing Transaction Cluster-Heads

Neeraj Rajgure, National Institute of Informatics/New Jersey Institute of Technology, United States  
Eric Platon, National Institute of Informatics, Japan  
Cristian Borcea, New Jersey Institute of Technology, United States  
Shinichi Honiden, National Institute of Informatics, Japan

#### Prestige-Based Peer Sampling Service: Interdisciplinary Approach to Secure Gossip

Gian Paolo Jesi, University of Bologna, Italy  
Edoardo Mollona, University of Bologna, Italy  
Srijith K. Nair, Vrije Universiteit Amsterdam, Netherlands  
Maarten van Steen, Vrije Universiteit Amsterdam, Netherlands

#### Flexible Self-Healing Gradients

Jacob Beal, BBN Technologies, United States

#### Self-Organized Control of Knowledge Generation in Pervasive Computing Systems

Gabriella Castelli, University of Modena & Reggio Emilia, Italy  
Ronaldo Menezes, Florida Tech, United States  
Franco Zambonelli, University of Modena & Reggio Emilia, Italy

MON. 15:40 - 17:20 DS: HIBISCUS SUITE

### (CN-3) Computer Networks

Session chair: Fatiha Zaidi, University Paris-Sud, France

#### Practical Distributed Voter-Verifiable Secret Ballot System

Edoardo Biagioni, University of Hawaii, United States  
Yingfei Dong, University of Hawaii, United States  
Wesley Peterson, University of Hawaii, United States  
Kazuo Sugihara, Univ of Hawaii, United States

#### A Holistic Mechanism Against File Pollution in Peer-to-Peer Networks

Zhuhua Cai, Institute of Software, School of Electronics Engineering & Computer Science, Peking University, China  
Ruichuan Chen, Institute of Software, School of Electronics Engineering & Computer Science, Peking University, China  
Jianqiao Feng, Institute of Software, School of Electronics Engineering & Computer Science, Peking University, China  
Cong Tang, Institute of Software, School of Electronics Engineering & Computer Science, Peking University, China  
Zhong Chen, Institute of Software, School of Electronics Engineering & Computer Science, Peking University, China  
Jianbin Hu, Institute of Software, School of Electronics Engineering & Computer Science, Peking University, China

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**DoSTRACK: A System for Defending Against DoS Attacks**

Udaya Kiran Tupakula, Macquarie University, Australia  
Vijay Varadharajan, Macquarie University, Australia  
Srini Rao Pandalaneni, Hewlett Packard, Australia

**Secure Routing in Peer-to-Peer Distributed Hash Tables**

Keith Needels, Rochester Institute of Technology, United States  
Minseok Kwon, Rochester Institute of Technology, United States

**Multi-Step Attack Modelling and Simulation (MsAMS) Framework based on Mobile Ambients**

Virginia N.L. Franqueira, University of Twente, Netherlands  
Raul H.C. Lopes, Brunel University, United Kingdom  
Pascal van Eck, University of Twente, Netherlands

MON. 18:00 - 19:00 CORAL BALLROOM #1  
**SIGAPP Annual Business Meeting**

MON. 19:00 CORAL BALLROOM #4  
**SAC Reception (Hosted by SIGAPP)**

**Tuesday March 10, 2009**

TUE. 9:00 – 12:00 CORAL LOUNGE  
**Poster Session 1**

Posters of the following tracks: AOMS, BIO, CAHC, CF, CIIA, CM, CN, DADS, DM, DS, EC, EIS, GCR, HCI, IAR, SOAP, SWA (see the detailed list of posters at page 28.)

TUE. 08:20 - 10:00 ENG: S.PACIFIC BALLROOM #1

**(OS-2) Operating Systems**

Session chair: Jiman Hong, Soongsil University, Korea

**Fast Networking with Socket-Outsourcing in Hosted Virtual Machine Environments**

Hideki Eiraku, University of Tsukuba, Japan  
Yasushi Shinjo, University of Tsukuba, Japan  
Calton Pu, Georgia Institute of Technology, United States  
Younggyun Koh, Georgia Institute of Technology, United States  
Kazuhiko Kato, University of Tsukuba, Japan

**CPS-SIM: Configurable and Accurate Clock Precision Solid State Drive Simulator**

Jongmin Lee, University of Seoul, Korea  
Eujoon Byun, University of Seoul, Korea  
Hanmook Park, INDILINX.Co.,Ltd., Korea  
Jongmoo Choi, Dankook University, Korea  
Donghee Lee, University of Seoul, Korea  
Sam H. Noh, Hongik University, Korea

**Simplifying Security Policy Descriptions for Internet Servers in Secure Operating Systems**

Toshihiro Yokoyama, Keio University, Japan  
Miyuki Hanaoka, Keio University, Japan  
Makoto Shimamura, Keio University, Japan  
Kenji Kono, Keio University, Japan

**Response Time Analysis of Software Transactional Memory-Based Distributed Real-Time Systems**

Sherif F. Fahmy, Virginia Tech, United States  
Binoy Ravindran, Virginia Tech, United States  
E.D Jensen, The MITRE Corporation, United States

TUE. 08:20 - 10:00 IS: S.PACIFIC BALLROOM #2

**(DTTA-1) Data Theory, Technology, and Applications**

Session chair: Junping Sun, Nova Southeastern University, USA

**Exploiting Join Cardinality for Faster Hash Joins**

Michael Henderson, University of British Columbia Okanagan, Canada  
Bryce Cutt, University of British Columbia Okanagan, Canada  
Ramon Lawrence, University of British Columbia Okanagan, Canada

**Approximate Indexing in Road Network Databases**

Sang-Chul Lee, Hanyang University, Korea  
Sang-Wook Kim, Hanyang University, Korea  
Junghoon Lee, Cheju National University, Korea  
Jae Soo Yoo, Chungbuk National University, Korea

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**Computing Data Cubes Using Exact Sub-Graph Matching: The Sequential MCG Approach**

Joubert de Castro Lima, Instituto Tecnológico de Aeronáutica, Brazil

Celso Massaki Hirata, Instituto Tecnológico de Aeronáutica, Brazil

**Information Retrieval from Visual Databases Using Multiple Representations and Multiple Queries**

Noureddine Abbadeni, Al-Ain University of Science & Technology, United Arab Emirates

**CPref-SQL: A Query Language Supporting Conditional Preferences**

Sandra de Amo, Federal University of Uberlandia, Brazil

Marcos Roberto Ribeiro, Federal University of Uberlandia, Brazil

TUE. 08:20 - 10:00 SWD: S.PACIFIC BALLROOM #3

**(CM) Coordination Models, Languages and Applications**

Session chair: Michael Schumacher, University of Applied Sciences Western, Switzerland

**Knowledge-Based Coordination with a Reliable Semantic Subscription Mechanism**

Martin Murth, Institute of Computer Languages, Vienna University of Technology, Austria

Eva Kühn, Institute of Computer Languages, Vienna University of Technology, Austria

**Situated Tuple Centres in ReSpecT**

Matteo Casadei, Università di Bologna, Italy

Andrea Omicini, Università di Bologna, Italy

**A Framework for Modelling and Implementing Self-Organising Coordination**

Mirko Viroli, Università di Bologna, Italy

Matteo Casadei, Università di Bologna, Italy

Andrea Omicini, Università di Bologna, Italy

**On-Line Adaptation of Sequential Mobile Processes Running Concurrently**

Massimiliano de Leoni, SAPIENZA - Università di Roma, Italy

Giuseppe De Giacomo, SAPIENZA - Università di Roma, Italy

Yves Lespérance, York University, Canada

Massimo Mecella, SAPIENZA - Università di Roma, Italy

**Decomposing Port Automata**

Christian Koehler, CWI, Netherlands

Dave Clarke, Katholieke Universiteit Leuven, Belgium

TUE. 08:20 - 10:00 AIA: S.PACIFIC BALLROOM #4

**(DADS-1) Dependable and Adaptive Distributed Systems**

Session chair: Karl M. Goeschka, Vienna University of Technology, Austria

**A Framework for Dynamic Adaptation of Power-Aware Server Clusters**

Vinicius Petrucci, Fluminense Federal University, Brazil

Orlando Loques, Fluminense Federal University, Brazil

Daniel Mossé, University of Pittsburgh, United States

**Adaptive Resource Management Architecture for Distributed Real-Time Embedded Systems**

Ke Liang, Northwestern Polytechnical University, China

Xingshe Zhou, Northwestern Polytechnical University, China

Ruiqing Sheng, Northwestern Polytechnical University, China

Kailong Zhang, Northwestern Polytechnical University, China

**Formalizing the Notion of Adaptive System Behavior**

M. Broy, Technische Universität München, Germany

C. Leuxner, Technische Universität München, Germany

W. Sitou, Technische Universität München, Germany

B. Spanfelner, Technische Universität München, Germany

S. Winter, Technische Universität München, Germany

**ATM: An Automatic Trust Monitoring Algorithm for Service Software**

Mohammad Gias Uddin, Queen's University, Canada

Mohammad Zulkernine, Queen's University, Canada

**Supporting Recovery, Privacy and Security in RFID Systems Using a Robust Authentication Protocol**

Endadul Hoque, Marquette University, United States

Farzana Rahman, Marquette University, United States

Sheikh Iqbal Ahamed, Marquette University, United States

TUE. 08:20 - 10:00

APP: HIBISCUS SUITE

**(CAHC-1) Computer Application in Health Care**

Session chair: Fátima Nunes, Universidade de São Paulo, Brazil

**HIVSetSubtype: Software for Subtype Classification of HIV-1 Sequences**

Luciano V. de Araujo, University of São Paulo, Brazil

Sabri S. Sanabani, Federal University of São Paulo, Brazil

Ester C. Sabino, University of São Paulo, Brazil

João E. Ferreira, University of São Paulo, Brazil

**An Ontology-Based Application in Heart Electrophysiology: Representation, Reasoning and Visualization on the Web**

Bernardo Gonçalves, UFES (Federal University of Espírito Santo), Brazil

Veruska Zamborlini, Federal University of Espírito Santo (UFES), Brazil

Giancarlo Guizzardi, Federal University of Espírito Santo (UFES), Brazil

José G. Pereira Filho, Federal University of Espírito Santo (UFES), Brazil

**Thin Client Architecture in Support of Remote Radiology Learning**

Florian F. Schmitzberger, Stanford University, United States

Justus Roos, Stanford University, United States

Sandy Napel, Stanford University, United States

Geoffrey D. Rubin, Stanford University, United States

David Paik, Stanford University, United States

**A Framework of a Logic-Based Question-Answering System for the Medical Domain (LOQAS-Med)**

Sofia J. Athenikos, Drexel University, United States

Hyoil Han, Drexel University, United States

Ari D. Brooks, Drexel University, United States

10:00 - 10:30

CORAL LOUNGE

Coffee Break

TUE. 10:30 - 12:10 ENG: S.PACIFIC BALLROOM #1

**(OE-1) Organizational Engineering**

Session chair: Robert Winter, University of St. Gallen,  
Switzerland

**Towards a Fast Enterprise Ontology based Method  
for Post Merger Integration**

Martin Op't Land, Delft University of Technology, Netherlands  
Hans Zwitser, KLM Cargo, Netherlands  
Paul Ensink, KLM, Netherlands  
Quentin Lebel, Air France Cargo, France

**Operational Control of Service Processes:  
Modularization as Precondition**

Diana Heckl, Frankfurt School of Finance & Management, Germany  
Jürgen Moormann, Frankfurt School of Finance & Management,  
Germany

**A Role-Based Enterprise Architecture Framework**

Artur Caetano, CODE, INESC INOV, IST, Technical University of  
Lisbon, Portugal  
António Rito Silva, CODE, INESC INOV, IST, Technical University  
of Lisbon, Portugal  
José Tribolet, CODE, INESC INOV, IST, Technical University of  
Lisbon, Portugal

**Towards a Maturity Model for Corporate Data  
Quality Management**

Kai M. Hüner, Institute of Information Management, University of  
St. Gallen, Switzerland  
Martin Ofner, Institute of Information Management, University of  
St. Gallen, Switzerland  
Boris Otto, Institute of Information Management, University of St.  
Gallen, Switzerland

TUE. 10:30 - 12:10 IS: S.PACIFIC BALLROOM #2

**(DTTA-2) Data Theory, Technology, and  
Applications**

Session chair: Junping Sun, Nova Southeastern University,  
USA

**Enhancing XML Data Warehouse Query  
Performance by Fragmentation**

Hadj Mahboubi, University of Lyon, France  
Jérôme Darmont, University of Lyon, France

**Retrieving Valid Matches for XML Keyword  
Search**

Lingbo Kong, INRIA Futurs, France  
Rémi Gilleron, INRIA Futurs, France  
Aurélien Lemay, INRIA Futurs, France

**Fuzzy Data Modeling Based on XML Schema**

Li Yan, Northeastern University, China  
Z.M. Ma, Northeastern University, China  
Jian Liu, Northeastern University, China

**Privacy Protection for RFID Data**

Benjamin C.M. Fung, Concordia University, Canada  
Ming Cao, Concordia University, Canada  
Bipin C. Desai, Concordia University, Canada  
Heng Xu, Penn State University, United States

**Learning the Ontological Theory of an Information  
Extraction System in the Multi-Predicate ILP  
Setting**

Alain-Pierre Manine, Laboratoire d'Informatique de l'université  
Paris-Nord (LIPN), France

TUE. 10:30 - 12:10 SWD: S.PACIFIC BALLROOM #3

**(SIM) Advances in Computer Simulation**

Session chair: Giuseppe Vizzari, University of Milano-Bicocca,  
Italy

**An Extensible Simulation Tool for Overlay  
Networks and Services**

Jordi Pujol-Ahulló, Universitat Rovira i Virgili, Spain  
Pedro García-López, Universitat Rovira i Virgili, Spain  
Marc Sánchez-Artigas, Universitat Rovira i Virgili, Spain  
Marcel Arrufat-Arias, Universitat Rovira i Virgili, Spain

**Composing a High Fidelity HLA Federation for  
Littoral Operations**

Fawzi Hassaine, Defence R & D, Canada  
Russ Moulton, JRM Technologies, United States  
Chris Fink, JRM Technologies, United States

**Simulating Human Intuitive Decisions by  
Q-Learning**

Jason Leezer, Trinity University, United States  
Yu Zhang, Trinity University, United States

**Simulating Antigenic Drift and Shift in Influenza A**

Nuno Fachada, LaSEEB-ISR, Portugal  
Vitor V. Lopes, INETI - Instituto Nacional de Engenharia,  
Tecnologia e Inovação, Portugal  
Agostinho Rosa, LaSEEB-ISR, Portugal

**Simulation Supporting the Design of  
Self-Organizing Ambient Intelligence Systems**

Stefania Bandini, University of Milano-Bicocca, Italy  
Andrea Bonomi, University of Milano-Bicocca, Italy  
Giuseppe Vizzari, University of Milano-Bicocca, Italy

TUE. 10:30 - 12:10 AIA: S.PACIFIC BALLROOM #4

**(DADS-2) Dependable and Adaptive  
Distributed Systems**

Session chair: Rui Carlos Oliveira, Universidade do Minho,  
Portugal

**Adaptive Optimal Checkpoint Interval and Its  
Impact on System's Overall Quality in Soft  
Real-Time Applications**

Nianen Chen, Illinois Institute of Technology, United States  
Shangping Ren, Illinois Institute of Technology, United States

**Latency-Aware Leader Election**

Nuno Santos, École Polytechnique Fédérale de Lausanne (EPFL),  
Switzerland  
Martin Hutle, École Polytechnique Fédérale de Lausanne (EPFL),  
Switzerland  
André Schiper, École Polytechnique Fédérale de Lausanne (EPFL),  
Switzerland

**Boosting the Performance of Computing Systems  
through Adaptive Configuration Tuning**

Haifeng Chen, NEC Laboratories America, United States  
Guofei Jiang, NEC Laboratories America, United States  
Hui Zhang, NEC Laboratories America, United States  
Kenji Yoshihira, NEC Laboratories America, United States

**Efficient Maintenance of Distributed Data in  
Highly Dynamic Opportunistic Grids**

Raphael Y. de Camargo, University of São Paulo, Brazil  
Fernando Castor Filho, University of Pernambuco, Brazil  
Fabio Kon, University of São Paulo, Brazil

**Dynamic Planning and Weaving of Dependability  
Concerns for Self-Adaptive Ubiquitous Services**

Romain Rouvoy, University of Oslo, Norway  
Frank Eliassen, University of Oslo, Norway  
Mikaël Beauvois, University of Oslo, Norway

TUE. 10:30 - 12:10

APP: HIBISCUS SUITE

**(CAHC-2) Computer Application in Health  
Care**

Session chair: Luciano Araújo, Universidade de São Paulo,  
Brazil

**Medical Volume Segmentation Using Bank of  
Gabor Filters**

Adebayo Olowoyeye, Indiana University, United States  
Mihran Tuceryan, Indiana University Purdue University  
Indianapolis, United States  
Shiaofen Fang, Indiana University Purdue University Indianapolis,  
United States

**Evaluation of VR Medical Training Applications  
under the Focus of Professionals of the Health Area**

Cléber Gimenez Corrêa, Centro Universitário Eurípides de Marília  
(UNIVEM), Brazil  
Fátima L.S. Nunes, Escola de Artes, Ciências e Humanidades –  
Universidade de São Paulo (EACH/USP), Brazil  
Adriano Bezerra, Centro Universitário Eurípides de Marília  
(UNIVEM), Brazil  
Paulo M. Carvalho Jr., Faculdade de Medicina de Marília  
(FAMEMA), Brazil

**Task Based Visualization of 5D Brain EIT Data**

Yan Zhang, University of Hull, United Kingdom  
Peter J. Passmore, Middlesex University, United Kingdom  
Richard H. Bayford, Middlesex University, United Kingdom

**Augmented Reality Environment for Life Support  
Training**

Fabrcio Pretto, PUCRS, Brazil  
Isabel Harb Manssour, PUCRS, Brazil  
Maria H. Itaqui Lopes, PUCRS, Brazil  
Emerson Rodrigues da Silva, PUCRS, Brazil  
Márcio Sarroglia Pinho, PUCRS, Brazil

**Facial Image Classification of Mouse Embryos for  
the Animal Model Study of Fetal Alcohol  
Syndrome**

Shiaofen Fang, Indiana University Purdue University Indianapolis,  
United States  
Ying Liu, Indiana University Purdue University Indianapolis,  
United States  
Jeffrey Huang, Indiana University Purdue University Indianapolis,  
United States  
Sophia Vinci-Booher, Indiana University Medical Center, United  
States  
Bruce Anthony, Indiana University Medical Center, United States  
Feng Zhou, Indiana University Medical Center, United States

12:10 - 13:30

CORAL BALLROOM #4

**SAC General Luncheon**

TUE. 14:00 – 17:00

CORAL LOUNGE

**Poster Session 2**

Posters of the following tracks: CS, CSP, DTTA, EMBS,  
MCA, MMV, OE, OS, PL, RE, ROBOT, RTS, SE, SIM,  
SOPDS, TRECK, WSN, WT (see the detailed list of posters  
at page 28.)

TUE. 13:30 - 15:10 ENG: S.PACIFIC BALLROOM #1

**(OE-2) Organizational Engineering**

Session chair: Artur Caetano, Technical University of Lisbon,  
Portugal

**Concern-Oriented Business Architecture  
Engineering**

Stephan Kurpjuweit, Institute of Information Management,  
University of St. Gallen, Switzerland  
Robert Winter, Institute of Information Management, University of  
St. Gallen, Switzerland

**Collaborative Workflow Assistant for  
Organizational Effectiveness**

Joe Bolinger, The Ohio State University, United States  
Greg Horvath, The Ohio State University, United States  
Jay Ramanathan, The Ohio State University, United States  
Rajiv Ramnath, The Ohio State University, United States

**Collaborative Modeling of Business Processes – A  
Comparative Case Study**

Peter Rittgen, Vlerick Leuven Gent Management School, Belgium

**The People, the Process or the Technology? Using  
the ACE Framework to make Tradeoffs in Service  
Delivery Improvement**

Jay Ramanathan, The Ohio State University, United States  
Rajiv Ramnath, The Ohio State University, United States  
Randall Glassgow, Cardinal Health, United States

TUE. 13:30 - 15:10

IS: S.PACIFIC BALLROOM #2

**(DS) Data Streams**

Session chair: Gerson Zaverucha, Federal University of Rio de  
Janeiro, Brazil

**Parameterless Outlier Detection in Data Streams**

Alice Marascu, INRIA, France  
Florent Masseglia, INRIA, France

**Online Annotation and Prediction for Regime  
Switching Data Streams**

Gordon J. Ross, Institute of Mathematical Sciences, Imperial  
College London, United Kingdom  
Dimitris K. Tasoulis, Imperial College London, United Kingdom  
Niall M. Adams, Imperial College London, United Kingdom  
David J. Hand, Imperial College London, United Kingdom

**Link-Based Event Detection in Email  
Communication Networks**

Xiaomeng Wan, Dalhousie University, Canada  
Evangelos Milios, Dalhousie University, Canada  
Nauzer Kalyaniwalla, Dalhousie University, Canada  
Jeannette Janssen, Dalhousie University, Canada

**Adaptive Burst Detection in a Stream Engine**

Marcel Karnstedt, Ilmenau University of Technology, Germany  
Daniel Klan, Ilmenau University of Technology, Germany  
Christian Pölit, Ilmenau University of Technology, Germany  
Kai-Uwe Sattler, Ilmenau University of Technology, Germany  
Conny Franke, University of California, Davis, United States

**Evaluating Algorithms that Learn from Data  
Streams**

João Gama, University of Porto, Portugal  
Pedro Pereira Rodrigues, University of Porto, Portugal  
Raquel Sebastião, University of Porto, Portugal

TUE. 13:30 - 15:10 SWD: S.PACIFIC BALLROOM #3

**(CSP) Constraint Solving and Programming**

Session chair: Sebastian Brand, University of Melbourne, Australia

**LS(Graph & Tree): A Local Search Framework for Constraint Optimization on Graphs and Trees**

Pham Quang Dung, University of Louvain, Belgium  
Yves Deville, University of Louvain, Belgium  
Pascal Van Hentenryck, Brown University, United States

**Exploiting Weak Dependencies in Tree-Based Search**

Alejandro Arbelaez, Microsoft-INRIA, France  
Youssef Hamadi, Microsoft Research, United Kingdom

**Softening Gcc and Regular with Preferences**

Jean-Philippe Métivier, University of Caen, France  
Patrice Boizumault, University of Caen, France  
Samir Loudni, University of Caen, France

**Length-Lex Bound Consistency for Knapsack Constraints**

Justin Yip, Brown University, United States  
Pascal Van Hentenryck, Brown University, United States

**Message-Passing and Local Heuristics as Decimation Strategies for Satisfiability**

Lukas Kroc, Cornell University, United States  
Ashish Sabharwal, Cornell University, United States  
Bart Selman, Cornell University, United States

TUE. 13:30 - 15:10 AIA: S.PACIFIC BALLROOM #4

**(TRECK) Trust, Reputation, Evidence and other Collaboration Know-how**

Session chair: Jean-Marc Seigneur, University of Geneva, Switzerland

**iTrustU: A Blog Recommender System based on Multi-Faceted Trust and Collaborative Filtering**

Ting-Chun Peng, Institute for Information Industry, Taiwan  
Seng-cho T. Chou, National Taiwan University, Taiwan

**A Personalized Framework for Trust Assessment**

Trung Dong Huynh, University of Southampton, United Kingdom

**Extending Bayesian Trust Models Regarding Context-Dependence and User Friendly Representation**

Sebastian Ries, Technische Universität Darmstadt, Germany

**A Taxonomy and Adversarial Model for Attacks against Network Log Anonymization**

Justin King, IBM Rochester, United States  
Kiran Lakkaraju, University of Illinois, United States  
Adam Slagell, University of Illinois, United States

**Defending Online Reputation Systems against Collaborative Unfair Raters through Signal Modeling and Trust**

Yafei Yang, University of Rhode Island, United States  
Yan (Lindsay) Sun, University of Rhode Island, United States  
Steven Kay, University of Rhode Island, United States  
Qing Yang, University of Rhode Island, United States

TUE. 13:30 - 15:10

APP: HIBISCUS SUITE

**(BIO-1) Bioinformatics**

Session chair: Mathew Palakal, Indiana University School of Informatics, USA

**A New Probabilistic Generative Model of Parameter Inference in Biochemical Networks**

P. Lecca, Centre for Computational & Systems Biology, The Microsoft Research - University of Trento, Italy  
A. Palmisano, Centre for Computational & Systems Biology, The Microsoft Research - University of Trento, Italy  
C. Priami, Centre for Computational & Systems Biology, The Microsoft Research - University of Trento, Italy  
G. Sanguinetti, University of Sheffield, United Kingdom

**Construct Anticancer Drug-Drug Correlation Network**

Jiao Li, Tsinghua University, China  
Pamela Crowell, Idaho State University, United States  
Jake Yue Chen, Indiana University Purdue University Indianapolis, United States

**An Improved Shrinkage Estimator to Infer Regulatory Networks with Gaussian Graphical Models**

Kevin Kontos, Université Libre de Bruxelles, Belgium  
Gianluca Bontempi, Université Libre de Bruxelles, Belgium

**Using Dynamic Bayesian Networks to Infer Gene Regulatory Networks from Expression Profiles**

Akther Shermin, Macquarie University, Australia  
Mehmet A. Orgun, Macquarie University, Australia

15:10 - 15:40

CORAL LOUNGE

Coffee Break

TUE. 15:40 - 17:20 ENG: S.PACIFIC BALLROOM #1

**(HCI-1) Human-Computer Interaction**

Session chair: Brent Auernheimer, California State University, Fresno, USA

**Towards "WYDIWYS" for MIMI Using Concept Analysis**

Jie Dai, Cleveland Clinic, United States  
Remo Mueller, Case Western Reserve University, United States  
Jacek Szymanski, Case Western Reserve University, United States  
Guo-Qiang Zhang, Case Western Reserve University, United States

**Learners Automated Evaluation with the ODALA Approach**

Farida Bouarab-Dahmani, Tizi-Ouzou University, Algeria  
Malik Si-Mohammed, Tizi-Ouzou University, Algeria  
Catherine Comparot, Mirail University, France  
Pierre-Jean Charrel, Mirail University, France

**Expert System for Supporting Conformity Inspections of Software Application Interfaces to the ISO 9241**

Lorena Lira de Menezes, Federal University of Campina Grande, Brazil  
Mariana Romão do Nascimento, Federal University of Campina Grande, Brazil  
José Eustáquio Rangel de Queiroz, Federal University of Campina Grande, Brazil  
Joseana Macedo Fachine, Federal University of Campina Grande, Brazil

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## A Generic Library for GUI Reasoning and Testing

João Carlos Silva, Universidade do Minho, Portugal  
João Saraiva, Universidade do Minho, Portugal  
José Creissac Campos, Universidade do Minho, Portugal

## Using Web Accessibility Patterns for Web Application Development

Sabina Jeschke, University of Stuttgart, Germany  
Olivier Pfeiffer, Technische Universität Berlin, Germany  
Helmut Vieritz, University of Stuttgart, Germany

TUE. 15:40 - 17:20 IS: S.PACIFIC BALLROOM #2

## (ASIIS) Advances in Spatial and Image-based Information Systems

Session chair: Ki-Joune Li, Pusan National University, Korea

### Similarity Measures for Trajectory of Moving Objects in Cellular Space

Hye-Young Kang, Pusan National University, Korea  
Joon-Seok Kim, Pusan National University, Korea  
Ki-Joune Li, Pusan National University, Korea  
Jung-Rae Hwang, Pusan National University, Korea

### GPU-Based Computation of Distance Functions on Road Networks with Applications

Marta Fort, Institut d'Informàtica i Aplicacions, Universitat de Girona, Spain  
J. Antoni Sellares, Institut d'Informàtica i Aplicacions, Universitat de Girona, Spain

### A Spatial Bitmap-Based Index for Geographical Data Warehouses

Thiago Luís Lopes Siqueira, Universidade Federal de São Carlos, Brazil  
Ricardo Rodrigues Ciferri, Universidade Federal de São Carlos, Brazil  
Valéria Cesário Times, Universidade Federal de Pernambuco, Brazil  
Cristina Dutra de Aguiar Ciferri, Universidade Federal de São Paulo, Brazil

### Labeled Images Verification Using Gaussian Mixture Models

Micheal Baechler, University of Fribourg, Switzerland  
Jean-Luc Bloechle, University of Fribourg, Switzerland  
Andreas Humm, University of Fribourg, Switzerland  
Rolf Ingold, University of Fribourg, Switzerland  
Jean Hennebert, University of Applied Science, Switzerland

TUE. 15:40 - 17:20 SWD: S.PACIFIC BALLROOM #3

## (PSC) Programming for Separation of Concerns

Session chair: Emiliano Tramontana, Università di Catania, Italy

### Flexible Features: Making Feature Modules more Reusable

Peter Ebraert, Vrije Universiteit Brussel, Belgium  
Jorge Vallejos, Vrije Universiteit Brussel, Belgium  
Yves Vandewoude, Katholieke Universiteit Leuven, Belgium  
Theo D'Hondt, Vrije Universiteit Brussel, Belgium  
Yolande Berbers, Katholieke Universiteit Leuven, Belgium

### Building a Customizable Embedded Operating System with Fine-Grained Joinpoints Using the AOX Programming Environment

Jiyong Park, Seoul National University, Korea  
Seongsoo Hong, Seoul National University, Korea

## An Implementation Substrate for Languages Composing Modularized Crosscutting Concerns

Hans Schippers, University of Antwerp, Belgium  
Michael Haupt, Hasso-Plattner-Institut, University of Potsdam, Germany  
Robert Hirschfeld, Hasso-Plattner-Institut, University of Potsdam, Germany  
Dirk Janssens, University of Antwerp, Belgium

## Aspect-Oriented Procedural Content Engineering for Game Design

Walter Cazzola, Università di Milano, Italy  
Diego Colombo, Microsoft Ireland Research, Ireland  
Duncan Harrison, Realtime Worlds, United Kingdom

TUE. 15:40 - 17:20 AIA: S.PACIFIC BALLROOM #4

## (GCR) Geometric Constraints and Reasoning

Session chair: Xiao-Shan Gao, Chinese Academy of Sciences, China

### Formalizing Desargues' Theorem in Coq Using Ranks

Nicolas Magaud, Université de Strasbourg, France  
Julien Narboux, Université de Strasbourg, France  
Pascal Schreck, Université de Strasbourg, France

### Infinite Bar-Joint Frameworks

J.C. Owen, D-Cubed, Siemens PLM Software Ltd., United Kingdom  
S.C. Power, Lancaster University, United Kingdom

### Characterizing 1-Dof Henneberg-I Graphs with Efficient Configuration Spaces (Extended Abstract)

Heping Gao, University of Florida, United States  
Meera Sitharam, University of Florida, United States

### Body-and-Cad Geometric Constraint Systems

Kirk Haller, SolidWorks Corporation, United States  
Audrey Lee-St. John, Mount Holyoke College, United States  
Meera Sitharam, University of Florida, United States  
Ileana Streinu, Smith College, United States  
Neil White, University of Florida, United States

### Origami Fold as Algebraic Graph Rewriting

Tetsuo Ida, University of Tsukuba, Japan  
Hidekazu Takahashi, University of Tsukuba, Japan

TUE. 15:40 - 17:20

APP: HIBISCUS SUITE

## (BIO-2) Bioinformatics

Session chair: Mathew Palakal, Indiana University School of Informatics, USA

### HSP-HMMER: A Tool for Protein Domain Identification on a Large Scale

Bhanu Rekapalli, Joint Institute of Computational Sciences (UTK-ORNL), United States  
Christian Halloy, Joint Institute of Computational Sciences (UTK-ORNL), United States  
Igor B. Zhulin, Joint Institute of Computational Sciences (UTK-ORNL), United States

### A New Protein Motif Extraction Framework based on Constrained Co-Clustering

Francesca Cordero, University of Torino, Italy  
Alessia Visonti, University of Torino, Italy  
Marco Botta, University of Torino, Italy

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**Global-to-Local Representation and Visualization of Molecular Surfaces Using Deformable Models**

Nicolay Postarnakevich, San Francisco State University, United States  
Rahul Singh, San Francisco State University, United States

**A Novel Approach to Detect Copy Number Variation Using Segmentation and Genetic Algorithm**

Chihyun Park, Yonsei University, Korea  
Youngmi Yoon, Yonsei University - Gachon University of Medicine & Science, Korea  
Jaegyoon Ahn, Yonsei University, Korea  
Myungjin Moon, Yonsei University, Korea  
Sanghyun Park, Yonsei University, Korea

TUE. 18:00 - 19:00 CORAL BALLROOM #2  
**Future SAC Organization Meeting**

**Wednesday March 11, 2009**

WED. 8:20 - 10:00 CORAL BALLROOM 1-2  
**Keynote Address**

**Astronomy in Hawaii: Exploring Our Universe with the Largest Telescopes in the World**

Dr. Rolf-Peter Kudritzki  
Director of the University of Hawaii's Institute for Astronomy, USA

See details at page 5

15:10 - 15:40 CORAL LOUNGE  
**Coffee Break**

WED. 10:30 - 12:10 ENG: S.PACIFIC BALLROOM #1

**(HCI-2) Human-Computer Interaction**

Session chair: Brent Auernheimer, California State University, Fresno, USA

**Evaluating the Affective Tactics of an Emotional Pedagogical Agent**

Patrícia Augustin Jaques, PIPCA/UNISINOS, Brazil  
Matheus Lehmann, PIPCA/UNISINOS, Brazil  
Sylvie Pesty, Laboratoire d'Informatique de Grenoble, France

**Developing and Evaluating Web Multimodal Interfaces – A Case Study with Usability Principles**

Americo Talarico Neto, Universidade de São Paulo - Instituto de Ciências Matemáticas e de Computação, Brazil  
Thiago Jabur Bittar, Universidade de São Paulo - Instituto de Ciências Matemáticas e de Computação, Brazil  
Renata P.M. Fortes, Universidade de São Paulo - Instituto de Ciências Matemáticas e de Computação, Brazil  
Kátia Felizardo, Universidade de São Paulo - Instituto de Ciências Matemáticas e de Computação, Brazil

**A Pointing Method Using Two Accelerometers for Wearable Computing**

Yohei Tokoro, Kobe University, Japan  
Tsutomu Terada, Kobe University, Japan  
Masahiko Tsukamoto, Kobe University, Japan

**Requirements Engineering Using Appreciative Inquiry for an Online Community of Caregivers of Children with Autism**

Carol (Heins) Gonzales, Claremont Graduate University, United States  
Gondy Leroy, Claremont Graduate University, United States  
Gianluca de Leo, Old Dominion University, United States

**Towards the Universal Semantic Assessment of Accessibility**

Rui Lopes, LaSIGE/University of Lisbon, Portugal  
Konstantinos Votis, CERTH-ITI / University of Patras, Greece  
Luis Carriço, LaSIGE/University of Lisboa, Portugal  
Dimitrios Tzovaras, CERTH-ITI, Greece  
Spiridon Likothanassis, University of Patras, Greece

WED. 10:30 - 12:10 IS: S.PACIFIC BALLROOM #2

### **(DM-1) Data Mining**

Session chair: Toon Calders, Eindhoven University of Technology, Netherlands

#### **A Recommender System for Requirements Elicitation in Large-Scale Software Projects**

Carlos Castro-Herrera, DePaul University, United States  
Chuan Duan, DePaul University, United States  
Jane Cleland-Huang, DePaul University, United States  
Bamshad Mobasher, DePaul University, United States

#### **A Novel Distance-Based Classifier Built on Pattern Ranking**

Dipankar Bachar, Università degli Studi di Torino, Italy  
Rosa Meo, Università degli Studi di Torino, Italy

#### **Frequent Spatio-Temporal Patterns in Trajectory Data Warehouses**

L. Leonardi, Università Ca' Foscari, Italy  
S. Orlando, Università Ca' Foscari, Italy  
A. Raffaetà, Università Ca' Foscari, Italy  
A. Roncato, Università Ca' Foscari, Italy  
C. Silvestri, Università Ca' Foscari, Italy

#### **Optimal Candidate Generation in Spatial Co-Location Mining**

Zhongshan Lin, Utah State University, United States  
SeungJin Lim, Utah State University, United States

WED. 10:30 - 12:10 SWD: S.PACIFIC BALLROOM #3

### **(OOPS) Object Oriented Programming Languages and Systems**

Session chair: Alex Buckley, Sun Microsystems, USA

#### **Matching ThisType to Subtyping**

Chieri Saito, Kyoto University, Japan  
Atsushi Igarashi, Kyoto University, Japan

#### **Static Type Inference for Ruby**

Michael Furr, University of Maryland, United States  
Jong-hoon (David) An, University of Maryland, United States  
Jeffrey S. Foster, University of Maryland, United States  
Michael Hicks, University of Maryland, United States

#### **Representing Refactoring Opportunities**

Eduardo Piveta, Universidade Federal do Pampa, Brazil  
Marcelo Pimenta, Universidade Federal do Rio Grande do Sul, Brazil  
João Araújo, Universidade Nova de Lisboa, Portugal  
Ana Moreira, Universidade Nova de Lisboa, Portugal  
Pedro Guerreiro, Universidade do Algarve, Portugal  
R. Tom Price, Universidade Federal do Rio Grande do Sul, Brazil

#### **Symmetric Encapsulated Multi-Methods to Abstract over Application Structure**

David Lievens, Trinity College Dublin, Ireland  
William Harrison, Trinity College Dublin, Ireland

WED. 10:30 - 12:10 AIA: S.PACIFIC BALLROOM #4

### **(EC) Applications of Evolutionary Computation**

Session chair: Masaru Tezuka, Hitachi East Japan Solutions, Ltd., Japan

#### **A Particle Swarm Optimization based Algorithm for Fuzzy Bilevel Decision Making with Constraints-Shared Followers**

Ya Gao, University of Technology, Sydney, Australia  
Guangquan Zhang, University of Technology, Sydney, Australia  
Jie Lu, University of Technology, Sydney, Australia

#### **A Gradient Oriented Recombination Scheme for Evolution Strategies**

Haifeng Chen, NEC Laboratories America, Inc., United States  
Guofei Jiang, NEC Laboratories America, Inc., United States

#### **LEGAL-Tree: A Lexicographic Multi-Objective Genetic Algorithm for Decision Tree Induction**

Márcio P. Basgalupp, University of São Paulo, Brazil  
Rodrigo C. Barros, Pontifical Catholic University of Rio Grande do Sul, Brazil

André C.P.L.F. de Carvalho, University of São Paulo, Brazil  
Alex A. Freitas, University of Kent, United Kingdom  
Duncan D. Ruiz, Pontifical Catholic University of Rio Grande do Sul, Brazil

#### **Using Artificial Life Techniques for Distributed Grid Job Scheduling**

Azin Moallem, University of Saskatchewan, Canada  
Simone A. Ludwig, University of Saskatchewan, Canada

#### **Planning for Remarshaling in an Automated Container Terminal Using Cooperative Coevolutionary Algorithms**

Kiyeok Park, Pusan National University, Korea  
Taejin Park, Pusan National University, Korea  
Kwang Ryel Ryu, Pusan National University, Korea

WED. 10:30 - 12:10

APP: HIBISCUS SUITE

### **(CF) Computer Forensics**

Session chair: Lorie M. Liebrock, New Mexico Institute of Mining and Technology, USA

#### **A Detecting and Tracing Algorithm for Unauthorized Internet-News Plagiarism Using Spatio-Temporal Document Evoluton Model**

Chang-Keon Ryu, Pusan National University, Korea  
Hyong-Jun Kim, Pusan National University, Korea  
Hwan-Gue Cho, Pusan National University, Korea

#### **Improving Classification based Off-Topic Search Detection via Category Relationships**

Alana Platt, Illinois Institute of Technology, United States  
Saket S.R. Mengle, Illinois Institute of Technology, United States  
Nazli Goharian, Illinois Institute of Technology, United States

#### **Incorporating Accountability into Internet Email**

Wayne Liu, Florida State University, United States  
Sudhir Aggarwal, Florida State University, United States  
Zhenhai Duan, Florida State University, United States

#### **Artificial Intelligence Applied to Computer Forensics**

Bruno W.P. Hoelz, Brazilian Federal Police, Brazil  
Célia Ghedini Ralha, Brasilia University, Brazil  
Rajiv Geeverghese, Brasilia University, Brazil

12:10 - 13:30

Lunch Break

WED. 13:30 - 15:10 ENG: S.PACIFIC BALLROOM #1

### **(RE-1) Requirement Engineering**

Session chair: Maria Lencastre, Universidade de Pernambuco, Brazil

#### **Identifying Vulnerabilities and Critical Requirements Using Criminal Court Proceeding**

Travis D. Breaux, North Carolina State University, United States  
Jonathan D. Lewis, North Carolina State University, United States  
Paul N. Otto, North Carolina State University / Duke University, United States

Annie I. Antón, North Carolina State University, United States

#### **i\*-prefer: Optimizing Requirements Elicitation Process based on Actor Preferences**

Haihua Xie, Tsinghua University, China  
Lin Liu, Tsinghua University, China  
Jingwei Yang, Tsinghua University, China

#### **Mapping Semantically Enriched Formal Tropos to Business Process Models**

Ken Decreus, Ghent University, Belgium  
Geert Poels, Ghent University, Belgium

#### **Extending Problem Frames to Deal with Stakeholder Problems: An Agent- and Goal-Oriented Approach**

Sam Supakkul, The University of Texas at Dallas, United States  
Lawrence Chung, The University of Texas at Dallas, United States

WED. 13:30 - 15:10 IS: S.PACIFIC BALLROOM #2

### **(DM-2) Data Mining**

Session chair: Rosa Meo, Università degli Studi di Torino, Italy

#### **Combining Statistics and Semantics via Ensemble Model for Document Clustering**

Samah Jamal Fodeh, Michigan State University, United States  
William F. Punch, Michigan State University, United States  
Pang-Ning Tan, Michigan State University, United States

#### **Using Minimum Description Length for Process Mining**

T. Calders, Eindhoven University of Technology, Netherlands  
C.W. Günther, Eindhoven University of Technology, Netherlands  
M. Pechenizkiy, Eindhoven University of Technology, Netherlands  
A. Rozinat, Eindhoven University of Technology, Netherlands

#### **Applying Latent Dirichlet Allocation to Group Discovery in Large Graphs**

Keith Henderson, Lawrence Livermore National Laboratory, United States  
Tina Eliassi-Rad, Lawrence Livermore National Laboratory, United States

#### **Improved AdaBoost.M1 of Decision Trees with Confidence-Rated Predictions**

Zhipeng Xie, Fudan University, China

WED. 13:30 - 15:10 SWD: S.PACIFIC BALLROOM #3

### **(PL-1) Programming Languages**

Session chair: Bostjan Slivnik, University of Ljubljana, Slovenia

### **Optimizing Techniques for Saturated Arithmetic with First-Order Linear Recurrence**

Weihua Zhang, Parallel Processing Institute, Fudan University, China

Lili Liu, Parallel Processing Institute, Fudan University, China  
Chen Zhang, Parallel Processing Institute, Fudan University, China  
Hongjiong Zhang, Parallel Processing Institute, Fudan University, China

Binyu Zang, Parallel Processing Institute, Fudan University, China  
Chuanqi Zhu, Parallel Processing Institute, Fudan University, China

### **Algebraic Specification Techniques for Parametric Types with Logic-Based Constraints**

David Briggs, University of Southern Maine, United States  
Suad Alagić, University of Southern Maine, United States

### **Isomorphisms, Hylomorphisms and Hereditarily Finite Data Types in Haskell**

Paul Tarau, University of North Texas, United States

### **Banzai: A Java Framework for the Implementation of High-Performance Servers**

Julien Cervelle, Université Paris-Est, France  
Rémi Forax, Université Paris-Est, France  
Gautier Loyauté, Université Paris-Est, France  
Gilles Roussel, Université Paris-Est, France

WED. 13:30 - 15:10 AIA: S.PACIFIC BALLROOM #4

### **(CIIA-1) Computational Intelligence and Image Analysis**

Session chair: Chih-Cheng Hung, Southern Polytechnic State University, USA

### **Forensic Bite Mark Identification Using Image Processing Methods**

Glenn Flora, Indiana University Purdue University Indianapolis, United States  
Mihran Tuceryan, Indiana University Purdue University Indianapolis, United States  
Herb Blitzer, Indiana Forensic Institute, United States

### **Super-Resolution Image Reconstruction Using the Generalized Isotropic Multi-Level Logistic Model**

Ana L.D. Martins, Universidade Federal de São Carlos, Brazil  
Murillo R.P. Homem, Universidade Federal de São Carlos, Brazil  
Nelson D.A. Mascarenhas, Universidade Federal de São Carlos, Brazil

### **Heuristic Approach for Automated Shelf Space Allocation**

Dario Landa-Silva, University of Nottingham, United Kingdom  
Fathima Marikar, University of Nottingham, United Kingdom  
Khoi Le, University of Nottingham, United Kingdom

### **From Exponential to Almost Linear Decomposability of Finite or Infinite Trees**

Khalil Djelloul, Université d'Orléans, France

WED. 13:30 - 15:10 DS: HIBISCUS SUITE

### **(WT-1) Web Technologies**

Session chair: Fabio Vitali, Alma Mater Studiorum - Università di Bologna, Italy

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## Semantic Web Services: From OWL-S via UML to MVC Applications

Cássio V.S. Prazeres, Universidade de São Paulo, Brazil  
Cesar A.C. Teixeira, Universidade Federal de São Carlos, Brazil  
Ethan V. Munson, University of Wisconsin-Milwaukee, United States  
Maria da Graça C. Pimentel, Universidade de São Paulo, Brazil

## Implementing Rigorous Web Services with Process Algebra

Mauricio Chui Rodrigues, University of São Paulo, Brazil  
Simon Malkowski, CERCS, Georgia Institute of Technology, United States  
João Eduardo Ferreira, University of São Paulo, Brazil  
Marcos E.B. Broinizi, University of São Paulo, Brazil  
Calton Pu, CERCS, Georgia Institute of Technology, United States

## Towards Inference of More Realistic XSDs

Irena Mlýnková, Charles University, Czech Republic  
Martin Nečaský, Charles University, Czech Republic

## Discovering XML Keys and Foreign Keys in Queries

Martin Nečaský, Charles University, Czech Republic  
Irena Mlýnková, Charles University, Czech Republic

## An Optimistic Technique for Transactions Control Using REST Architectural Style

Luiz Alexandre Hiane da Silva Maciel, Instituto Tecnológico de Aeronáutica, Brazil  
Celso Massaki Hirata, Instituto Tecnológico de Aeronáutica, Brazil

15:10 - 15:40

CORAL LOUNGE

Coffee Break

WED. 15:40 - 17:20 ENG: S.PACIFIC BALLROOM #1

## (RE-2) Requirement Engineering

Session chair: Maria Lencastre, Universidade de Pernambuco, Brazil

## A Method for Developing UML State Machines

Christine Choppy, LIPN - Institut Galilée - Université Paris XIII, France  
Gianna Reggio, DISI - Università di Genova, Italy

## Mapping UML Sequence Diagram to Time Petri Net for Requirement Validation of Embedded Real-Time Systems with Energy Constraints

Ermeson Andrade, Federal University of Pernambuco (UFPE), Brazil  
Paulo Maciel, Federal University of Pernambuco (UFPE), Brazil  
Gustavo Callou, Federal University of Pernambuco, Brazil  
Bruno Nogueira, Federal University of Pernambuco (UFPE), Brazil  
Carlos Araújo, Federal University of Pernambuco (UFPE), Brazil

## LTS Semantics for use Case Models

Daniel Sinnig, Concordia University, Canada  
Patrice Chalin, Concordia University, Canada  
Ferhat Khendek, Concordia University, Canada

## Eliciting Required Characteristics for Usable Requirements Engineering Approaches

Kristina Winbladh, University of California, Irvine, United States  
Hadar Ziv, University of California, Irvine, United States  
Debra J. Richardson, University of California, Irvine, United States

WED. 15:40 - 17:20 IS: S.PACIFIC BALLROOM #2

## (DM-3) Data Mining

Session chair: Alessandra Raffaetà, Università Ca' Foscari, Italy

## Capturing Truthiness: Mining Truth Tables in Binary Datasets

Clifford Conley Owens III, Virginia Tech, United States  
T. M. Murali, Virginia Tech, United States  
Naren Ramakrishnan, Virginia Tech, United States

## HTILDE: Scaling Up Relational Decision Trees for Very Large Databases

Carina Lopes, Federal University of Rio de Janeiro (UFRJ), Brazil  
Gerson Zaverucha, Federal University of Rio de Janeiro (UFRJ), Brazil

## Automatic Discovery of Technology Trends from Patent Text

Youngho Kim, Information & Communications University, Korea  
Yingshi Tian, Information & Communications University, Korea  
Yoonjae Jeong, Information & Communications University, Korea  
Ryu Jihee, Information & Communications University, Korea  
Sung-Hyon Myaeng, Information & Communications University, Korea

WED. 15:40 - 17:20 SWD: S.PACIFIC BALLROOM #3

## (PL-2) Programming Languages

Session chair: Marjan Mernik, University of Maribor, Slovenia

## Troll, a Language for Specifying Dice-Rolls

Torben Ægidius Mogensen, University of Copenhagen, Denmark

## A Practical Solution for Scripting Language Compilers

Paul Biggar, Trinity College Dublin, Ireland  
Edsko de Vries, Trinity College Dublin, Ireland  
David Gregg, Trinity College Dublin, Ireland

## TWEAST: A Simple and Effective Technique to Implement Concrete-Syntax AST Rewriting Using Partial Parsing

Akim Demaille, EPITA Research & Development Laboratory (LRDE), France  
Roland Levillain, EPITA Research & Development Laboratory (LRDE), France  
Benoît Sigoure, EPITA Research & Development Laboratory (LRDE), France

## Points-to Analysis for JavaScript

Dongseok Jang, Korea Advanced Institute of Science & Technology, Korea  
Kwang-Moo Choe, Korea Advanced Institute of Science & Technology, Korea

WED. 15:40 - 17:20 AIA: S.PACIFIC BALLROOM #4

## (CIA-2) Computational Intelligence and Image Analysis

Session chair: Khalil Djelloul, LIFO, Orleans, France

### A New K-View Algorithm for Texture Image Classification Using Rotation-Invariant Feature

Hong Liu, Huazhong University of Science & Technology, China  
Siguang Dai, Huazhong University of Science & Technology, China  
Enmin Song, Huazhong University of Science & Technology, China  
Cihui Yang, Huazhong University of Science & Technology, China  
Chih-Cheng Hung, Southern Polytechnic State University, United States

### A Method to Construct Knowledge Table-Base in k-in-a-row Games

Chang-Ming Xu, Northeastern University, China  
Z.M. Ma, Northeastern University, China  
Xin-he Xu, Northeastern University, China

### On the Complexity of Hierarchical Associative Memories

Jana Štanclová, Charles University, Czech Republic

WED. 15:40 - 17:20

DS: HIBISCUS SUITE

### (WT-2) Web Technologies

Session chair: Kay-Uwe Schmidt, SAP, Germany

#### Server Push with Instant Messaging

Mikko Pohja, Helsinki University of Technology, Finland

#### Where are your Manners? Sharing Best Community Practices in the Web 2.0

Angelo Di Iorio, Department of Computer Science - University of Bologna, Italy  
Davide Rossi, Department of Computer Science - University of Bologna, Italy  
Fabio Vitali, Department of Computer Science - University of Bologna, Italy  
Stefano Zacchiroli, Université Paris Diderot, France

#### Partitioning Web Applications between the Server and the Client

Janne Kuuskeri, Tampere University of Technology, Finland  
Tommi Mikkonen, Tampere University of Technology, Finland

#### Socially Filtered Web Search

Kay-Uwe Schmidt, SAP Research, Germany  
Tobias Sarnow, SAP Research, Germany  
Ljiljana Stojanovic, Forschungszentrum Informatik, Germany

#### Implicit Relevance Feedback for Context-Aware Information Retrieval in UbiLearning Environments

Diogo S. Martins, Universidade Federal de São Carlos, Brazil  
Mauro Biajiz, Universidade Federal de São Carlos, Brazil  
Antonio F. do Prado, Universidade Federal de São Carlos, Brazil  
Wanderley L. de Souza, Universidade Federal de São Carlos, Brazil

WED. 18:00 - 19:00

S.PACIFIC BALLROOM #1

### Track Chairs Business Meeting

WED. 19:15

POLYNESIAN CULTURAL CENTER

### SAC Banquet

During the Banquet, the SAC Organization Committee will award the best papers of the conference

Thursday March 12, 2009

THU. 08:20 - 10:00 ENG: S.PACIFIC BALLROOM #1

### (SE-1) Software Engineering

Session chair: Chang Oan Sung, Indiana University Southeast, USA

#### Modeling and Integrating Aspects with UML Activity Diagrams

Zhanqi Cui, Nanjing University, China  
Linzhang Wang, Nanjing University, China  
Xuandong Li, Nanjing University, China  
Dianxiang Xu, North Dakota State University, United States

#### Towards a Compositional Approach to Model Transformation for Software Development

Soichiro Hidaka, National Institute of Informatics, Japan  
Zhenjiang Hu, National Institute of Informatics, Japan  
Hiroyuki Kato, National Institute of Informatics, Japan  
Keisuke Nakano, The University of Electro-Communications, Japan

#### Model Interfaces for Two-Way Obliviousness

Nathan V. Roberts, Baylor University, United States  
Eunjee Song, Baylor University, United States  
Paul C. Grabow, Baylor University, United States

#### Key Processes to Start Software Process Improvement in Small Companies

Francisco J. Pino, University of Cauca, Colombia  
Félix Garcia, University of Castilla-La Mancha, Spain  
Mario Piattini, University of Castilla-La Mancha, Spain

#### Executing JML Specifications of Java Card Applications: A Case Study

Néstor Cataño, University of Madeira, Portugal  
Tim Wahls, Dickinson College, United States

THU. 08:20 - 10:00

IS: S.PACIFIC BALLROOM #2

### (WSN) Wireless Sensor Networks

Session chair: Richard Anthony, Greenwich University, UK

#### Sink-Oriented Dynamic Location Service for Shortest Path Relay with Energy Efficient Global Grid

Hyeonjae Jeon, Sungkyunkwan University, Korea  
Kwangjin Park, Wonkwang University, Korea  
Hyunseung Choo, Sungkyunkwan University, Korea

#### Lightweight Monitoring of Sensor Software

Mustafa Hammad, New Mexico State University, United States  
Jonathan Cook, New Mexico State University, United States

#### Jointly Optimizing Data Acquisition and Delivery in Traffic Monitoring VANETs

Antonios Skordylis, University of Oxford, United Kingdom  
Niki Trigoni, University of Oxford, United Kingdom

#### Real-Time Multi-View Vision Systems Using WSNs

Paolo Pagano, Scuola Superiore Sant'Anna, Italy  
Francesco Piga, Scuola Superiore Sant'Anna, Pisa, Italy  
Yao Liang, Indiana University Purdue University Indianapolis, United States

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**Opportunistic Real-Time Routing in Multi-Hop  
Wireless Sensor Networks**

Junwhan Kim, Virginia Tech, United States  
Binoy Ravindran, Virginia Tech, United States

THU. 08:20 - 10:00 SWD: S.PACIFIC BALLROOM #3

**(SOAP-1) Service Oriented Architectures and  
Programming**

Session chair: Claudio Guidi, Alma Mater Studiorum -  
Università di Bologna, Italy

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**Runtime Monitoring of Web Service  
Choreographies Using Streaming XML**

Sylvain Hallé, University of California, Santa Barbara, United States  
Roger Villemaire, Université du Québec à Montréal, Canada

**Load Management in Model-Aware Execution of  
Composite Web Services**

Karolina Zurowska, University of Saskatchewan, Canada  
Ralph Deters, University of Saskatchewan, Canada

**Using Process Mining to Business Process  
Distribution**

Faramarz Safi Esfahani, Islamic Azad University, Najaf Abad  
Branch, Iran  
Masrah Azrifah Azmi Murad, University of Putra Malaysia,  
Malaysia  
Nasir Sulaiman, University of Putra Malaysia, Malaysia  
Nur Izura Udzir, University of Putra Malaysia, Malaysia

**CMC-UMC: A Framework for the Verification of  
Abstract Service-Oriented Properties**

Maurice H. ter Beek, ISTI-CNR, Italy  
Franco Mazzanti, ISTI-CNR, Italy  
Stefania Gnesi, ISTI-CNR, Italy

THU. 08:20 - 10:00 AIA: S.PACIFIC BALLROOM #4

**(ROBOT-1) Intelligent Robotic Systems**

Session chair: Evan Drumwright, University of Memphis, USA

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**Visual Detection of Novel Terrain via Two-Class  
Classification**

Christopher Brooks, Massachusetts Institute of Technology, United  
States  
Karl Iagnemma, Massachusetts Institute of Technology, United  
States

**Attention Driven Visual Processing for an  
Interactive Dialog Robot**

Thomas Müller, Technische Universität München, Germany  
Alois Knoll, Technische Universität München, Germany

**Evaluation of Visual Attention Models under 2D  
Similarity Transformations**

Milton Roberto Heinen, Federal University of the Rio Grande do  
Sul, Brazil  
Paulo Martins Engel, Federal University of the Rio Grande do Sul,  
Brazil

**Evolving Morphologies and Gaits of Physically  
Realistic Simulated Robots**

Milton Roberto Heinen, Federal University of the Rio Grande do  
Sul, Brazil  
Fernando Osorio, Universidade de São Paulo, Brazil

THU. 08:20 - 10:00

APP: HIBISCUS SUITE

**(CS-1) Computational Sciences**

Session chair: Adrian Sandu, Virginia Polytechnic Institute  
and State University, USA

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**Workflow Management for High Volume Supernova  
Search**

Cecilia R. Aragon, Lawrence Berkeley National Laboratory, United  
States  
Karl J. Runge, Space Sciences Laboratory, United States

**Vector Stream Processing for Effective Application  
of Heterogeneous Parallelism**

John C. Linford, Virginia Polytechnic Institute & State University,  
United States  
Adrian Sandu, Virginia Polytechnic Institute & State University,  
United States

**GTfold: A Scalable Multicore Code for RNA  
Secondary Structure Prediction**

Amrita Mathuriya, Georgia Institute of Technology, United States  
David A. Bader, Georgia Institute of Technology, United States  
Christine E. Heitsch, Georgia Institute of Technology, United States  
Stephen C. Harvey, Georgia Institute of Technology, United States

**Modular Implementation of Adaptive Decisions in  
Stochastic Simulations**

Pilsung Kang, Virginia Tech, United States  
Yang Cao, Virginia Tech, United States  
Naren Ramakrishnan, Virginia Tech, United States  
Calvin J. Ribbens, Virginia Tech, United States  
Srinidhi Varadarajan, Virginia Tech, United States

**Bulk based Preconditioning for Quantum Dot  
Computations**

Christof Vömel, ETH Zurich, Switzerland  
Stanimire Z. Tomov, University of Tennessee, Knoxville, United  
States  
Osni Marques, Lawrence Berkeley National Laboratory, United  
States  
Andrew Canning, Lawrence Berkeley National Laboratory, United  
States  
Jack Dongarra, University of Tennessee, United States  
Julien Langou, University of Colorado at Denver, United States  
Lin-Wang Wang, Lawrence Berkeley National Laboratory, United  
States

10:00 - 10:30

CORAL LOUNGE

**Coffee Break**

THU. 10:30 - 12:10 ENG: S.PACIFIC BALLROOM #1

**(SE-2) Software Engineering**

Session chair: Chang Oan Sung, Indiana University Southeast,  
USA

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**Using Aspects and Dynamic Composition to  
Provide Context-Aware Adaptation for Mobile  
Applications**

Flavia C. Delicato, Federal University of Rio Grande do Norte,  
Brazil  
Isanio L. Araujo Santos, Federal University of Rio Grande do Norte,  
Brazil  
Paulo F. Pires, Federal University of Rio Grande do Norte, Brazil  
Ana Liz S. Oliveira, Federal University of Rio Grande do Norte,  
Brazil  
Thais Batista, Federal University of Rio Grande do Norte, Brazil  
Luci Pirmez, Federal University of Rio de Janeiro, Brazil

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### Using a Product Line for Creating Component Systems

Tomáš Bureš, Institute of Computer Science, Academy of Sciences of the Czech Republic / Charles University, Czech Republic  
Petr Hnětynka, Charles University, Czech Republic  
Michal Malohlava, Charles University, Czech Republic

### A Comparative Study of Techniques to Write Customizable Libraries

Baris Aktemur, University of Illinois at Urbana-Champaign, United States  
Sam Kamin, University of Illinois at Urbana-Champaign, United States

### Applying Test-Driven Code Search to the Reuse of Auxiliary Functionality

Otávio Augusto Lazzarini Lemos, Universidade de São Paulo - Instituto de Ciências Matemáticas e de Computação, Brazil  
Sushil Bajracharya, University of California, Irvine, United States  
Joel Ossher, University of California, Irvine, United States  
Paulo Cesar Masiero, Universidade de São Paulo - Instituto de Ciências Matemáticas e de Computação, Brazil  
Cristina Lopes, University of California, Irvine, United States

### Component-Based Metrics Applying the Strength of Dependency between Classes

Misook Choi, Woosuk University, Korea  
Injoo J. Kim, East-West University, United States  
Jiman Hong, Soongsil University, Korea  
Jungyeop Kim, Utica College, United States

THU. 10:30 - 12:10 IS: S.PACIFIC BALLROOM #2

### (EIS) Enterprise Information Systems

Session chair: Maria-Eugenia Iacob, University of Twente, The Netherlands

### Management of Requirements in ERP Development: A Comparison between Proprietary and Open Source ERP

Björn Johansson, Copenhagen Business School, Denmark  
Rogério Atem de Carvalho, Federal Center for Technological Education of Campos, Brazil

### Cross-Organizational ERP Management: How to Create a Successful Business Case?

Silja Eckartz, University Twente, Netherlands  
Maya Daneva, University Twente, Netherlands  
Roel Wieringa, University Twente, Netherlands  
Jos van Hillegersberg, University Twente, Netherlands

### Model-Based Reasoning on the Achievement of Business Goals

Sebastian Höhn, Albert-Ludwig University, Germany

### Policy Management Architecture Based on Provisioning Model and Authorization Certificates

Arlindo L. Marcon Jr., Pontifical Catholic University of Paraná, Brazil  
Altair O. Santin, Pontifical Catholic University of Paraná, Brazil  
Luiz A. de Paula Lima Jr., Pontifical Catholic University of Paraná, Brazil  
Maicon Stihler, Pontifical Catholic University of Paraná, Brazil

### Privacy Preserving Churn Prediction

Shuting Xu, Virginia State University, United States  
Shuhua Lai, Virginia State University, United States  
Manying Qiu, Virginia State University, United States

THU. 10:30 - 12:10 SWD: S.PACIFIC BALLROOM #3

### (SOAP-2) Service Oriented Architectures and Programming

Session chair: Stefania Gnesi, ISTI-CNR, Italy

### PRECISO: A Reengineering Process and a Tool for Database Modernisation through Web Services

Ricardo P. del Castillo, Alarcos Research Group, University of Castilla-La Mancha, Spain  
Ignacio García-Rodríguez, Alarcos Research Group, University of Castilla-La Mancha, Spain  
Ismael Caballero, Alarcos Research Group, University of Castilla-La Mancha, Spain  
Macario Polo, Alarcos Research Group, University of Castilla-La Mancha, Spain  
Mario Piattini, Alarcos Research Group, University of Castilla-La Mancha, Spain

### Annotating UDDI Registries to Support the Management of Composite Services

M. Brian Blake, Georgetown University, United States  
Michael F. Nowlan, Georgetown University, United States  
Ajay Bansal, Georgetown University, United States  
Srividya Kona, Georgetown University, United States

### A General Service Oriented Approach for Managing Virtual Machines Allocation

Paolo Anedda, Center for Advanced Studies, Research & Development in Sardinia, Italy  
Massimo Gaggero, Center for Advanced Studies, Research & Development in Sardinia, Italy  
Simone Manca, Center for Advanced Studies, Research & Development in Sardinia, Italy  
Omar Schiaratura, Center for Advanced Studies, Research & Development in Sardinia, Italy  
Simone Leo, Center for Advanced Studies, Research & Development in Sardinia, Italy  
Fabrizio Montesi, University of Bologna, Italy  
Gianluigi Zanetti, Center for Advanced Studies, Research & Development in Sardinia, Italy

### SimSOA – An Approach for Agent-Based Simulation and Design-Time Assessment of SOC-Based IT Systems

Stefan Thanheiser, Karlsruhe Institute of Technology (KIT), Institute AIFB, Germany  
Lei Liu, Karlsruhe Institute of Technology (KIT), Institute AIFB, Germany  
Hartmut Schmeck, Karlsruhe Institute of Technology (KIT), Institute AIFB, Germany

THU. 10:30 - 12:10 AIA: S.PACIFIC BALLROOM #4

### (ROBOT-2) Intelligent Robotic Systems

Session chair: Fernando Santos Osório, University of São Paulo, Brazil

### Visual Loop-Closing with Image Profiles

Hannah Hoerding, Harvey Mudd College, United States  
Lesia Bilitchenko, California Polytechnic University, Pomona, United States  
Zachary Dodds, Harvey Mudd College, United States

### Autonomous Networked Robots for the Establishment of Wireless Communication in Uncertain Emergency Response Scenarios

Stelios Timotheou, Imperial College London, United Kingdom  
Georgios Loukas, Imperial College London, United Kingdom

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**A Robust and Tractable Contact Model for Dynamic Robotic Simulation**

Evan Drumwright, University of Memphis, United States  
Dylan A. Shell, University of Southern California, United States

**Sources of Error in a Rigid Body Simulation of Rigid Parts on a Vibrating Rigid Plate**

Steve Berard, Rensselaer Polytechnic Institute, United States  
Binh Nguyen, Rensselaer Polytechnic Institute, United States  
J.C. Trinkle, Rensselaer Polytechnic Institute, United States

THU. 10:30 - 12:10

APP: HIBISCUS SUITE

**(CS-2) Computational Sciences**

Session chair: Yang Cao, Virginia Polytechnic Institute and State University, USA

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**An Efficient and Accurate Lattice for Pricing Derivatives under a Jump-Diffusion Process**

Chuan-Ju Wang, National Taiwan University, Taiwan  
Tian-Shyr Dai, National Chiao Tung University, Taiwan  
Yuh-Dauh Lyuu, National Taiwan University, Taiwan  
Yen-Chun Liu, National Chiao Tung University, Taiwan

**Semi-Automatic Parallelization of Direct and Inverse Problems for Geothermal Simulation**

H. Martin Bucker, RWTH Aachen University, Germany  
Arno Rasch, RWTH Aachen University, Germany  
Volker Rath, RWTH Aachen University, Germany  
Andreas Wolf, RWTH Aachen University, Germany

**Uncertainty Apportionment for Air Quality Forecast Models**

Haiyan Cheng, Virginia Polytechnic Institute & State University, United States  
Adrian Sandu, Virginia Polytechnic Institute & State University, United States

**Interlaced Euler Scheme for Stiff Systems of Stochastic Differential Equations**

Ioana Cipcigan, University of Maryland, Baltimore County, United States  
Muruhan Rathinam, University of Maryland, Baltimore County, United States

**Adaptive Finite Element Methods for Nonlinear Inverse Problems**

Wolfgang Bangerth, Texas A & M University, United States  
Amit Joshi, Baylor College of Medicine, United States

THU. 12:10 - 13:30

SEA PEARL SUITE 1-2

**Track-Chairs Luncheon**

Open to all track chairs

12:10 - 13:30

**Lunch Break**

THU. 13:30 - 15:10

ENG: S.PACIFIC BALLROOM #1

**(SE-3) Software Engineering**

Session chair: Chang Oan Sung, Indiana University Southeast, USA

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**Integration of Formal Specification, Review, and Testing for Software Component Quality Assurance**

Shaoying Liu, Hosei University, Japan  
Tetsuo Tamai, University of Tokyo, Japan  
Shin Nakajima, National Institute of Informatics, Japan

**Enhanced Lattice-Based Adaptive Random Testing**

T.Y. Chen, Swinburne University of Technology, Australia  
De Hao Huang, Swinburne University of Technology, Australia  
F.-C. Kuo, Swinburne University of Technology, Australia  
R.G. Merkel, Swinburne University of Technology, Australia  
Johannes Mayer, University of Ulm, Germany

**GenQA: Automated Addition of Architectural Quality Attribute Support for Java Software**

Sarthak Grover, SAP, United States  
Nigamanth Sridhar, Cleveland State University, United States

**A Case Study of Pattern-Based Software Framework to Improve the Quality of Software Development**

Chih-Hung Chang, Hsiuping Institute of Technology, Taiwan  
Chih-Wei Lu, Hsiuping Institute of Technology, Taiwan  
William C. Chu, Tunghai University, Taiwan  
Nien-Lin Hsueh, Feng Chia University, Taiwan  
Chorng-Shiuh Koong, Taichung University, Taiwan

**An Empirical Study of Incorporating Cost into Test Suite Reduction and Prioritization**

Adam M. Smith, University of Pittsburgh, United States  
Gregory M. Kapfhammer, Allegheny College, United States

THU. 13:30 - 15:10

IS: S.PACIFIC BALLROOM #2

**(IAR-1) Information Access and Retrieval**

Session chair: Yoshinori Hijikata, Osaka University, Japan

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**Bipolar Query Satisfaction Using Satisfaction and Dissatisfaction Degrees: Bipolar Satisfaction Degrees**

Tom Matthé, Ghent University, Belgium  
Guy De Tré, Ghent University, Belgium

**Heterogeneous Bipolar Criteria Satisfaction Handling in Geographic Decision Support Systems: An LSP based Approach**

Guy De Tré, Ghent University, Belgium  
Jozo J. Dujmović, San Francisco State University, United States  
Nico Van de Weghe, Ghent University, Belgium  
Tom Matthé, Ghent University, Belgium  
Niels Charlier, Ghent University, Belgium

**Alternatives to Conjunctive Query Processing in Peer-to-Peer File-Sharing Systems**

Wai Gen Yee, Illinois Institute of Technology, United States  
Linh Thai Nguyen, Illinois Institute of Technology, United States  
Ophir Frieder, Illinois Institute of Technology, United States

**Fast Error-Tolerant Search on Very Large Texts**

Marjan Celikik, Max Planck Institute for Computer Science, Germany  
Holger Bast, Max Planck Institute for Computer Science, Germany

**A Session Based Personalized Search Using an Ontological User Profile**

Mariam Daoud, IRIT, Paul Sabatier University, France  
Lynda Tamine-Lechani, IRIT, Paul Sabatier University, France  
Mohand Boughanem, IRIT, Paul Sabatier University, France  
Bilal Chebaro, Lebanese University, Lebanon

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THU. 13:30 - 15:10 SWD: S.PACIFIC BALLROOM #3

### **(EMBS-1) Embedded Systems**

Session chair: Alessio Bechini, University of Pisa, Italy

#### **Celling SHIM: Compiling Deterministic Concurrency to a Heterogeneous Multicore**

Nalini Vasudevan, Columbia University, United States  
Stephen A. Edwards, Columbia University, United States

#### **Heterogeneous Real-Time Embedded Software Optimization Considering Hardware Platform**

Meikang Qiu, University of New Orleans, United States  
Hao Li, University of North Texas, United States  
Edwin H.-M. Sha, University of Texas at Dallas, United States

#### **RT-Replayer: A Record-Replay Architecture for Embedded Real-Time Software Debugging**

Ji Chan Maeng, Hanyang University, Korea  
Jung-Il Kwon, Hanyang University, Korea  
Min-Kyu Sin, Hanyang University, Korea  
Minsoo Ryu, Hanyang University, Korea

#### **Optimal Service Level Allocation in Environmentally Powered Embedded Systems**

Clemens Moser, Swiss Federal Institute of Technology (ETH), Switzerland  
Jian-Jia Chen, Swiss Federal Institute of Technology (ETH), Switzerland  
Lothar Thiele, Swiss Federal Institute of Technology (ETH), Switzerland

#### **Improving Functional Verification of Embedded Systems Using Hierarchical Composition and Set Theory**

Cássio L. Rodrigues, Federal University of Campina Grande, Brazil  
Karina R.G. da Silva, Federal University of Goiás, Brazil  
Henrique N. Cunha, Federal University of Campina Grande, Brazil  
Jorge C.A. de Figueiredo, Federal University of Campina Grande, Brazil  
Dalton D.S. Guerrero, Federal University of Campina Grande, Brazil  
Elmar Melcher, Federal University of Campina Grande, Brazil

THU. 13:30 - 15:10 AIA: S.PACIFIC BALLROOM #4

### **(SWA-1) The Semantic Web and Applications**

Session chair: Hoyil Han, Drexel University, USA

#### **Improving Folksonomies Quality by Syntactic Tag Variations Grouping**

Francisco Echarte, Universidad Pública de Navarra, Spain  
José Javier Astrain, Universidad Pública de Navarra, Spain  
Alberto Córdoba, Universidad Pública de Navarra, Spain  
Jesús Villadangos, Universidad Pública de Navarra, Spain

#### **Efficient Processing of SPARQL Joins in Memory by Dynamically Restricting Triple Patterns**

Jinghua Groppe, Institute of Information Systems, University of Lübeck, Germany  
Sven Groppe, Institute of Information Systems, University of Lübeck, Germany  
Sebastian Ebers, Institute of Information Systems, University of Lübeck, Germany  
Volker Linnemann, Institute of Information Systems, University of Lübeck, Germany

#### **SWOBE – Embedding the Semantic Web languages RDF, SPARQL and SPARUL into Java for Guaranteeing Type Safety, for Checking the**

### **Satisfiability of Queries and for the Determination of Query Result Types**

Sven Groppe, Institute of Information Systems, University of Lübeck, Germany  
Jana Neumann, Institute of Information Systems, University of Lübeck, Germany  
Volker Linnemann, Institute of Information Systems, University of Lübeck, Germany

### **Spam Decisions on Gray E-mail Using Personalized Ontologies**

Seongwook Youn, University of Southern California, United States  
Dennis McLeod, University of Southern California, United States

THU. 13:30 - 15:10

DS: HIBISCUS SUITE

### **(MCA-1) Mobile Computing and Applications**

Session chair: Natallia Kokash, CWI, The Netherlands

#### **A Lightweight 3D Visualization and Navigation System on Handheld Devices**

Wendel Silva, University of Fortaleza, Brazil  
Maria Andreia Rodrigues, University of Fortaleza (UNIFOR), Brazil

#### **Seamless Access of Home Theater Personal Computers for Mobile Devices**

Lorena Maia, UFCG, Brazil  
Danilo Santos, UFCG, Brazil  
Ricardo Souza, UFCG, Brazil  
Angelo Perkusich, UFCG, Brazil  
Hyggo Almeida, UFCG, Brazil

#### **Wireless Communication Glove Apparatus for Motion Tracking, Gesture Recognition, Data Transmission, and Reception in Extreme Environments**

Marion Ceruti, Space and Naval Warfare Systems, USA  
Vincent Dinh, Space and Naval Warfare Systems, USA  
Nghia Tran, Space and Naval Warfare Systems, USA  
Hoa Phan, Space and Naval Warfare Systems, USA  
LorRaine Duffy, Space and Naval Warfare Systems, USA  
Tu-Anh Ton, Space and Naval Warfare Systems, USA  
Guy Leonard, Space and Naval Warfare Systems, USA  
Emily Medina, Space and Naval Warfare Systems, USA  
Omar Amezcua, Space and Naval Warfare Systems, USA  
Sunny Fugate, Space and Naval Warfare Systems, USA  
Gary Rogers, Space and Naval Warfare Systems, USA  
Robert Luna, Space and Naval Warfare Systems, USA  
Jeffrey Ellen, Space and Naval Warfare Systems, USA

#### **Creating a Mobile Web Application Platform: The Lively Kernel Experiences**

Tommi Mikkonen, Sun Microsystems Laboratories, Finland  
Antero Taivalsaari, Sun Microsystems Laboratories, Finland

#### **The Device Service Bus: A Solution for Embedded Device Integration through Web Services**

Gustavo Araújo, Federal University of Santa Catarina, Brazil  
Frank Siqueira, Federal University of Santa Catarina, Brazil

15:10 - 15:40

CORAL LOUNGE

Coffee Break

THU. 15:40 - 17:20 ENG: S.PACIFIC BALLROOM #1

### **(SE-4) Software Engineering**

Session chair: Chang Oan Sung, Indiana University Southeast, USA

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### Refining Spectrum-Based Fault Localization Rankings

Rui Abreu, Delft University of Technology, Netherlands  
Wolfgang Mayer, University of South Australia, Australia  
Markus Stumptner, University of South Australia, Australia  
Arjan J.C. van Gemund, Delft University of Technology, Netherlands

### Projecting Code Changes onto Execution Traces to Support Localization of Recently Introduced Bugs

Johannes Bohnet, Hasso-Plattner-Institute at the University of Potsdam, Germany  
Stefan Voigt, Hasso-Plattner-Institute at the University of Potsdam, Germany  
Jürgen Doellner, Hasso-Plattner-Institute at the University of Potsdam, Germany

### Searching for Relevant Software Change Artifacts Using Semantic Networks

Mikael Lindvall, Fraunhofer Center Maryland for Experimental Software Engineering, United States  
Raimund L. Feldmann, Fraunhofer Center Maryland for Experimental Software Engineering, United States  
George Karabatis, University of Maryland Baltimore County (UMBC), United States  
Zhiyuan Chen, University of Maryland Baltimore County (UMBC), United States  
Vandana P. Janeja, University of Maryland Baltimore County (UMBC), United States

### Failure Management Development for Integrated Automotive Safety-Critical Software Systems

Haklin Kimm, East Stroudsburg University, United States  
Sung Shin, South Dakota State University, United States  
Ho-sang Ham, Electronics & Communication Research Institute, Korea  
Chang Oan Sung, Indiana University Southeast, United States

### Remote Software Protection by Orthogonal Client Replacement

Mariano Ceccato, Fondazione Bruno Kessler, Italy  
Paolo Tonella, Fondazione Bruno Kessler, Italy  
Mila Dalla Preda, University of Verona, Italy  
Anirban Majumdar, University of Trento, Italy

THU. 15:40 - 17:20 IS: S.PACIFIC BALLROOM #2

### (IAR-2) Information Access and Retrieval

Session chair: Guy de Tré, University of Ghent, Belgium

### HITS Algorithm Improvement Using Anchor-related Text Extracted by DOM Structure Analysis

Yoshinori Hijikata, Osaka University, Japan  
Bui Quang Hung, Osaka University, Japan  
Masanori Otsubo, Osaka University, Japan  
Shogo Nishida, Osaka University, Japan

### A Sentence Level Probabilistic Model for Evolutionary Theme Pattern Mining from News Corpora

Shizhu Liu, Illinois Institute of Technology, United States  
Yuval Merhav, Illinois Institute of Technology, United States  
Wai Gen Yee, Illinois Institute of Technology, United States  
Nazli Goharian, Illinois Institute of Technology, United States  
Ophir Frieder, Illinois Institute of Technology, United States

### Diverse Peer Selection in Collaborative Web Search

Le-Shin Wu, Indiana University, United States  
Filippo Menczer, Indiana University, United States

### A Class of Multistep Sparse Matrix Strategies for Concept Decomposition Matrix Approximation

Chi Shen, Kentucky State University, United States  
Mike Unuakhalu, Kentucky State University, United States

### Self-Organizing Collaborative Filtering in Global-Scale Massive Multi-User Virtual Environments

Alexander Höhfeld, University of Trier, Germany  
Patrick Gratz, University of Luxembourg, Luxembourg  
Angelo Beck, University of Trier, Germany  
Jean Botev, University of Trier, Germany  
Hermann Schloss, University of Trier, Germany  
Ingo Scholtes, University of Trier, Germany

THU. 15:40 - 17:20 SWD: S.PACIFIC BALLROOM #3

### (EMBS-2) Embedded Systems

Session chair: Alessio Bechini, University of Pisa, Italy

### FlashBox: A System for Logging Non-Deterministic Events in Deployed Embedded Systems

Siddharth Choudhuri, University of California, Irvine, United States  
Tony Givargis, University of California, Irvine, United States

### Impact of NVRAM Write Cache for File System Metadata on I/O Performance in Embedded Systems

In Hwan Doh, Hongik University, Korea  
Hyo J. Lee, Hongik University, Korea  
Young Je Moon, Hongik University, Korea  
Eunsam Kim, Hongik University, Korea  
Jongmoo Choi, Dankook University, Korea  
Donghee Lee, University of Seoul, Korea  
Sam H. Noh, Hongik University, Korea

### Storage Architecture and Software Support for SLC/MLC Combined Flash Memory

Soojun Im, Sungkyunkwan University, Korea  
Dongkun Shin, Sungkyunkwan University, Korea

### The Current Feasibility of Gesture Recognition for a Smartphone Using J2ME

Luís Tarrataca, Technical University of Lisbon, Portugal  
André C. Santos, Technical University of Lisbon, Portugal  
João M.P. Cardoso, University of Porto, Portugal

### An Adaptive Block-Set based Management for Large-Scale Flash Memory

Zhanzhan Liu, University of Science & Technology of China, China  
Lihua Yue, University of Science & Technology of China, China  
Peng Wei, University of Science & Technology of China, China  
Peiquan Jin, University of Science & Technology of China, China  
Xiaoyan Xiang, University of Science & Technology of China, China

THU. 15:40 - 17:20 AIA: S.PACIFIC BALLROOM #4

### (SWA-2) The Semantic Web and Applications

Session chair: Sofia J. Athenikos, Drexel University, USA

### Efficient Mobile Reasoning for Pervasive Discovery

Luke Steller, Monash University, Australia  
Shonali Krishnaswamy, Monash University, Australia

### Applying Semantic Web Technology to Feature Modeling

Lamia Abo Zaid, Vrije Universiteit Brussel, Belgium  
Frederic Kleineremann, Vrije Universiteit Brussel, Belgium  
Olga De Troyer, Vrije Universiteit Brussel, Belgium

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### Parallel Materialization of Large ABoxes

Sivaramakrishnan Narayanan, The Ohio State University, United States  
Umit Catalyurek, The Ohio State University, United States  
Tahsin Kurc, Emory University, United States  
Joel Saltz, Emory University, United States

### Leveraging OWL for GIS Interoperability: Rewards and Pitfalls

Serge Boucher, Université Libre de Bruxelles, Belgium  
Esteban Zimányi, Université Libre de Bruxelles, Belgium

THU. 15:40 - 17:20

DS: HIBISCUS SUITE

### (MCA-2) Mobile Computing and Applications

Session chair: Tommi Mikkonen, Sun Microsystems

### A Destination Prediction Method Using Driving Contexts and Trajectory for Car Navigation Systems

Kohei Tanaka, Osaka University, Japan  
Yasue Kishino, NTT Communication Science Laboratories, Japan  
Tutomu Terada, Kobe University, Japan  
Shojiro Nishio, Grad. of Information Science and Technology, Osaka University, Japan

### A Mobility Management Scheme using SCTP-SIP for Real-time Services across Heterogeneous Networks

Hyelim Park, Information and Communications University, Korea  
Myungchul Kim, Information and Communications University, Korea  
Sooyong Lee, Information and Communications University, Korea  
Sungwon Kang, Information and Communications University, Korea  
Yongho Kim, Korea Telecom, Korea

### Mobility Aware Path Maintenance in Ad hoc Networks

Sumesh Philip, Western Illinois University, United States  
Vishal Anand, SUNY College at Brockport, United States

### A Passive Conformance Testing Approach for a Manet Routing Protocol

Ana Cavalli, Telecom & Management SudParis, France  
Stephane Maag, Telecom & Management SudParis, France  
Edgardo Montes de Oca, Montimage, France  
Willy Jimenez, Telecom & Management SudParis, France

### A Flexible QoS-aware Routing Protocol for Infrastructure-less B3G Networks

Natallia Kokash, CWI, Netherlands  
Roberto Speicys Cardoso, INRIA, France  
Pierre-Guillaume Raverdy, INRIA, France  
Valerie Issarny, INRIA, France

THU. 17:20

Conference Ends

# SAC 2009 Posters List

TUESDAY, 9:00 - 12:00

CORAL LOUNGE

## Poster Session 1

### (AOMS) Agent-Oriented Software Engineering Methodologies and Systems

#### Extending PASSI to Model Multi-Agent Systems Product Lines

Ingrid Nunes, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Uirá Kulesza, Federal University of Rio Grande do Norte, Brazil  
Camila Nunes, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Elder Cirilo, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Carlos Lucena, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

#### Automatic Product Derivation of Multi-Agent Systems Product Lines

Elder Cirilo, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Ingrid Nunes, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Uirá Kulesza, Federal University of Rio Grande do Norte, Brazil  
Camila Nunes, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Carlos Lucena, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

### (BIO) Bioinformatics

#### On a Discretizable Subclass of Instances of the Molecular Distance Geometry Problem

Carlile Lavor, State University of Campinas, Brazil

Leo Liberti, LIX, École Polytechnique, France

Antonio Mucherino, LIX, École Polytechnique, France

Nelson Maculan, Federal University of Rio de Janeiro, Brazil

#### Measuring Coherence between Electronic and Manual Annotations in Biological Databases

Catia Pesquita, University of Lisbon, Portugal

Daniel Faria, University of Lisbon, Portugal

Francisco M. Couto, University of Lisbon, Portugal

Rui Lopes, University of Lisbon, Portugal

#### Two Lower Bounds for Self-Assemblies at Temperature 1

Ján Maňuch, Simon Fraser University, Canada

Ladislav Stacho, Simon Fraser University, Canada

Christine Stoll, Simon Fraser University, Canada

### (CAHC) Computer Application in Health Care

#### An Evaluation of Technologies for the Pseudonymization of Medical Data

Thomas Neubauer, Vienna University of Technology, Austria

Andreas Ekelhart, Secure Business Austria, Austria

#### Automated Device for Determination of Skin Lesion Regions

Mohammad El Habbal, American University of Beirut, Lebanon

Maya El Moghrabi, American University of Beirut, Lebanon

Omar Monajjed, American University of Beirut, Lebanon

Ayman Kayssi, American University of Beirut, Lebanon

### (CF) Computer Forensics

#### Clustering Malware-Generated Spam Emails with a Novel Fuzzy String Matching Algorithm

Chun Wei, University of Alabama at Birmingham, United States  
Alan Sprague, University of Alabama at Birmingham, United States  
Gary Warner, University of Alabama at Birmingham, United States

#### Revealing Common Sources of Image Spam by an Unsupervised Clustering with Visual Features

Chengcui Zhang, University of Alabama at Birmingham, United States

Wei-Bang Chen, University of Alabama at Birmingham, United States

Xin Chen, University of Alabama at Birmingham, United States  
Gary Warner, University of Alabama at Birmingham, United States

#### Reconstructing Strip-Shredded Documents Using Color as Feature Matching

Marlos A.O. Marques, Pontifical Catholic University of Parana – PUCPR, Brazil

Cinthia O.A. Freitas, Pontifical Catholic University of Parana – PUCPR, Brazil

#### On the Persistence of Deleted Windows Registry Data Structures

Damir Kahvedžić, University College Dublin, Ireland

Tahar Kechadi, University College Dublin, Ireland

### (CIIA) Computational Intelligence and Image Analysis

#### An Intelligent Video System for Vehicle Localization and Tracking in Police Cars

Amirali Jazayeri, Indiana University Purdue University Indianapolis, United States

Hongyuan Cai, Indiana University Purdue University Indianapolis, United States

Jiang Yu Zheng, Indiana University Purdue University Indianapolis, United States

Mihran Tuceryan, Indiana University Purdue University Indianapolis, United States

Herbert Blitzer, Indiana Forensic Institute, United States

#### A New Cross-Training Approach by Using Labeled Data

Dongshan Huang, Huazhong University of Science & Technology, China

Enmin Song, Huazhong University of Science & Technology, China  
Guangzhi Ma, Huazhong University of Science & Technology, China

Huirong Zhan, Huazhong University of Science & Technology, China  
Chih-Cheng Hung, Southern Polytechnic State University, United States

#### Foreground Classification Using Active Template in the Scene Context for Visual Surveillance

Xiaoying Sha, Ocean University of China / Lotus Hill Research Institute, China

Xiaobai Liu, Huazhong University of Science & Technology / Lotus Hill Research Institute, China

Jianting Wen, Chinese Academy of Sciences, China

Liang Lin, Lotus Hill Research Institute, China

Junyu Dong, Ocean University of China, China

#### Shader Space Navigator: A Turbo for an Intuitive and Effective Shading Process

Jae-Ho Lee, ETRI, Korea

Min-Hee Jang, Hanyang University, Korea

Du-Yeol Kim, Hanyang University, Korea

Sang-Wook Kim, Hanyang University, Korea

Min-Ho Kim, Studio Floating Island, Korea

Jin-Sung Choi, ETRI, Korea

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**(CM) Coordination Models, Languages and Applications**

**Applying Reo to Service Coordination in Long-Running Business Transactions**

Natallia Kokash, CWI, Netherlands  
Farhad Arbab, CWI, Netherlands

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**(CN) Computer Networks**

**Securing Key Issuing in Peer-to-Peer Networks**

Cong Tang, School of EECS, Peking University, China  
Ruichuan Chen, School of EECS, Peking University, China  
Zhuhua Cai, School of EECS, Peking University, China  
Anmin Xie, School of EECS, Peking University, China  
Jianbin Hu, School of EECS, Peking University, China  
Liyong Tang, School of EECS, Peking University, China  
Zhong Chen, School of EECS, Peking University, China

**Analysis of the Secure RTP Protocol on Voice over Wireless Networks Using Extended MedQoS**

Alexandre Passito, Federal University of Amazonas, Brazil  
Edjair Mota, Federal University of Amazonas, Brazil  
Edjard Mota, Federal University of Amazonas, Brazil  
Edson Nascimento, Jr., Federal University of Amazonas, Brazil

**Preservation of Ordering in a Network of Brokers**

Cássio M.M. Pereira, Faculdades COC, Brazil  
Daniel C. Lobato, Faculdades COC, Brazil  
César A.C. Teixeira, Universidade Federal de São Carlos, Brazil  
Maria G. Pimentel, Universidade de São Paulo, Brazil

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**(DADS) Dependable and Adaptive Distributed Systems**

**An Approach to Identifying Conversation Dependency in Service Oriented System during Dynamic Evolution**

Min Liu, State Key Laboratory of Software Development Environment of Beihang University, China  
Dianfu Ma, State Key Laboratory of Software Development Environment of Beihang University, China  
Yongwang Zhao, State Key Laboratory of Software Development Environment of Beihang University, China

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**(DM) Data Mining**

**Mining Functional Associated Patterns From Biological Network Data**

Xuequn Shang, Northwestern Polytechnical University, China  
Zhanhuai Li, Northwestern Polytechnical University, China  
Wei Li, Northwestern Polytechnical University, China

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**(DS) Data Streams**

**Real-Time Scheduling for Continuous Queries with Deadlines**

Li Ma, Chinese Academy of Sciences/China University of Petroleum, China  
Xin Li, Shandong University, China  
Yongyan Wang, Chinese Academy of Sciences, China  
Hongyan Wang, Chinese Academy of Sciences, China

**A Method for Clustering Transient Data Streams**

Pimwadee Chaovalit, University of Maryland, Baltimore County, United States  
Aryya Gangopadhyay, University of Maryland, Baltimore County, United States

**Incremental Outlier Detection in Data Streams Using Local Correlation Integral**

Xinjie Lu, Chinese Academy of Sciences, China  
Tian Yang, Chinese Academy of Sciences, China  
Zaifei Liao, Chinese Academy of Sciences, China  
Manzoor Elahi, Chinese Academy of Sciences, China  
Wei Liu, Chinese Academy of Sciences, China  
Hongyan Wang, Chinese Academy of Sciences, China

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**(EC) Applications of Evolutionary Computation**

**Daily Demand Forecasting of New Products Utilizing Diffusion Models and Genetic Algorithms**

Masaru Tezuka, Hitachi East Japan Solutions, Ltd., Japan  
Satoshi Munakata, Hitachi East Japan Solutions, Ltd., Japan

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**(EIS) Enterprise Information Systems**

**Constructing Process Views for Service Outsourcing**

Rik Eshuis, Eindhoven University of Technology, Netherlands  
Alex Nortä, University of Helsinki, Finland

**Web Services in the Dutch Healthcare Insurance Sector: Expected Versus Achieved Benefits**

Hayley Bakker, University of Twente, Netherlands  
Maria E. Iacob, University of Twente, Netherlands

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**(GCR) Geometric Constraints and Reasoning**

**The Unique Solution for P3P Problem**

Jianliang Tang, College of Mathematics & Computing Science, Shenzhen University, China  
Nengzeng Liu, College of Mathematics & Computing Science, Shenzhen University, China

**Topology Determination and Isolation for Implicit Plane Curves**

Jin-San Cheng, Chinese Academy of Sciences, China  
Xiao-Shan Gao, Chinese Academy of Sciences, China  
Jia Li, Chinese Academy of Sciences, China

**Multivariate Root Finding with Search Space Decomposition and Randomisation**

Markus Färber, Technische Universität Ilmenau, Germany  
Beat Brüderlin, Technische Universität Ilmenau, Germany

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**(HCI) Human-Computer Interaction**

**Formalizing Motivational Patterns based on Colors and Their Cultural Meanings for Developing Web Applications**

Ana Luiza Dias, Universidade Federal de São Carlos, Brazil  
Junia C. Anacleto, Universidade Federal de São Carlos, Brazil  
Luciana M. Silveira, Universidade Tecnológica do Paraná, Brazil  
Rosângela Ap. D. Penteado, Universidade Federal de São Carlos, Brazil

**Design and Implementation on a Pie Menu Interface for Analog Joysticks**

Masakatsu Miyamoto, Kobe University, Japan  
Tsutomu Terada, Kobe University, Japan  
Masahiko Tsukamoto, Kobe University, Japan

**Development of a Biosignals Framework for Usability Analysis**

Inês Oliveira, CICANT, Universidade Lusófona, Portugal  
Rui Lopes, LaSIGE/University of Lisbon, Portugal  
Nuno M. Guimarães, LaSIGE/University of Lisbon, Portugal

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**MATRACA: A Tool to Provide Support for People with Impaired Vision when Using the Computer for Simple Tasks**

Francisco Gomes de Oliveira Neto, Federal University of Campina Grande, Brazil

Joseana Macêdo Fechine, Federal University of Campina Grande, Brazil

Roberta Ribeiro G. Pereira, Federal University of Campina Grande, Brazil

Paloma F. de Queiroz e Silva, Federal University of Campina Grande, Brazil

Michelly Guedes de Oliveira, Federal University of Campina Grande, Brazil

José Eustáquio R. Queiroz, Federal University of Campina Grande, Brazil

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**(IAR) Information Access and Retrieval**

**Stratified Division Queries Involving Ordinal User Preferences**

P. Bosc, Irista/Enssat - University of Rennes 1, France  
O. Pivert, Irista/Enssat - University of Rennes 1, France  
O. Soufflet, Irista/Enssat - University of Rennes 1, France

**Music Retrieval based on a Multi-Samples Selection Strategy for Support Vector Machine Active Learning**

Tian-jiang Wang, Huazhong University of Science & Technology, China

Gang Chen, Huazhong University of Science & Technology, China  
Perfecto Herrera, Universitat Pompeu Fabra, Spain

**A Light-Weight Summarizer based on Language Model with Relative Entropy**

Chandan Kumar, International Institute of Information Technology, India

Prasad Pingali, International Institute of Information Technology, India

Vasudeva Varma, International Institute of Information Technology, India

**Improved Spam Filtering by Extraction of Information from Text Embedded Image E-mail**

Seongwook Youn, University of Southern California, United States  
Dennis McLeod, University of Southern California, United States

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**(SOAP) Service Oriented Architectures and Programming**

**Assessing Complexity of Service-Oriented Computing Using Learning Classifier Systems**

Lei Liu, Karlsruhe Institute of Technology (KIT), Institute AIFB, Germany

Stefan Thanheiser, Karlsruhe Institute of Technology (KIT), Institute AIFB, Germany

Hartmut Schmeck, Karlsruhe Institute of Technology (KIT), Institute AIFB, Germany

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**(SWA) The Semantic Web and Applications**

**Semantic Information and Sensor Networks**

Krishnaprasad Thirunarayan, Wright State University, United States  
Joshua Pschorr, Wright State University, United States

**SemanticQA: Web-Based Ontology-Driven Question Answering**

Samir Tartir, University of Georgia, United States  
Bobby McKnight, University of Georgia, United States  
I. Budak Arpniar, University of Georgia, United States

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TUESDAY, 14:00 - 17:00

CORAL LOUNGE

**Poster Session 2**

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**(CS) Computational Sciences**

**An Algorithm for Optimal Comma Free Codes with Isomorphism Rejection**

Hao Wang, Michigan Technological University, United States  
Vladimir D. Tonchev, Michigan Technological University, United States

**Reduced Parallel PNN Algorithm for PC Grid Systems**

Akiyoshi Wakatani, Konan University, Japan  
Takuya Koezuka, Konan University, Japan

**Exhaustion Dominated Performance – A First Attempt**

Nima Namaki, University West, Sweden  
Andreas de Blanche, University West, Sweden  
Stefan Mankefors-Christiernin, University West, Sweden

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**(CSP) Constraint Solving and Programming**

**An Approximate Approach to Constraint Solving in Soft Sensing**

Tian Yang, Chinese Academy of Sciences, China  
Zaifei Liao, Chinese Academy of Sciences, China  
Xinjie Lu, Chinese Academy of Sciences, China  
Hongang Wang, Chinese Academy of Sciences, China

**The Sum-of-Increments Constraint in the Consecutive-Ones Matrix Decomposition Problem**

Sebastian Brand, University of Melbourne, Australia

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**(DTTA) Data Theory, Technology, and Applications**

**Consistent and Decentralized Orchestration of BPEL Processes**

Weihai Yu, University of Tromsø, Norway

**Building an Efficient Preference XML Query Processor**

SungRan Cho, University of Hannover, Germany  
Wolf-Tilo Balke, University of Hannover, Germany

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**(EMBS) Embedded Systems**

**Method for Fast Compression of Program Codes for Remote Updates in Embedded Systems**

Ryozo Kiyohara, Mitsubishi Electric Corporation, Japan  
Satoshi Mii, Mitsubishi Electric Corporation, Japan  
Mitsuhiro Matsumoto, Osaka University, Japan  
Masayuki Numao, Osaka University, Japan  
Satoshi Kurihara, Osaka University, Japan

**On Scheduling Soft Real-Time Tasks with Lock-Free Synchronization for Embedded Devices**

Shouwen Lai, Virginia Tech, United States  
Binoy Ravindran, Virginia Tech, United States  
Hyeonjoong Cho, ETRI, Korea

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## **ERIKA and OpenZB: An Implementation for Real-Time Wireless Networking**

Paolo Pagano, Scuola Superiore Sant'Anna, Italy  
Mangesh Chitnis, Scuola Superiore Sant'Anna, Italy  
Antonio Romano, Scuola Superiore Sant'Anna, Italy  
Giuseppe Lipari, Scuola Superiore Sant'Anna, Italy  
Ricardo Severino, Polytechnic Institute of Porto, Portugal  
Mário Alves, Polytechnic Institute of Porto, Portugal  
Paulo G. Sousa, Polytechnic Institute of Porto, Portugal  
Eduardo Tovar, Polytechnic Institute of Porto, Portugal

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## **(MCA) Mobile Computing and Applications**

### **High-Level Specification of a Middleware Framework for Mobile Ad Hoc Networks – Spontaneousware Case**

Vando de Freitas Batista, Federal University of Pernambuco, Brazil  
Nelson Souto Rosa, Federal University of Pernambuco, Brazil

### **Scene Map on Wireless Mobile Platform**

Jiang Yu Zheng, Indiana University Purdue University Indianapolis, United States

### **Towards a Landmark Influence Framework to Protect Location Privacy**

Mehrab Monjur, Marquette University, United States  
Sheikh I. Ahamed, Marquette University, United States

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## **(MMV) Multimedia and Visualization**

### **Efficient Concept Detection by Fusing Simple Visual Features**

Duy-Dinh Le, National Institute of Informatics, Japan  
Shin'ichi Satoh, National Institute of Informatics, Japan

### **Visualization of Information Flows in a Very Large Social Network**

Shin-gyu Kim, Seoul National University, Korea  
Hyuck Han, Seoul National University, Korea  
Kyunggho Jeon, Seoul National University, Korea  
Hyungsoo Jung, Seoul National University, Korea  
Heon Y. Yeom, Seoul National University, Korea

### **Two-Dimensional Non-Photorealistic Drawings on Mobile Devices**

Damon Shing-Min Liu, National Chung Cheng University, Taiwan  
Chi-Hsien Liu, National Chung Cheng University, Taiwan  
Ching-I Cheng, National Chung Cheng University, Taiwan

### **Fast Mode Decision for Scalable Video Coding based on Neighboring Macroblock Analysis**

Gyeonggeun Goh, Pusan National University, Korea  
Jinmi Kang, Pusan National University, Korea  
Misook Cho, Pusan National University, Korea  
Kidong Chung, Pusan National University, Korea

### **A Framework for Text Visualization Using Memory Traffic Management for Mobile Devices**

João Bosco Ferreira Filho, Universidade Federal do Ceará, Brazil  
José de S.R. Neto, Universidade Federal do Ceará, Brazil  
Cláudio R.F. Lima, Universidade Federal do Ceará, Brazil  
Rossana M.C. Andrade, Universidade Federal do Ceará, Brazil

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## **(OE) Organizational Engineering**

### **Structuring a Process Management Center of Excellence**

Rafael Paim, Federal Center for Technological Education Celso Suckow da Fonseca, Brazil  
Vanessa Nunes, NP2Tec/Federal University of the State of Rio de Janeiro (UNIRIO), Brazil  
Bruno Pinho, GEOS, Brazil  
Flavia Santoro, NP2Tec, Brazil  
Claudia Cappelli, NP2Tec, Brazil  
Fernanda Araujo Baião, NP2Tec, Brazil

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## **Constraint-Based Modelling and Analysis of Organisations**

Viara Popova, De Montfort University, United Kingdom  
Alexei Sharpanskykh, Vrije Universiteit Amsterdam, Netherlands

## **Architecture-Driven Requirements Engineering**

Wilco Engelsman, BiZZdesign, Netherlands  
Maria E. Iacob, University of Twente, Netherlands  
Henry M. Franken, BiZZdesign, Netherlands

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## **(OS) Operating Systems**

### **Arbiter-Recall: A New Function Update Scheme by Arbitration between a Remote Call and a Dynamic Update for Wireless Sensor Networks**

Sangho Yi, Seoul National University, Korea  
Hong Min, Seoul National University, Korea  
Yookun Cho, Seoul National University, Korea  
Yeongkwun Kim, Western Illinois University, United States  
Injoo Jeong, East West University, United States  
Hyung Bae Park, University of Missouri at Kansas City, United States  
Sun-Ae Shin, University of Missouri at Kansas City, United States

### **RPP: Reference Pattern based Prefetching Controller**

Hyo J. Lee, Hongik University, Korea  
In Hwan Doh, Hongik University, Korea  
Sam H. Noh, Hongik University, Korea

### **A Practical Evaluation of Large-Memory Data Processing on a Reliable Remote Memory System**

Hyungsoo Jung, Seoul National University, Korea  
Hyuck Han, Seoul National University, Korea  
Shin-gyu Kim, Seoul National University, Korea  
Heon Y. Yeom, Seoul National University, Korea

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## **(PL) Programming Languages**

### **Data Parallel Dialect of Scheme**

Petr Krajca, SUNY Binghamton, United States  
Vilem Vychodil, SUNY Binghamton, United States

### **Kenro: A Virtual Machine Monitor Mostly Described in Haskell**

Yoshihiro Oyama, The University of Electro-Communications, Japan  
Yoshiki Kaneko, The University of Electro-Communications, Japan  
Hideya Iwasaki, The University of Electro-Communications, Japan

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## **(RE) Requirement Engineering**

### **Early Phase Requirements Assessment of a Teletreatment Trial**

I. Widya, University of Twente, Netherlands  
B.J.F. van Beijnum, University of Twente, Netherlands  
R. Bults, University of Twente, Netherlands  
V. Jones, University of Twente, Netherlands  
H. Hermens, University of Twente, Netherlands  
L. Sandsjö, University of Gothenburg, Sweden  
L. Schaake, Roessingh Research & Development, Netherlands  
M.H.A. Huis in 't Veld, Roessingh Research & Development, Netherlands

### **Architectural Requirements Prioritization and Analysis Applied to Software Technology Evaluation**

Karen Smiley, ABB Corporate Research, United States  
Qingfeng He, ABB Corporate Research, United States  
Elizabeth Kielczewski, ABB Corporate Research, United States  
Aldo Dagnino, ABB Corporate Research, United States

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### **A Systematic Method for Generating Quality Requirements Spectrum**

Shunichi Suzuki, Shinshu University, Japan  
Tomonori Sato, Shinshu University, Japan  
Masaaki Tanigawa, Shinshu University, Japan  
Akira Osada, Shinshu University, Japan  
Haruhiko Kaiya, Shinshu University, Japan  
Kenji Kaijiri, Shinshu University, Japan

### **Requirements Modelling and Evaluation for Digital Preservation: A COTS Selection Method based on Controlled Experimentation**

Christoph Becker, Vienna University of Technology, Austria  
Andreas Rauber, Vienna University of Technology, Austria

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### **(ROBOT) Intelligent Robotic Systems**

#### **A Nonlinear Mobile Robot Modeling Applied to a Model Predictive Controller**

André Scolari Conceição, Federal University of Ouro Preto, Brazil  
A. Paulo Moreira, University of Porto, Portugal  
Paulo Costa, University of Porto, Portugal

#### **Visual Navigation: Image Profiles for Odometry and Control**

Devin Smith, Harvey Mudd College, United States  
Zachary Dodds, Harvey Mudd College, United States

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### **(RTS) Real-Time Systems**

#### **Designing Reliable Real-Time Concurrent Object-Oriented Software Systems**

Alfredo Capozucca, LASSY-University of Luxembourg, Luxembourg  
Nicolas Guelfi, LASSY-University of Luxembourg, Luxembourg

#### **Designing a Multi-Core Hard Real-Time Test Bed for Energy Measurement Experiments**

Tongquan Wei, Michigan Tech University, United States  
Xiaodao Chen, Michigan Tech University, United States  
Piyush Mishra, Michigan Tech University, United States

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### **(SE) Software Engineering**

#### **A Consumer/Producer Approach to Risk-Driven Software Reliability and Testing**

Norman Schneidewind, Naval Postgraduate School, United States  
Mike Hinchey, Lero-the Irish Software Engineering Research Centre, Ireland

#### **Designing a Distributed AOP Runtime Composition Model**

Ruben Mondejar, Universitat Rovira i Virgili, Spain  
Pedro Garcia, Universitat Rovira i Virgili, Spain  
Carles Pairot, Universitat Rovira i Virgili, Spain  
Pascal Urso, Nancy-Université, INRIA, France  
Pascal Molli, Nancy-Université, INRIA, France

#### **An Approach to Detection of UML-Based Ownership Violation**

Hector Miguel Chavez, Western Michigan University, United States  
Wuwei Shen, Western Michigan University, United States  
Shaoying Liu, Hosei University, Japan

#### **An Extensible Source-Level Debugger**

Ziad Al-Sharif, University of Idaho, United States  
Clinton Jeffery, University of Idaho, United States

#### **A Property-Based Verification Approach in Aspect-Oriented Modeling**

Eunjee Song, Baylor University, United States  
Hanil Kim, Cheju National University, Korea  
Wuliang Sun, Baylor University, United States

### **The Visual Authoring Tool of Flash-Based Component for Interactive Item Template**

Chong-Shiuh Koong, National Taichung University, Taiwan  
Ching-Meng Lee, National Chiao Tung University, Taiwan  
Deng-Jyi Chen, National Chiao Tung University, Taiwan  
Chih-Hung Chang, Hsiuping Institute of Technology, Taiwan  
Chihhsiong Shih, Tunghai University, Taiwan

### **Abstraction of Multiple Executions of Object-Oriented Programs**

Chunying Zhao, University of Texas at Dallas, United States  
Kang Zhang, University of Texas at Dallas, United States  
Yu Lei, University of Texas at Dallas, United States

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### **(SIM) Advances in Computer Simulation**

#### **Simulating Business Processes with EPML-Sim**

Davide Rossi, University of Bologna, Italy  
Elisa Turrini, University of Bologna, Italy  
Fabio Vitali, University of Bologna, Italy

#### **Using Probabilistic Model Checking and Simulation for Designing Self-Organizing Systems**

Matteo Casadei, Università di Bologna, Italy  
Mirko Viroli, Università di Bologna, Italy

#### **Conceptualization and Implementation of a Microscopic Pedestrian Simulation Platform**

Edgar F. Esteves, LIACC-FEUP, Portugal  
Rosaldo J.F. Rossetti, LIACC-FEUP, Portugal  
Paulo A.F. Ferreira, LIACC-FEUP, Portugal  
Eugénio C. Oliveira, LIACC-FEUP, Portugal

#### **Precise Generalized Contact Point and Normal Determination for Rigid Body Simulation**

Dylan A. Shell, University of Southern California, United States  
Evan Drumwright, University of Memphis, United States

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### **(SOPDS) Self-Organization in Pervasive Distributed Systems**

#### **A Real Time Financial System based on Grid and Cloud Computing**

Francesco Maria Aymerich, University of Cagliari, Italy  
Gianni Fenu, University of Cagliari, Italy  
Simone Surcis, Cosmolab Consortium, Italy

#### **A Biochemical Metaphor for Developing Eternally Adaptive Service Ecosystems**

Mirko Viroli, Università di Bologna, Italy  
Matteo Casadei, Università di Bologna, Italy  
Sara Montagna, Università di Bologna, Italy  
Franco Zambonelli, Università di Modena e Reggio Emilia, Italy

#### **Decentralized Coordination of Homogeneous and Heterogeneous Agents by Digital Infochemicals**

Holger Kasinger, University of Augsburg, Germany  
Jörg Denzinger, University of Calgary, Canada  
Bernhard Bauer, University of Augsburg, Germany

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### **(TRECK) Trust, Reputation, Evidence and other Collaboration Know-how**

#### **Modeling and Analyzing Review Information on the Web Focusing on Credibility**

Takuya Kobayashi, Kyoto University, Japan  
Hiroaki Ohshima, Kyoto University, Japan  
Satoshi Oyama, Kyoto University, Japan  
Katsumi Tanaka, Kyoto University, Japan

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## **(WSN) Wireless Sensor Networks**

### **Integrating Standardized Transaction Protocols in Service-Oriented Wireless Sensor Networks**

Christoph Reinke, Institute of Information Systems, University of Lübeck, Germany  
Nils Hoeller, Institute of Information Systems, University of Lübeck, Germany  
Jana Neumann, Institute of Information Systems, University of Lübeck, Germany  
Sven Groppe, Institute of Information Systems, University of Lübeck, Germany  
Volker Linnemann, Institute of Information Systems, University of Lübeck, Germany  
Martin Lipphardt, Institute of Telematics, University of Lübeck, Germany

### **Towards Developing a Trust based Security Solution**

Sheikh I. Ahamed, Marquette University, United States  
Donghyun Kim, Marquette University, United States  
Chowdhury S. Hasan, Marquette University, United States  
Mohammad Zulkernine, Queen's University, Canada

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## **(WT) Web Technologies**

### **Designing of a System Model for Web 3D Disabled Access GIS on Web 2.0**

Shinobu Izumi, Kyushu Institute of Technology, Japan  
Toshihiro Uchibayashi, Kyushu Sangyo University, Japan  
Takaichi Yoshida, Kyushu Institute of Technology, Japan

### **Identifying Discourse Mistakes in Web Debates: Moderation in the DCC**

Cristiano Maciel, Universidade Federal do Mato Grosso, Brazil  
Pereira Vinicius Carvalho, UFRJ, Brazil  
Roque Licinio, UC, Portugal  
Bicharra Garcia Ana Cristina, UFF, Brazil

### **WebFlowAH: An Environment for Ad-Hoc Specification and Execution of Web Services-Based Processes**

Reginaldo Mendes, Federal University of Rio Grande do Norte, Brazil  
Paulo F. Pires, Federal University of Rio Grande do Norte, Brazil  
Flavia Delicato, Federal University of Rio Grande do Norte, Brazil  
Thais Batista, Federal University of Rio Grande do Norte, Brazil

### **An Approach for Semantic Web Services Automatic Discovery and Composition with Similarity Metrics**

Ivo Calado, Federal University of Campina Grande, Brazil  
Heitor Barros, Federal University of Alagoas, Brazil  
Ig Ibert Bittencourt, Federal University of Campina Grande & Federal University of Alagoas, Brazil  
Evandro Costa, Federal University of Alagoas, Brazil  
Elvys Soares, Federal University of Alagoas, Brazil  
Marlos Silva, Federal University of Alagoas, Brazil  
Marcelo Arruda, Federal University of Alagoas, Brazil  
Társis Toledo, Federal University of Alagoas, Brazil

## **SAC 2010 Invitation**

SAC 2010 will be held in Crans-Montana/Sierre, Switzerland, from March 21st to March 26th, 2010. It is hosted by the University of Applied Sciences Western Switzerland (HES-SO) Sierre, and Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland. Please check the registration desk for handouts. You can also visit the website at <http://www.acm.org/conferences/sac/sac2010/>.

We hence invite you to submit track proposals and technical papers, helping us in making SAC 2010 a very successful conference.