APPLIED COMPUTING 2011
The 26th Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2011 ACM SYMPOSIUM ON APPLIED COMPUTING

TaiChung, Taiwan
March 21-24, 2011

Organizing Committee

William Chu
W. Eric Wong
Mathew J. Palakal
Chih-Cheng Hung
Dongwan Shin

Jiman Hong
Chih-Hsiong Shih
Chao-Tung Yang
Hisham M. Haddad

Software Development
(CM, CSP, OOPS, PL, PSC, SE, SOAP, SVT)

Engineering
(DE, EE, MESC, OS, PADO, RE, RTS)

Information Systems
(DS, DTTA, IAR, MMV, SEC)

Distributed Systems
(CC, DADS, EMBS, MCA, NETS, WT)

Applications
(AB, APGCC, BIO, CF)

AI and Agents
(ASIIS, CISIA, DM, EC, GCR, ILE, ROBOT, SWA, TRECK)

Hosted by
Tunghai University, TaiChung, Taiwan
SAC 2011 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 2011 features one keynote speaker on Tuesday, from 9:00 to 10:40. The technical program of the symposium consists of 40 tracks on different research topics, which run from Tuesday March 22 through Thursday March 24, 2011. Regular oral presentation sessions start at 9:00 and end at 18:00 in five parallel sessions. In addition, two poster tracks also run on Wednesday March 23, from 9:40 to 12:40 and from 14:40 to 17:40.

Organizing Committee

Haydn H.D. Chen, *Horary chair*
Tunghai University, Taiwan

William Chu, *Symposium Chair*
Tunghai University, Taiwan

W. Eric Wong, *Symposium Vice-Chair*
University of Texas, USA

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Indiana University Purdue University, USA

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Dongwan Shin, *Publication Chair*  
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University Rey Juan Carlos Madrid, Spain

Sung Shin, Steering Committee Member  
South Dakota State University, USA

Roger L. Wainwright, Steering Committee Member  
University of Tulsa, USA

Track Chairs

**Volume I: Applications, Distributed Systems, and Engineering**

**Track Chairs (Co-Editors)**

*Applied Biometrics (AB)*
Jean Hennebert, University of Applied Sciences Western Switzerland, Switzerland
Andreas Humm, University of Fribourg, Switzerland

*Asian Perspective of Global and Collaborative Computing (APGCC)*
William C. Chu, Tunghai University, Taiwan
Chih-Hung Chang, Hsiuping Institute of Technology, Taiwan
Pao-Ann Hsiung, National Chung Cheng University, Taiwan

*Bioinformatics (BIO)*
Dan Tulpan, National Research Council of Canada, Canada
Paola Lecca, The Microsoft Research - University of Trento CoSBi, Italy
Kanagasabai Rajaraman, Institute for Infocomm Research, Singapore

*Cloud Computing (CC)*
Umesh Bellur, Indian Institute of Technology, Bombay, India
Rajiv Ramnath, Ohio State University, USA
Madhu Kumar, National Institute of Technology Calicut, India

*Computer Forensics (CF)*
Lorie Liebrock, New Mexico Institute of Mining and Technology, United States
Brajendra Panda, University of Arkansas, United States
Robert L. Hutchinson, Sandia National Laboratories, United States

*Dependable and Adaptive Distributed Systems (DADS)*
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<tr>
<th>Section</th>
<th>Authors</th>
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<tr>
<td>Document Engineering (DE)</td>
<td>Karl M. Goeschka, Vienna University of Technology, Austria</td>
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<td>Lorenz Froihofer, Vienna University of Technology, Austria</td>
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<td>Svein Hallsteinsen, Sintef, Norway</td>
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<td>Rui Oliveira, Universidade do Minho, Portugal</td>
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<td>Alexander Romanovsky, University of Newcastle, United Kingdom</td>
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<td>Rafael Lins, Universidade Federal de Pernambuco, Brazil</td>
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<td>Enterprise Engineering (EE)</td>
<td>Artur Caetano, IST, Technical University of Lisbon, Portugal</td>
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<td>Rogério Carvalho, IFF, Brazil</td>
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<td>Maria-Eugenia Iacob, University of Twente, Netherlands</td>
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<td>Cosimo Antonio Prete, University of Pisa, Italy</td>
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<td>Embedded Systems: Applications, solutions, and Techniques (EMBS)</td>
<td>Li-Pin Chang, National Chiao-Tung University, Taiwan</td>
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<td>Anzar Sunan, Qassim University</td>
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<td>Mobile Computing and Applications (MCA)</td>
<td>Hong Va Leong, Hong Kong Polytechnic University, Hong Kong</td>
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<td>Alvin Chan, Hong Kong Polytechnic University, Hong Kong</td>
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<td>Mediation Services in Computing Environments (MESC)</td>
<td>Rachid Anane, Coventry University, UK</td>
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<td>Behzad Bordbar, University of Birmingham, UK</td>
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<td>Guadalupe Ortiz, University of Cadiz, Spain</td>
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<td>Networking (NETS)</td>
<td>Mario Freire, University of Beira Interior, Portugal</td>
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<td>Marilãa Curado, University of Coimbra, Portugal</td>
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<td>Manuela Pereira, University of Beira Interior, Portugal</td>
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<td>Operating Systems (OS)</td>
<td>Jihun Hong, Soongsil University, Korea</td>
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<td>Tei-Wei Kuo, National Taiwan University, Taiwan</td>
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<td>Junyoung Heo, Hansung University, Korea</td>
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<td>Green/Power-Aware Design and Optimization (PADO)</td>
<td>Jian-Jia Chen, Karlsruhe Institute of Technology (KIT), Germany</td>
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<td>X. Sharon Hu, University of Notre Dame, United States</td>
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<td>Requirement Engineering (RE)</td>
<td>Rafael Lins, Universidade Federal de Pernambuco, Brazil</td>
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<td>Real-Time Systems (RTS)</td>
<td>Artur Caetano, IST, Technical University of Lisbon, Portugal</td>
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<td>Rogério Carvalho, IFF, Brazil</td>
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<td>Web Technologies (WT)</td>
<td>Maria-Eugenia Iacob, University of Twente, Netherlands</td>
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<td>Alessio Bechini, University of Pisa, Italy</td>
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<td>Volume II: Artificial Intelligence &amp; Agents, Information Systems, and Software Development</td>
<td>Jian-Jia Chen, Karlsruhe Institute of Technology (KIT), Germany</td>
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<td>X. Sharon Hu, University of Notre Dame, United States</td>
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<td>Advances in Spatial and Image-Based Information Systems (ASIS)</td>
<td>Richard Chbeir, University of Bourgogne, France</td>
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<td>Christophe Claramunt, Ecole Navale, Brest, France</td>
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<td>Kokou Yetongnon, University of Bourgogne, France</td>
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<td>Computational Intelligence and Image Analysis (CISIA)</td>
<td>Richard Chbeir, University of Bourgogne, France</td>
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<td>Christophe Claramunt, Ecole Navale, Brest, France</td>
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<td>Kokou Yetongnon, University of Bourgogne, France</td>
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<td>Coordination Models, Languages and Applications (CM)</td>
<td>Mario Freire, University of Beira Interior, Portugal</td>
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<td>Manuela Pereira, University of Beira Interior, Portugal</td>
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<td>Teresa Vazão, IST/INESC ID Lisboa, Portugal</td>
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<td>Data Mining (DM)</td>
<td>Eric Monfroy, UTFSM, Valparaiso, Chile and LINA, Nantes, France, Chile</td>
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<td>Stefano Bistarelli, Università di Perugia, Italy and IIT-CNR, Pisa, Italy</td>
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<td>Barry O’Sullivan, University College Cork, Ireland</td>
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Final Program Page 3 SAC 2011, March 21 – 24,
Hasan Jamil, Wayne State University, United States
Jian Pei, Simon Fraser University, Canada
Alfredo Cuzzocrea, University of Calabria, Italy

Data Streams (DS)
João Gama, LIAAD-University Porto, Portugal
Andre Carvalho, University of Sao Paulo, Brazil
Pedro Rodrigues, University Porto, Portugal
Shonali Krishnaswamy, Monash University, Australia

Database Theory, Technology, and Applications (DTTA)
Junping Sun, Nova Southeastern University, United States
Haraty Ramzi A., Lebanese American University, Lebanon
Apostolos Papadopoulos, Aristotle University, Greece

Applications of Evolutionary Computing (EC)
Federico Divina, Pablo de Olavide University, Spain
Raúl Giráldez Rojo, Pablo de Olavide University, Spain

Geometric Constraints and Reasoning (GCR)
Dominique Michelucci, CNRS, France
Robert Joan-Arinyo, UPC, Catalonia
Xiao-Shan Gao, Chinese Academy of Sciences, China

Information Access and Retrieval (IAR)
Gloria Bordogna, CNR, Italy
Gabriella Pasi, Univ. Milano Bicocca, Italy

Intelligent/Innovative Learning Environments (ILE)
Seiji Isotani, Carnegie Mellon University, USA
Ig I. Bittencourt, Federal University of Alagoas, Brazil
Jacqueline Bourdeau, UQAM, Canada
Riichiro Mizoguchi, Osaka University, Japan

Multimedia and Visualization (MMV)
Maria G. Pimentel, SCC/ICMC/USP, Brazil
Ethan V. Munson, University of Wisconsin-Milwaukee, United States

Object Oriented Programming Languages and Systems (OOPS)
Davide Ancona, Univ. of Genova, Italy
Shigeru Chiba, Tokyo Institute of Technology, Japan
Atsushi Igarashi, Kyoto University, Japan
Andy Kellens, Vrije Universiteit Brussel, Belgium

Programming Languages (PL)
Marjan Mernik, University of Maribor, Slovenia
Barrett Bryant, University of Alabama at Birmingham, United States

Programming for Separation of Concerns (PSC)
Emiliano Tramontana, University of Catania, Italy
Corrado Santoro, University of Catania, Italy
Yvonne Coady, University of Victoria, Canada

Intelligent Robotic Systems (ROBOT)
Denis Wolf, University of Sao Paulo, Brazil
Fernando S. Osorio, University of Sao Paulo, Brazil
Luiz Chaimowicz, Federal University of Minas Gerais, Brazil

Software Engineering (SE)
W. Eric Wong, UT-Dallas, United States
Chang Oan Sung, Indiana University Southeast, United States
John Kim, Utica College, United States

Computer Security (SEC)
Giampaolo Bella, Università di Catania, Italy
Helge Janicke, De Montfort University, United Kingdom
Alessandro Sorniotti, IBM Research Zurich, Switzerland

Service Oriented Architectures and Programming (SOAP)
Ivan Lanese, Università di Bologna, Italy
Manuel Mazzara, University of Newcastle, United Kingdom
Fabrizio Montesi, ItalianaSoftware, Italy
Software Verification and Testing (SVT)
Jan Cederquist, Instituto Superior Técnico / SQIG-IT, Portugal

Semantic Web and Its Applications (SWA)
Hyoil Han, LeMoyne-Owen College, United States

Trust, Reputation, Evidence and other Collaboration Know-How (TRECK)
Jean-Marc Seigneur, University of Geneva, Switzerland
Local support for SAC 2011 is provided by Tunghai University. Additional support was provided by the Taiwan National Science Council (NSC), Taiwan Ministry of Education, Taiwan Bureau of Foreign Trade and Hsiuping Institute of Technology. The SAC organizing committee acknowledges and thanks the local supporters for their generous contributions to SAC 2011. Their support has been essential to the success of the Symposium, and it is greatly appreciated.

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 applications 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 membership fees are: $15.00 for ACM Non-members, $15.00 for ACM Professional Members, and $8.00 for ACM Student Members. For further information on SIGAPP, please contact Sung Shin at Sung_Shin@sdsstate.edu or visit the SIGAPP website at http://www.acm.org/sigapp.

**Osium Chairs**

**William Chu**
*Tunghai University, Taiwan*

**W. Eric Wong**
*University of Texas, USA*

Welcome to ACM SAC 2011, The 26th Symposium on Applied Computing, and welcome to TaiChung, one of the five major metropolitan cities in Taiwan.

Following the tradition, SAC 2011 provides an international forum for applied computer scientists, computer engineers and application developers to interact and present their work. This year we have a very strong technical program. In addition to a keynote address, it also includes 237 rigorously refereed papers and 59 posters.

We would like to thank the ACM Special Interest Group on Applied Computing (SIGAPP) for being a sponsor of this conference and Tunghai University as a co-sponsor for making all the local arrangements. We have received additional funding from Taiwan National Science Council, Ministry of Education, Bureau of Foreign Trade Ministry of Economic Affairs, Hsiuping Institute of Technology and Tunghai University. Special thanks go to many individuals who have contributed to the success of this conference. We thank the authors for sharing their ideas with us, the reviewers for providing valuable feedback, all the track chairs, as well as steering committee and program committee members, especially the two Program co-Chairs: Professor Chi-Cheng Hung from Southern Polytechnic State, and Professor Mathew Palatal from IUPUI, for taking time from their busy
schedules to help us organize this conference. Thank you also to Professor Hisham Haddad (Member of Steering Committee and Treasurer of SAC 2011) and Professor Sung Shin (Chair of ACM SIGAPP) for their invaluable support, Professor Chih-Hsiong Shih (Tunghai University, Taiwan) for serving as the Tutorial Chair, Professor Chao-Tung Yang (Tunghai University, Taiwan) as the Local Arrangement Chair, Professor Jiman Hong (Soongsil University, Korea) as the Poster Chair, and Professor Dongwan Shin (New Mexico Tech) as the Publication Chair. We also thank all the student volunteers for assisting with registration and many other logistics without which it would be difficult, if not impossible, to proceed.

Thank you for attending SAC 2011. We hope that you enjoy the program and have a pleasant stay at Tunghai University which has one of the most beautiful college campuses in Taiwan.

Message from the Program Chairs

Mathew J. Palakal
Indiana University Purdue University, Indianapolis, USA

Chih-Cheng Hung
Southern Polytechnic State University, Marietta, USA

Welcome to the 26th International Symposium on Applied Computing (SAC 2011). For the past 25 years, SAC has become a major international venue for computing researchers and applied practitioners to convene and share ideas on recent developments in a variety of applied areas of Information Technology. The success of SAC has been the consolidation of a wide range of applied areas into specialized modules called Tracks. Each of the Tracks are then organized and administered by experts in the respective areas by instituting program committees, carrying out blind reviews according to the ACM guidelines, and finally selecting the highly qualified papers for the Track. Since its inception seven years ago, the Poster Sessions at SAC have become a tradition, and this year again the Poster will be an integral part of the Technical Program at SAC 2011.

The open Call for Track Proposals and after prescreening the proposals, 40 Tracks were finally accepted for SAC 2011. The prescreening and selections were made based on the success of those Tracks in the previous SACs as well as targeting new and emerging areas. The Call for Papers for these Tracks attracted 790 final paper submissions from 35 different countries. The submitted papers underwent the blind review process and 237 papers were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2011 is 30% for the overall track. In addition to the accepted full papers, 59 papers that received high enough review scores were accepted as short papers for the Poster Program.

The Technical Program Organization of SAC 2011 is made possible through the hard work of many people from the scientific community who have volunteered and committed many hours to make it a success. Much credit goes to all the Track Chairs for making SAC 2011 Technical Sessions a huge success. Some of the popular Tracks had an unprecedented submissions and having three blind reviews for each paper was certainly a major challenge. Once again this year, we follow the previous years’ tradition of organizing various tracks into six different themes. The Symposium Proceedings and the technical presentations are focused around these themes to form a series of related track sessions.

On behalf of the entire SAC 2011 Organizing Committee, we congratulate all the authors for having their papers accepted in their respective Tracks, and we wish to thank all of those who made this year’s technical program a huge success. Specifically we wish to thank the speakers, track chairs, reviewers, program committee members, session chairs, presenters, and all the attendees. We also wish to convey our special thanks to the local organizing committee lead by William Chu from Tunghai University, Taichung, Taiwan.

We wish you all a pleasant stay in Taichung, hope you have a great time at SAC 2011, and you will have the opportunity to share and exchange your ideas and foster new collaborations. We would also like to take this opportunity to convey to you the news that the 27th International Symposium on Applied Computing (SAC 2012) will be held in Trento, Italy. We hope to see you all and your colleagues at SAC 2012.

SAC 2011 Themes

This year SAC tracks are divided into six themes: related themes will be associated to one room, hence related tracks will take place sequentially in the same room in most cases, so as to promote sharing and cross-fertilization of ideas through the whole audience of a theme. Check the program schedule at
The six themes of SAC 2011 are listed below:

**(APP) Applications:** Tracks: AB, APGCC, BIO, CF

**(ENG) Engineering:** Tracks: DE, EE, MESC, OS, PAD, RE, RTS

**(DS) Distributed Systems:** Tracks: CC, DADS, EMBS, MCA, NETS, WT

**(AIA) AI and Agents:** Tracks: ASIIS, CIA, DM, EC, GCR, ILE, ROBOT, SWA, TRECK

**(IS) Information Systems:** Tracks: DS, DTTA, IAR, MMV, SEC

**(SWD) Software Development:** Tracks: CM, CSP, OOPS, PL, PSC, SE, SOAP, SVT

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### Keynote Speakers

**Time:** Tuesday March 22, 2011  9:00 - 10:40AM  
**Presentation Title:** Mining Information Networks  
**Speaker:** Professor Philip S. Yu

Wexler Chair in Information and Technology,  
Department of Computer Science  
University of Illinois at Chicago  
Chicago, IL 60607 USA  
E-mail: psyu@cs.uic.edu  
Web: http://www.cs.uic.edu/PSYu/

**Abstract**

With the ubiquity of information networks and their broad applications, there have been numerous studies on the construction, online analytical processing, and mining of information networks in multiple disciplines, including social network analysis, World-Wide Web, database systems, data mining, machine learning, and networked communication and information systems. Moreover, with a great demand of research in this direction, there is a need to understand methods for analysis of information networks from multiple disciplines. In this talk, we will present various issues and solutions on scalable mining of information networks. These include data integration, data cleaning and data validation in information networks, summarization, OLAP and multidimensional analysis in information networks.

**Speaker's Bio**

Philip S. Yu's main research interests include data mining, privacy preserving publishing and mining, data streams, database systems, Internet applications and technologies, multimedia systems, parallel and distributed processing, and performance modeling. He is a Professor in the Department of Computer Science at the University of Illinois at Chicago and also holds the Wexler Chair in Information and Technology. He was manager of the Software Tools and Techniques group at the IBM Thomas J. Watson Research Center. Dr. Yu has published more than 500 papers in refereed journals and conferences. He holds or has applied for more than 300 US patents.

Dr. Yu is a Fellow of the ACM and of the IEEE. He is associate editors of ACM Transactions on the Internet Technology and ACM Transactions on Knowledge Discovery from Data. He is on the steering committee of IEEE Conference on Data Mining and was a member of the IEEE Data Engineering steering committee. He was the Editor-in-Chief of IEEE Transactions on Knowledge and Data Engineering (2001-2004), an editor, advisory board member and also a guest co-editor of the special issue on mining of databases. He had also served as an associate editor of Knowledge and Information Systems. In addition to serving as program committee member on various conferences, he was the program chair or co-chairs of the IEEE Workshop of Scalable Stream Processing Systems (SSPS'07), the IEEE Workshop on Mining Evolving and Streaming Data (2006), the 2006 joint conferences of the 8th IEEE Conference on E-Commerce Technology (CEC' 06) and the 3rd IEEE Conference on Enterprise Computing, E-Commerce and E-Services (EEE' 06), the 11th IEEE Intl. Conference on Data Engineering, the 6th Pacific Area Conference on Knowledge Discovery and Data Mining, the 9th ACM SIGMOD Workshop on Research Issues in Data Mining and Knowledge Discovery, the 2nd IEEE Intl. Workshop on Research Issues on Data Engineering: Transaction and Query Processing, the PAKDD Workshop on Knowledge Discovery from Advanced Databases, and the 2nd IEEE Intl. Workshop on Advanced Issues of E-Commerce and Web-based Information Systems. He served as the general chair or co-chairs of the 2006 ACM Conference on Information and Knowledge Management, the 14th IEEE Intl. Conference on Data Engineering, and the 2nd IEEE Intl. Conference on Data Mining. He had received several IBM honors including 2 IBM Outstanding Innovation Awards, an
Outstanding Technical Achievement Award, 2 Research Division Awards and the 93rd plateau of Invention Achievement Awards. He was an IBM Master Inventor. Dr. Yu received a Research Contributions Award from IEEE Intl. Conference on Data Mining in 2003 and also an IEEE Region 1 Award for "promoting and perpetuating numerous new electrical engineering concepts" in 1999.

Dr. Yu received the B.S. Degree in E.E. from National Taiwan University, the M.S. and Ph.D. degrees in E.E. from Stanford University, and the M.B.A. degree from New York University.

SIGAPP Annual Business Meeting: Monday March 21, from 17:00 to 18:30 in Room H121. Open to everyone.

SAC Reception: Tuesday March 21, from 18:30 to 20:30 in Lunch area level 1. Open for all registered attendees.

SAC General Luncheon: Tuesday to Thursday (March 22 – 24), from 12:50 to 2:10. Lunch area level 1. Open for all registered attendees.

Future SAC Organization Meeting: Tuesday March 22, from 17:00 to 18:30 in Room H121. Open for SAC Organizing Committee members.

Track Chairs Business Meeting: Wednesday March 23, from 18:15 to 19:15 in Room H121. Open for SAC Organizing Committee members and Track Chairs.


SAC Best Papers Award: Wednesday March 23. During the SAC Banquet SAC Program Chairs will award one best paper for each of the six themes and posters of this conference.
An Empirical Study on the Usage of Testability Information to Fault Localization in Software
Alberto Gonzalez-Sanchez, Delft University of Technology, Netherlands
Rui Abreu, University of Porto, Portugal
Hans-Gerhard Gross, Delft University of Technology, Netherlands
Arjan J. C. van Gemund, Delft University of Technology, Netherlands

Locating Faults Using Multiple Spectra-Specific Models
Kai Yu, Beihang University, China
Mengxiang Lin, Beihang University, China
Qing Gao, Beihang University, China
Xiangyu Zhang, Beihang University, China

IMPULSE: a Design Framework for Multi-agent Systems Based on Model Transformation
Hiroyuki Nakagawa, The University of Electro-Communications, Japan
Nobukazu Yoshioka, National Institute of Informatics, Japan
Akihiko Ohsuga, The University of Electro-Communications, Japan
Shinichi Honiden, National Institute of Informatics, Japan

Using a Class Abstraction Technique to Predict Faults in OO Classes
Djuradj Babich, School of Computing and Information Sciences, Florida International University, United States
Peter J. Clarke, School of Computing and Information Sciences, Florida International University, United States
James P. Power, Department of Computer Science, National University of Ireland, Maynooth, Ireland
B. M. Golam Kibria, Department of Mathematics & Statistics, Florida International University, United States

TUE 11:10 – 1:10 ROOM H103

Development Support for QoS-Aware Service Adaptation in Ubiquitous Computing Applications
Kurt Geihs, University of Kassel, Germany
Christoph Evers, University of Kassel, Germany
Roland Reichle, University of Kassel, Germany
Michael Wagner, University of Kassel, Germany
Mohammad U. Khan, NTNU Trondheim, Norway

TUE 11:10 – 12:50 ROOM H123

Entropy based Feature Selection for Text Categorization
Christine Largeron, Hubert Curien Laboratory, France
Mathias Géry, Hubert Curien Laboratory, France

Semantic Event Detection in Baseball Videos Based on a Multi-output Hidden Markov Model
Yin-Fu Huang, National Yunlin University of Science and Technology, Taiwan
Jyun-Jhang Huang, National Yunlin University of Science and Technology, Taiwan

Construction of a Blog Network Based on Information Diffusion
Seung-Hwan Lim, Hanyang University, Korea
Sang-Wook Kim, Hanyang University, Korea
Sooyun Kim, Hanyang University, Korea
Sanghyun Park, Yonsei University, Korea

Mining Interlacing Manifolds in High Dimensional Spaces
Tao Ban, National Institute of Information and Communications Technology, Japan

Frequent Itemset Mining of Uncertain Data Streams Using the Damped Window Model
Carson K. Leung, The University of Manitoba, Canada
Fan Ji, The University of Manitoba, Canada

TUE 11:10 – 1:10 ROOM H103
(DADS) Dependable and Adaptive Distributed Systems
Session Chair: Stefan Brüggemann, OFFIS - Institute for Information Technology, Germany

Development Support for QoS-Aware Service Adaptation in Ubiquitous Computing Applications
Kurt Geihs, University of Kassel, Germany
Christoph Evers, University of Kassel, Germany
Roland Reichle, University of Kassel, Germany
Michael Wagner, University of Kassel, Germany
Mohammad U. Khan, NTNU Trondheim, Norway

Transparent Componentisation: High-level (Re)configurable Programming for Evolving Distributed Systems
Shen Lin, Lancaster University, United Kingdom
Francois Taiani, Lancaster University, United Kingdom
Marin Bertier, INRIA/IRISA, Rennes, France
Gordon Blair, Lancaster University, United Kingdom
Anne-Marie Kermarrec, INRIA/IRISA, Rennes, France

Root-cause Analysis of Performance Anomalies in Web-based Applications
João Magalhães, CIICESI, ESTG/F, Porto Polytechnic Institute, Portugal
Luis Silva, CISUC, University of Coimbra, Portugal

AdaptStream: Towards Achieving Fluidity in Adaptive Stream-Based Systems
Yu Liu, Trinity College Dublin, Ireland
René Meier, Trinity College Dublin, Ireland

Identifying the Provenance of Correlated Anomalies
Dawood Tarig, SRI, United States
Basim Baig, SRI, United States
Ashish Gehani, SRI, United States
Salman Mahmood, LUMS, Pakistan
Rashid Tahir, LUMS, Pakistan
Azeem Agil, LUMS, Pakistan
Fareed Zaffar, LUMS, Pakistan

Robustness of Automotive Applications Using Reflective Computing: Lessons learnt
Jean-Charles Fehre, LAAS-CNRS, Université de Toulouse, France
Marc-Olivier Killijian, LAAS-CNRS, Université de Toulouse, France
Francois Taiani, Lancaster University, United Kingdom
**Loop Fusion and Reordering for Register File Optimization on Stream Processors**
Wanyong Tian, University of Science and Technology of China, China
Chun Jason Xue, Department of Computer Science, City University of Hong Kong, China
Minming Li, Department of Computer Science, City University of Hong Kong, China
Enhong Chen, University of Science and Technology of China, China

**Fault Tolerant Framework and Techniques for Component-Based Autonomous Robot Systems**
Heejune Ahn, Seoul National Univ. of Science and Technology, Korea
Sung Chul Ahn, IMRC, KIST, Korea
Junyoung Heo, Hansung University, Korea
Sung Y. Shin, South Dakota State Univ, United States

**Optimizing Virtual Machines Using Hybrid Virtualization**
Jun Nakajima, Intel Open Source Technology Center, China
Qian Lin, Shanghai Jiao Tong University, China
Sheng Yang, Intel Open Source Technology Center, China
Min Zhu, Shanghai Jiao Tong University, China
Shang Guo, Shanghai Jiao Tong University, China
Mingyuanc Xia, Shanghai Jiao Tong University, China
Peijie Yu, Shanghai Jiao Tong University, China
Yaouu Dong, Intel Open Source Technology Center, China
Zhengwei Qi, Shanghai Jiao Tong University, China
Kai Chen, Shanghai Jiao Tong University, China
Haibing Guan, Shanghai Jiao Tong University, China
Xiang Chen, Nanjing University, China
Wanzhi Wen, Southeast University, China

Towards Thresholds of Control Flow Complexity
Measures for BPMN models
Laura Sánchez-González, University of Castilla La Mancha, Paseo de la Universidad, Spain
Francisco Ruiz, University of Castilla La Mancha, Paseo de la Universidad, Spain
Félix García, University of Castilla La Mancha, Paseo de la Universidad, Spain
Jorge Cardoso, Dept. Engenharia Informática, University of Coimbra, Portugal

An Empirical Study on the Effectiveness of Time-Aware Test Case Prioritization Techniques
Dongjiang You, Software Institute, Nanjing University, China
Zhenyu Chen, Software Institute, Nanjing University, China
Baowen Xu, Department of Computer Science, Nanjing University, China
Bin Luo, Software Institute, Nanjing University, China
Chen Zhang, Software Institute, Nanjing University, China

TUE 2:10 – 3:50 Room H103

(MCA-1) Mobile Computing and Applications
Session Chair: Sheikh Ahamed, Marquette University, USA

iDetective: A Persuasive Application to Motivate Healthier Behavior Using Smart Phone
Hiroaki Kimura, Waseda University, Japan
Jun Ehsui, Waseda University, Japan
Yoshio Funabashi, Waseda University, Japan
Akihito Yoshii, Waseda University, Japan
Tatsuo Nakajima, Waseda University, Japan

A Context-Aware Audio Presentation Method in Wearable Computing
Shinichi Yataka, Kobe University, Japan
Kohei Tanaka, Mitsubishi Electric Corporation, Japan
Tsutomu Terada, Kobe University and Japan Science and Technology Agency, Japan
Masahiko Tsukamoto, Kobe University, Japan

Analyzing Different Levels of Geographic Context Awareness in Agent Frenzying over VANETs
Edison Pigatnot de Freitas, Halmstad University, Sweden
Tales Heimfarth, Federal University of Lavras, Brazil
Luiz Augusto Guimarães Costa, Federal University of Lavras, Brazil
Armando Morado Ferreira, Military Institute of Engineering, Brazil
Carlos Eduardo Pereira, Federal University of Rio Grande do Sul, Brazil
Flávio Rech Wagner, Federal University of Rio Grande do Sul, Brazil
Tony Larsson, Halmstad University, Sweden

A Probabilistic Context-Aware Approach for Quality of Experience Measurement in Pervasive Systems
Karan Mitra, Monash University, Australia
Arkady Zaslavsky, Luleå University of Technology, Sweden
Christer Ahlund, Luleå University of Technology, Sweden

TUE 2:10 – 3:50 Room H123

(DM-2) Data Mining
Session Chair: Hasan Jamil, Wayne State University, United States

RuleGrowth: Mining Sequential Rules Common to Several Sequences by Pattern-Growth
Philippe Fournier-Viger, University of Quebec in Montreal, Canada
Roger Nkambou, University of Quebec in Montreal, Canada
Vincent Shin-Mu Tseng, National Cheng Kung University, Taiwan

Target-Based Privacy Preserving Association Rule Mining
Madhu Ahlawat, UMBC, United States
Aryya Gangopadhyay, UMBC, United States
Zhiyuan Chen, UMBC, United States
Yelena Yesha, UMBC, United States

Aspect-based Extractive Summarization of Online Reviews
Xueke Xu, Institute of Computing Technology, Chinese Academy of Sciences, China
Meng Tao, Institute of Computing Technology, Chinese Academy of Sciences, China
Xueqi Cheng, Institute of Computing Technology, Chinese Academy of Sciences, China

ClustCube: An OLAP-based Framework for Clustering and Mining Complex Database Objects
Alfredo Cuzzocrea, ICAR-CNR and University of Calabria, Italy
Paolo Serafini, DEIB Dept., University of Calabria, Italy

Using Commutative Encryption for Privacy Preserving Distributed Association Rules Mining
Moez Waddey, Faculty of Science of Tunis, Tunisia
Tarek Hamrouni, Faculty of Science of Tunis, Tunisia
Sadok Ben Yahia, Faculty of Science of Tunis, Tunisia

TUE 2:10 – 3:50 Room H104

(SEC-2) Computer Security
Session Chair: Helge Janicke, De Montfort University, United Kingdom

Reliable Protection Against Session Fixation Attacks
Martin Johns, SAP Research, Germany
Bastian Braun, University of Passau, Germany
Michael Schrank, University of Passau, Germany
Joachim Posegga, University of Passau, Germany

High-speed Web Attack Detection through Extracting Exemplars from HTTP Traffic
Wei Wang, Interdisciplinary Centre for Security and Trust, University of Luxembourg, Luxembourg
Xiangliang Zhang, Division of MGSE, KAUST, Saudi Arabia
**TUE 2:10 – 3:50 ROOM H105**

**OS-2) Operating Systems**

*Session Chair*: Gwangil Jeon, Korea Polytechnic University, Korea

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**Virtualizing System and Ordinary Services in Windows-based OS Level Virtual Machines**

Zhiyong Shan, Stony Brook University, Renmin University of China, United States
Tat-cker Chiuhe, Stony Brook University, United States
Xia Wang, Stony Brook University, United States

**Power Consumption Scheduling for Peak Load Reduction in Smart Grid Homes**

Junghoon Lee, Jeju National University, Korea
Gyung-Leen Park, Jeju National University, Korea
Sang-Wook Kim, Hanyang University, Korea
Hye-Jin Kim, Jeju National University, Korea
Chang Oa Sung, Indiana University Southeast, United States

**LSTAFF**: An Efficient Flash Translation Layer for Large Block Flash Memory

Tae-Sun Chung, Ajou University, Korea
Dong-Joo Park, Soongsil University, Korea
Jongik Kim, Chonbuk National University, Korea

**Migration Based Page Caching Algorithm for a Hybrid Main Memory of DRAM and PRAM**

Hyunchul Seok, KAIST, Korea
Youngwoo Park, KAIST, Korea
Ky Ho Park, KAIST, Korea

**A Data De-duplication Access Framework for Solid State Drives**

Chin-Hsien Wu, National Taiwan University of Science and Technology, Taiwan
Hau-Shan Wu, National Taiwan University of Science and Technology, Taiwan

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**TUE 4:20 – 6:00 ROOM H122**

**SE-3) Software Engineering**

*Session Chair*: John Kim, Utica College, United States

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**A Test Suite Reduction Approach Based on Pairwise Interaction of Requirements**

Xiang Chen, Nanjing University, China
Lijiu Zhang, Nanjing University, China
Qing Gu, Nanjing University, China
Haigang Zhao, Nanjing University, China
Ziyuan Wang, Nanjing University, China
Xiaohing Sun, Southeast University, China
Daoxu Chen, Nanjing University, China

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**Identifying Properties of UML State Machine Diagrams that Affect Data and Control Dependence**

HyeongJung Kim, Korea Advanced Institute of Science and Technology, Korea
Vidroha Debroy, University of Texas at Dallas, United States
DooHwan Bae, Korea Advanced Institute of Science and Technology, Korea

**A Semantically Rich Approach for Collaborative Model Edition**

Jonathan Michaux, LIP6, France
Xavier Blanc, Université de Bordeaux, France
Marc Shapiro, LIP6 & INRIA, France
Pierre Sutra, LIP6, France

**On-line Scheduling of Real-Time Services with Profit and Penalty**

Shuo Liu, Florida International University, United States
Gang Guan, Florida International University, United States
Shangping Ren, Illinois Institute of Technology, United States

**Testing a Binary Space Partitioning Algorithm with Metamorphic Testing**

Fei-Ching Kuo, Swinburne University of Technology, Australia
Shuang Liu, Swinburne University of Technology, Australia
T. Y. Chen, Swinburne University of Technology, Australia

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**TUE 4:20 – 6:00 ROOM H123**

**GCR) Geometric Constraints and Reasoning**

*Session Chair*: Dominique Michelucci, CNRS, France

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**Well-constrained Completion for Under-constrained Geometric Constraint Problem Based on Connectivity Analysis of Graph**

Gui-Fang Zhang, Beijing Forestry University, China

**A Particle-Spring Approach to Geometric Constraints Solving**

Simon E.B. Thierry, Université de Strasbourg, France
**Origami Axioms and Circle Extension**
Asem Kasem, University of Tsukuba, Japan  
Fadous Ghourabi, University of Tsukuba, Japan  
Tetsuo Ida, University of Tsukuba, Japan

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**TUE 4:20 – 6:00 ROOM H103**

(MCA-2) Mobile Computing and Applications  
Session Chair: Alvin Chan, The Hong Kong Polytechnic University, Hong Kong

**Flocks: Enabling Dynamic Group Interactions in Mobile Social Networking Applications**
Elisa Gonzalez Boix, Vrije Universiteit Brussel, Belgium  
Andoni Lombide Carreton, Vrije Universiteit Brussel, Belgium  
Christophe Scholliers, Vrije Universiteit Brussel, Belgium  
Tom Van Cutsem, Vrije Universiteit Brussel, Belgium  
Wolfgang De Meuter, Vrije Universiteit Brussel, Belgium  
Theo D'Hondt, Vrije Universiteit Brussel, Belgium

**Towards Communication-Efficient Private Location Dependent Queries**
Keng-Fei Lin, National Taiwan University, Taiwan  
Ming-Syan Chen, National Taiwan University, Taiwan

**REBIVE: A Reliable Private Data Aggregation Scheme for Wireless Sensor Networks**
Farzana Rahman, Marquette University, United States  
MD. Endadul Hoque, Marquette University, United States  
Sheikh Ahamed, Marquette University, United States

**Transmission Reduction between Mobile Phone Applications and RESTful APIs**
Chin-Liang Tsai, National Chiao Tung University, Taiwan  
Hsiao-Wen Chen, National Chiao Tung University, Taiwan  
Jiun-Long Huang, National Chiao Tung University, Taiwan  
Chih-Lin Hu, National Central University, Taiwan

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**TUE 4:20 – 6:00 ROOM H104**

(DS) Data Streams  
Session Chair: João Gama, LIAAD-University Porto, Portugal

**Incremental Multi-Target Model Trees for Data Streams**
Elena Ikonomovska, Jozef Stefan Institute, Slovenia  
Joao Gama, LIAAD-INESC Porto, Portugal  
Saso Dzeroski, Jozef Stefan Institute, Slovenia

**Learning Recurring Concepts from Data Streams with a Context-aware Ensemble**
João Bártilo Gomes, FI-UPM, Spain  
Ernestina Menasalvas, FI-UPM, Spain  
Pedro Sousa, FCT-UNL, Portugal

**Secure Shared Continuous Query Processing**
Raman Adaikkalavan, Indiana University South Bend, United States  
Thomas Perez, Indiana University South Bend, United States

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**L2GClust: Local-to-Global Clustering of Stream Sources**
Pedro Pereira Rodrigues, University of Porto, Portugal  
Joao Gama, University of Porto, Portugal  
Joao Araujo, University of Porto, Portugal  
Luis Lopes, University of Porto, Portugal

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**TUE 4:20 – 6:00 ROOM H105**

(OS-3) Operating Systems  
Session Chair: Chaedeok Lim, ETRI, Korea

**An Open-System Framework for Flash-Memory Storage System**
Jen-Wei Hsieh, National Taiwan University of Science and Technology, Taiwan  
Shang-Yang Chang, National Taiwan University of Science and Technology, Taiwan

**Adaptive Link Recovery Scheme for Structured Peer-to-peer Networks under Churn**
Seokhyun Kim, Seoul National University, Korea  
Geunyoung Park, Seoul National University, Korea  
Jiming Hong, Soongsil University, Korea  
Yookun Cho, Seoul National University, Korea

**Supporting Dynamic Update and Resource Protection in an Embedded Operating System**
Mei-Ling Chiang, Department of Information Management, National Chi-Nan University, Taiwan  
Hsiang-Yu Hsu, Department of Information Management, National Chi-Nan University, Taiwan
Wednesday March 23, 2010

**WED 9:40–12:40**  
**CORRIDOR LEVEL 2, HUMANITIES BUILDING (H)**  
**Poster Session I**

Posters of the following Tracks: **AB, APGCC, BIO, CF, CISIA, DADS, DS, MCA, EMBS, OS, PADO, RTS, SWA, WT** (see the detailed list of Posters on Page 36-37).

**WED 9:00 – 10:40**  
**ROOM H122**  
**(PL) Programming Languages**  
**Session Chair:** Marjan Mernik, University of Maribor, Slovenia

- **Relating Function Spaces to Resourced Function Spaces**  
  Lídia Sánchez-Gil, Universidad Complutense de Madrid, Spain  
  Mercedes Hidalgo-Herrero, Universidad Complutense de Madrid, Spain  
  Yolanda Ortega-Mallén, Universidad Complutense de Madrid, Spain

- **Incremental Concrete Syntax for Embedded Languages**  
  Tom Dinkelaker, TU Darmstadt, Germany  
  Michael Eichberg, TU Darmstadt, Germany  
  Mira Mezini, TU Darmstadt, Germany

- **Large-scale, AST-based API-usage Analysis of Open-source Java projects**  
  Ralf Lämmel, Universität Koblenz-Landau, Germany  
  Ekaterina Pek, Universität Koblenz-Landau, Germany  
  Jürgen Starek, Universität Koblenz-Landau, Germany

- **Core Operational Semantics of Proto**  
  Mirko Viroli, Università di Bologna, Italy  
  Jacob Beal, BBN Technologies, United States  
  Matteo Cascade, Università di Bologna, Italy

- **A Domain-Specific Language for Managing Feature Models**  
  Mathieu Acher, University of Nice Sophia Antipolis, France  
  Philippe Collet, University of Nice Sophia Antipolis, France  
  Philippe Lahire, University of Nice Sophia Antipolis, France  
  Robert France, Colorado State University, United States

**WED 9:00 – 10:40**  
**ROOM H123**  
**(ILE-1) Intelligent/Innovative Learning Environments**  
**Session Chair:** Seiji Isotani, Carnegie Mellon University, USA

- **Positioning a Virtual Teacher in an MR Physical Task Learning Support System**  
  Mamoun Nawahdah, Information and Media Studies, University of Tsukuba, Japan  
  Tomoo Inoue, Information and Media Studies, University of Tsukuba, Japan

- **An Agent-Based Architecture for Supporting the Workgroups Creation and the Detection of Out-of-context Conversation on Problem-Based Learning in Virtual Learning Environments**  
  Layssa Mabel de Oliveira Fontes, Rural Federal University of the Seminari, Brazil  
  Francisco Milton Mendes Neto, Rural Federal University of the Seminari, Brazil  
  Alexandre Ádames Alves Pontes, Rural Federal University of the Seminari, Brazil  
  Gustavo Augusto de Lima Campos, State University of Ceará, Brazil

- **A Cognition-Based Interactive Game Platform for Learning Chinese Characters**  
  Chao-Lin Liu, National Chengchi University, Taiwan  
  Chia-Ying Lee, Academia Sinica, Taiwan  
  Jie-Li Tsai, National Chengchi University, Taiwan  
  Chia-Ling Lee, National Chengchi University, Taiwan

- **A Solution for Personalized T-Learning Applications Integrated with a Web Educational Platform**  
  Douglas Véras, Federal University of Alagoas, Brazil  
  Ig Bittencourt, Federal University of Alagoas, Brazil  
  Heitor Barros, Federal University of Alagoas, Brazil  
  Marlos Silva, Federal University of Alagoas, Brazil  
  Evandro Costa, Federal University of Alagoas, Brazil

- **Leveraging the Dynamics of Learning by Modeling and Managing Psychosocial Relations and Behavior by Means of Game Theory and Memetics**  
  Jairo Celso Simões, Universidade Presbiteriana Mackenzie, Brazil  
  Nizam Omar, Universidade Presbiteriana Mackenzie, Brazil

- **Style Avatar: a Visualization System for Teaching C Coding Style**  
  Eun-Kyung Kim, Pusan National University, Republic of Korea  
  Jeonghoon Ji, Pusan National University, Republic of Korea  
  Yur-Jung Lee, Pusan National University, Republic of Korea  
  Gyun Woo, Pusan National University, Republic of Korea

**WED 9:00 – 10:40**  
**ROOM H103**  
**(NETS-1) Networking**  
**Session Chair:** Prasanthi S, Pusan National University, Korea
A Hough-transform-based Anomaly Detector with an Adaptive Time Interval
Romain Fontugne, The Graduate University for Advanced Studies, Japan
Kensuke Fukuda, The National Institute of Informatics, Japan

Modeling the Dynamics of Caching in Content-based Publish/Subscribe Systems
Vassilis Sourlas, University of Thessaly, Greece. CERTH-ITI, Greece
Georgios S. Paschos, University of Thessaly, Greece. CERTH-ITI, Greece
Petteri Mannersalo, VTT Technical Research Center of Finland, Finland
Paris Flegkas, University of Thessaly, Greece. CERTH-ITI, Greece
Leandros Tassiulas, University of Thessaly, Greece. CERTH-ITI, Greece

Novel Processor Architecture For Modified Advanced Routing in NGN
Marija Kalendar, Faculty of Electrical Engineering and Information Technologies, Sr. Cyril and Methodius University, Republic of Macedonia
Danijela Jakimovska, Faculty of Electrical Engineering and Information Technologies, Sr. Cyril and Methodius University, Republic of Macedonia
Aristotel Tentov, Faculty of Electrical Engineering and Information Technologies, Sr. Cyril and Methodius University, Republic of Macedonia
Goce Dekoski, Seavus, R. Macedonia, Republic of Macedonia

Policy-driven Network Simulation: a Resilience Case Study
Alberto Schaeffer-Filho, Lancaster University, United Kingdom
Paul Smith, Lancaster University, United Kingdom
Andrew Muthe, Lancaster University, United Kingdom

WED 9:00 – 10:40 ROOM H105

WED 9:00 – 10:40 ROOM H104

(MMV-1) Multimedia and Visualization
Session Chair: Ethan Munson, University of Wisconsin-Milwaukee, United States

Improving 3D Navigation in Multiscale Environments Using Cubemap-based Techniques
Daniel Ribeiro Trindade, Pontifical Catholic University of Rio de Janeiro, Brazil
Alberto Barbosa Raposo, Pontifical Catholic University of Rio de Janeiro, Brazil

MusCat: A Music Browser Featuring Abstract Pictures and Zooming User Interface
Kaori Kusama, Ochanomizu University, Japan
Takayuki Itoh, Ochanomizu University, Japan

A Web-based Photo Management System for Large Photo Collections with User-Customizable Quality Assessment
Dong-Sung Ryu, Pusan National University, Korea
Kwang Hwi Kim, Pusan National University, Korea
Sun-Young Park Park, Pusan National University, Korea
Hwan-Gue Cho, Pusan National University, Korea

Composition of HCI Evaluation Methods for Hybrid Virtual Environments
Marcus Alencar, Teegraf/PUC-Rio, Brazil
Alberto Raposo, Teegraf/PUC-Rio, Brazil
Simone Barbosa, PUC-Rio, Brazil

WED 9:00 – 10:40 ROOM H105

(RE-1) Requirements Engineering
Session Chair: Maria Lencastrê, Universidade de Pernambuco, Brazil

Requirements Trade-offs Analysis in the Absence of Quantitative Measures: A Heuristic Method
Golnaz Elahi, Department of Computer Science, University of Toronto, Canada
Eric Yu, Faculty of Information, University of Toronto, Canada

Consolidating Multiple Requirement Specifications through Argumentation
Ebrahim Bagheri, Athabasca U and National Research Council Canada, Canada
Faezeh Esfandi, University of New Brunswick, Canada

Aspect-Oriented Analysis for Software Product Lines
Requirements Engineering
Patricia Varela, FCT/UNL, Portugal
Joao Araujo, FCT/UNL, Portugal
Isabel Brito, Instituto Politécnico de Beja, Portugal
Ana Moreira, FCT/UNL, Portugal

Analyzing Goal Models – Different Approaches and How to Choose Among Them
Jennifer Horkoff, Department of Computer Science, University of Toronto, Canada
Eric Yu, Faculty of Information, University of Toronto, Canada

Conditional Preferences in Software Stakeholders’ Judgments
Ivana Ognjanovic, University of Montenegro, Montenegro
Dragan Casevic, Athabasca University, Canada
Ebrahim Bagheri, Athabasca University, Canada
Mohsen Asadi, Athabasca University, Simon Fraser University, Canada

10:40 – 11:10 LEVEL 1, HUMANITIES BUILDING (H)
Coffee Break

WED 11:10 – 12:50 ROOM 122

(CSP) Constraint Solving and Programming
Session Chair: Stefano Bistarelli, Università di Perugia, Italy and IIT-CNR, Pisa, Italy
| Improving CP-based Local Branching via Sliced Neighborhood Search | Integrated PSO and Line based Representation Approach for SLAM |
| Fabio Parisini, University of Bologna, DEIS, Italy | Mohammad Reza Mohammadi, Islamic Azad University Qazvin Branch, Iran |
| Michela Milano, University of Bologna, DEIS, Italy | Saeed Shiry Ghidary, Amirkabir University of Technology, Iran |

| An Efficient Generic Network Flow Constraint | Template-based Autonomous Navigation in Urban Environments |
| Robin Steiger, EPFL, Switzerland | Jefferson Souza, University of Sao Paulo, Brazil |
| Willem-Jan van Hoeve, Carnegie Mellon University, United States | Daniel Sales, University of Sao Paulo, Brazil |
| Radoslaw Szymanek, EPFL, Switzerland | Patrick Shinzato, University of Sao Paulo, Brazil |

| Optimal Stopping Methods for Finding High Quality Solutions to Satisfiability Problems with Preferences | Fernando Osório, University of Sao Paulo, Brazil |
| Emanuele Di Rosa, DIST · University of Genoa, Italy | Denis Wolf, University of Sao Paulo, Brazil |
| Enrico Giunchiglia, DIST · University of Genoa, Italy | |
| Barry O’Sullivan, Cork Constraint Computation Centre (4C) · University College Cork, Ireland | |

| Combination: Automated Generation of Puzzles with Constraints | Incremental Feature-Based Mapping from Sonar Data using Gaussian Mixture Models |
| Christopher Jefferson, University of St Andrews, United Kingdom | Milton Heeney, UFRGS, Brazil |
| Wendy Moncur, University of Aberdeen, United Kingdom | Paulo Engel, UFRGS, Brazil |
| Karen Petrie, University of Dundee, United Kingdom | |

| Finding Partitions of Arguments with Dung’s Properties via SCSPs | |
| Stefano Bistarelli, Dipartimento Matematica e Informatica, Università di Perugia, Italy | |
| Paola Campli, Dipartimento di Scienze, Università di Pescara, Italy | |
| Francesco Santini, Dipartimento di Matematica e Informatica, Università di Perugia, Italy | |

**WED 11:10 – 11:30 ROOM H123**

| (ILE-2) Intelligent/Innovative Learning Environments | (NETS-2) Networking |
| Session Chair: Seiji Isotani, Carnegie Mellon University, USA | Romain Fontugne, The Graduate University for Advanced Studies, Japan |

| Towards the Establishment of Supporting Mechanisms for Modeling and Generating Educational Content | A New TCP Mechanism for Reducing Retransmission Timeouts over Multi-hop Wireless Networks |
| Vanessa Araujo Borges, University of São Paulo, Brazil | Prasanthi S, Pusan National University, Korea |
| José Carlos Maldonado, University of São Paulo, Brazil | Sang-Hwa Chung, Pusan National University, Korea |
| Ellen Francine Barbosa, University of São Paulo, Brazil | |

| ID* Lite: Improved D* Lite Algorithm | HDOV - An Overlay Network for Wide Area Spatial Data Collection |
| Weiya Yue, Univ. of Cincinnati, United States | Yuuichi Teramishi, Osaka University, Japan |
| John Franco, Univ. of Cincinnati, United States | Susumu Takeuchi, NICT, Japan |
| Weiwei Cao, Graduate University of Chinese Academy of Sciences, China | Kaname Harumoto, Osaka University, Japan |
| Hongwei Yue, Guangdong University of Technology, China | |

| ID* Lite: Improved D* Lite Algorithm | Club: A Cluster Based Framework for Mitigating Distributed Denial of Service Attacks |
| Weiya Yue, Univ. of Cincinnati, United States | Zhang Fu, Chalmers University of Technology, Sweden |
| John Franco, Univ. of Cincinnati, United States | Marina Papatriantafillou, Chalmers University of Technology, Sweden |
| Weiwei Cao, Graduate University of Chinese Academy of Sciences, China | Philippas Tsigas, Chalmers University of Technology, Sweden |

| WED 11:30 – 12:50 ROOM H123 | |
| (ROBOT) Intelligent Robotic Systems | (MMV-2) Multimedia and Visualization |
| Session Chair: Denis Wolf, University of Sao Paulo, Brazil | Session Chair: Ethan Munson, University of Wisconsin |

| Improving Matching Performance of DPI Traffic Classifier | |
| Tingwen Liu, Institute of Computing Technology, Chinese Academy of Sciences, China | |
| Yong Sun, Institute of Computing Technology, Chinese Academy of Sciences, China | |
| Li Guo, Institute of Computing Technology, Chinese Academy of Sciences, China | |
| Binxing Fang, Institute of Computing Technology, Chinese Academy of Sciences, China | |

| Club: A Cluster Based Framework for Mitigating Distributed Denial of Service Attacks | |
| Zhang Fu, Chalmers University of Technology, Sweden | |
| Marina Papatriantafillou, Chalmers University of Technology, Sweden | |
| Philippas Tsigas, Chalmers University of Technology, Sweden | |
A Personal Photograph Browser for Life Log Analysis based on Location, Time, and Person
Ai Gomi, Ochanomizu University, Japan
Takayuki Itoh, Ochanomizu University, Japan

A Multimodal Interaction Component for Digital Television
Diogo Pedrosa, ICMC - USP, Brazil
José Augusto C. Martins Jr., ICMC - USP, Brazil
Erick L. Melo, UFSCar, Brazil
Cesar A. Teixeira, UFSCar, Brazil

Considering Non-functional Aspects in the Design of Hypermedia Authoring Tools
Bruno Lima, Pontifical Catholic University of Rio de Janeiro, Brazil
Luiz Soares, Pontifical Catholic University of Rio de Janeiro, Brazil
Marcelo Moreno, Pontifical Catholic University of Rio de Janeiro, Brazil

Media-oriented Operators for Authoring Interactive Multimedia Documents Generated from Capture Sessions
Didier Augusto Vega-Oliveiros, Universidade de Sao Paulo, Brazil
Diogo Santana Martins, Universidade de Sao Paulo, Brazil
Maria da Graça Campos Pimentel, Universidade de Sao Paulo, Brazil

WED 11:10 – 12:00 ROOM H105
(RE-2) Requirements Engineering
Session Chair: Maria Lencastre, Universidade de Pernambuco,

Goal-Driven Software Product Line Engineering
Mohsen Asadi, Simon Fraser University, Canada
Ebrahim Bagheri, Athabasca University, Canada
Dragan Gasevic, Athabasca University, Canada
Marek Hatala, Simon Fraser University, Canada
Bardia Mohabbati, Simon Fraser University, Canada

STREAM: An Strategy for Transition between Requirements Models and Architectural Models
Marcia Lucena, UFRN, Brazil
Jaelson Castro, UFPE, Brazil
Carla Silva, UFBA, Brazil
Fernanda Alencar, UFPE, Brazil
Emanuel Santos, UFPE, Brazil

WED 12:00 – 12:50 ROOM H105
(PADO) Green/Power-Aware Design and Optimization
Session Chair: Jian-Jia Chen, Karlsruhe Institute of Technology (KIT), Germany

Energy-Efficient Scheduling for Parallel Real-Time Tasks Based on Level-Packing
Fanxin Kong, Dept. of Computer Science & Technology, Northeastern University, China
Nan Guan, Dept. of Information Technology, Uppsala University, Sweden

Qingxu Deng, Dept. of Computer Science & Technology, Northeastern University, China
Wang Yi, Dept. of Information Technology, Uppsala University, Sweden

A System Context-Aware Approach for Battery Lifetime Prediction in Smart Phones
Xin Zhao, Peking University, China
Yao Guo, Peking University, China
Qing Peng, Peking University, China
Xiangqun Chen, Peking University, China

12:50 – 2:10 LEVEL 1,
HUMANITIES BUILDING (H)
Lunch Break

WED 2:40 – 5:40 CORRIDOR LEVEL 2, HUMANITIES BUILDING (H)
Poster Session II

Posters of the following Tracks: CM, CSP, DE, DM, DTTA, EC, EE, IAR, ILE, MESC, OOPS, PL, PSC, SE, SOAP (see the detailed list of Posters on Page 38).

WED 2:10 – 2:50 ROOM H122
(PSC) Programming for Separation of Concerns
Session Chair: Emiliano Tramontana, University of Catania, Italy

Change-based FODA Diagrams: Bridging the Gap Between Feature-oriented Design and Implementation
Peter Ebraeert, Universiteit Antwerpen, Belgium
Quinten David Soetens, Universiteit Antwerpen, Belgium
Dirk Janssens, Universiteit Antwerpen, Belgium

Distributed Dynamic Weaving is a Crosscutting Concern
Michihiro Horie, Tokyo Institute of Technology, Japan
Satoshi Morita, Tokyo Institute of Technology, Japan
Shigeru Chiba, Tokyo Institute of Technology, Japan
**WED 2:50 – 3:50 ROOM H122**

**(OOPS) Object Oriented Programming**

*Languages and Systems*

**Session Chair** Andy Kellens, Vrije Universiteit Brussel, Belgium

**REME-D: a Reflective, Epidemic Message-Oriented Debugger for Ambient-Oriented Applications**

Elisa Gonzalez Boix, Vrije Universiteit Brussel, Belgium
Carlos Noguer, Vrije Universiteit Brussel, Belgium
Tom Van Cutsem, Vrije Universiteit Brussel, Belgium
Wolfgang De Meuter, Vrije Universiteit Brussel, Belgium
Theo D’Hondt, Vrije Universiteit Brussel, Belgium

**Type Harvesting: A Practical Approach to Obtaining Typing Information in Dynamic Programming Languages**

Michael Haupt, Hasso Plattner Institute, University of Potsdam, Germany
Michael Perscheid, Hasso Plattner Institute, University of Potsdam, Germany
Robert Hirschfeld, Hasso Plattner Institute, University of Potsdam, Germany

**FortressCheck: Automatic Testing for Generic Properties**

Seonghoo Kang, KAIST, Korea
Sukyoung Ryu, KAIST, Korea

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**WED 2:10 – 3:30 ROOM H123**

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

**Session Chair** Jean-Marc Seigneur, University of Geneva, Switzerland

**Verification of Data Pattern for Interactive Privacy Preservation Model**

Sujoy Ray, Concordia University, Canada
Mohammad Fahim Nizam, Concordia University, Canada
Swagata Das, Concordia University, Canada
Benjamin C. M. Fung, Concordia University, Canada

**ImageAlert: Credibility Analysis of Text-image Pairs on the Web**

Yusuke Yamamoto, Kyoto University, Japan
Katsumi Tanaka, Kyoto University, Japan

**Hierarchical Trust Management for Wireless Sensor Networks and Its Application to Trust-Based Routing**

Fenye Bao, Virginia Tech, United States
Ing-Ray Chen, Virginia Tech, United States
Moonjeong Chang, Virginia Tech, United States
Jin-Hee Cho, U.S. Army Research Laboratory, United States

**A Formal Approach Towards Measuring Trust in Distributed Systems**

Guido Schäry, RWTH Aachen, Germany
Melanie Volkamer, TU Darmstadt, Germany
Sebastian Ries, TU Darmstadt, Germany
Sheikh Mahbub Habib, CASED, TU Darmstadt, Germany

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**WED 3:30 – 3:50 ROOM H123**

**(SWA-1) Semantic Web and its Application**

**Session Chair** Flavius Frasincar, Erasmus University, Netherlands

**A Method for the Classification of Folksonomy Resources**

Francisco Echarte, Universidad Publica de Navarra, Spain
Jose Javier Astrain, Universidad Publica de Navarra, Spain
Alberto Cordova, Universidad Publica de Navarra, Spain
Jesus Villadangos, Universidad Publica de Navarra, Spain
Aritz Labat, Universidad Publica de Navarra, Spain

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**WED 2:10 – 3:50 ROOM H103**

**(EMBS-1) Embedded Systems: Applications, Solutions, and Techniques**

**Session Chair** Li-Pin Chang, National Chiao-Tung University, Hsinchu, Taiwan

**Design Issues in Composition Kernels for Highly Functional Embedded Systems**

Hiromasa Shimada, Department of Computer Science, Waseda University, Japan
Yuki Kinebuchi, Department of Computer Science, Waseda University, Japan
Teung-Han Lin, Department of Computer Science, Waseda University, Japan
Alexandre Courbot, Department of Computer Science, Waseda University, Japan
Tatsuo Nakajima, Department of Computer Science, Waseda University, Japan

**CAVE: Channel-Aware Buffer Management Scheme for Solid State Disk**

Sung Kyo Park, KAIST, Korea
Youngwoo Park, KAIST, Korea
Gyu-Dong Shin, KAIST, Korea
Kyu Ho Park, KAIST, Korea

**System-level Co-simulation of Integrated Avionics Using Polychrony**

Huafeng Yu, INRIA Rennes - Bretagne Atlantique/IRISA, France
Yue Ma, INRIA Rennes - Bretagne Atlantique/IRISA, France
Yann Glocue, INRIA Rennes - Bretagne Atlantique/IRISA, France
Jean-Pierre Talpin, INRIA Rennes - Bretagne Atlantique/IRISA, France
Loic Beznard, IRISA/CNRS, France
Thierry Gautier, INRIA Rennes - Bretagne Atlantique/IRISA, France
Paul Le Guernic, INRIA Rennes - Bretagne Atlantique/IRISA, France
Andres Toom, IRIT, Universite de Toulouse, France
Odile Laurent, Airbus, France

**Sector Log: Fine-Grained Storage Management for Solid State Drives**

Seongwook Jin, KAIST, Korea
Jaehong Kim, KAIST, Korea
Jaegyu Kim, KAIST, Korea
Jaehyuk Huh, KAIST, Korea
Seungryoul Maeng, KAIST, Korea
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<td>Wed 2:10 – 3:50</td>
<td>ROOM H104</td>
<td><strong>(IAR-1) Information Access and Retrieval</strong></td>
<td>Gloria Bordigna, CNR, Italy</td>
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<td><strong>On Three Fuzzy Connectives for Flexible Data Retrieval and their Axiomatization</strong></td>
<td>Patrick Bosc, Irisa-Ensass, France</td>
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<td><strong>Relevance Stability in Blog Retrieval</strong></td>
<td>Mustafa Keikha, University of Lugano, Switzerland</td>
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<td><strong>Performance and Perceptions of Human Computation Games for Image Tagging</strong></td>
<td>Dion Goh, Nanyang Technological University, Singapore</td>
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<td><strong>Hierarchical Comments-Based Clustering</strong></td>
<td>Chiao-Fang Hsu, Texas A&amp;M University, United States</td>
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<tr>
<td>Wed 2:10 – 3:30</td>
<td>ROOM H105</td>
<td><strong>(DE) Document Engineering</strong></td>
<td>Rafael Lins, Universidade Federal de Pernambuco, Brazil</td>
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<td><strong>Massive Character Recognition with a Large Ground-Truthed Database</strong></td>
<td>Wenjie Cai, O-RID Company, Japan</td>
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<td><strong>Pixel Accurate Document Image Content Extraction</strong></td>
<td>Yaokai Feng, Kyushu University, Japan</td>
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<td><strong>Multi-Document Summarization of Scientific Corpora</strong></td>
<td>Seichi Uchida, Kyushu University, Japan</td>
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<td><strong>A New Algorithm for Segmenting Warped Textlines in Document Images</strong></td>
<td>Siyuan Chen, Computer Science and Engineering Department, Lehigh University, United States</td>
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<td>Henry Baird, Computer Science and Engineering Department, Lehigh University, United States</td>
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<td>Wed 3:30 – 3:50</td>
<td>ROOM H105</td>
<td><strong>(RTS-1) Real-Time Systems</strong></td>
<td>Paulo Martins, Chaminade University, USA</td>
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<td><strong>A Statistical Approach to Simulation Model Validation in Response-Time Analysis of Complex Real-Time Embedded Systems</strong></td>
<td>Yue Lu, Mälardalen Real-Time Research Centre, Sweden</td>
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<td>Johan Kraft, Mälardalen Real-Time Research Centre, Sweden</td>
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<td>Thomas Nolte, Mälardalen Real-Time Research Centre, Sweden</td>
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<td>Iain Bate, University of York, United Kingdom</td>
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<td>Wed 3:50 – 4:20</td>
<td>LEVEL1, HUMANITIES BUILDING (H)</td>
<td><strong>Coffee Break</strong></td>
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<td>Wed 4:20 – 6:00</td>
<td>ROOM H122</td>
<td><strong>(CM) Coordination Models, Languages and Applications</strong></td>
<td>Matteo Casadei, Università di Bologna, Italy</td>
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<td><strong>Optimistic Access Control for Distributed Collaborative Editors</strong></td>
<td>Asma Cherif, Loria, France</td>
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<td><strong>Description Spaces with Fuzziness</strong></td>
<td>Abdessamad Imine, Loria, France</td>
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<td><strong>Executable Model Composition - A Multilevel Approach</strong></td>
<td>Michael Rustowitch, Loria, France</td>
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<td>Elena Nardini, Alma Mater Studiorum - Università di Bologna, Italy</td>
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<td>Andrea Omicini, Alma Mater Studiorum - Università di Bologna, Italy</td>
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<td>Mirko Virolli, Alma Mater Studiorum - Università di Bologna, Italy</td>
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<td>Mario Sánchez, Universidad de los Andes, Colombia</td>
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<td>Jorge Villalobos, Universidad de los Andes, Colombia</td>
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<tr>
<td>Wed 4:20 – 6:00</td>
<td>ROOM H123</td>
<td><strong>(SWA-2) Semantic Web and its Application</strong></td>
<td>Sven Groppe, University of Lübeck, Germany</td>
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<td><strong>Parallelizing Join Computations of SPARQL Queries for Large Semantic Web Databases</strong></td>
<td>Jinghua Groppe, University of Lübeck, Germany</td>
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### Fuzzing the Out-of-Memory Killer on Embedded Linux: An Adaptive Random Approach
K.Y. Sim, Swinburne University of Technology, Sarawak Campus, Malaysia
F.-C. Kuo, Swinburne University of Technology, Australia
R. Merkel, Swinburne University of Technology, Australia

#### Room H104
**Wednesday, 4:20 – 6:00**

#### (IAR-2) Information Access and Retrieval
**Session Chair:** Gloria Bordogna, CNR, Italy

### A Bayesian Network Approach to Context Sensitive Query Expansion
Zheng Ye, York University, Canada
Xiangji Huang, York University, Canada
Hongfei Lin, Dalian University of Technology, China

### Interactive Feature Selection for Document Clustering
Yeming Hu, Dalhousie University, Canada
Evangelos Milios, Dalhousie University, Canada
James Blustein, Dalhousie University, Canada

### Calculating Content Recency based on Timestamped and Non-Timestamped Sources for Supporting Page Quality Estimation
Adam Jatowt, Kyoto University, Japan
Yukiko Kawai, Kyoto Sangyo University, Japan
Katsumi Tanaka, Kyoto University, Japan

### Biomedical Concept Extraction based on Combining the Content-based and Word Order Similarities
Duy Dinh, University of Toulouse, France
Lynda Tamine, University of Toulouse, France

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### Fixed-Point Implementation of Isolated Sub-Word Level Speech Recognition Using Hidden Markov Models
Venkatesh N, Innovation Labs, Tata Consultancy Services, India
Ruchir Gulati, Innovation Labs, Tata Consultancy Services, India
Rajeev Bhujade, Innovation Labs, Tata Consultancy Services, India
Girish Chandra M, Innovation Labs, Tata Consultancy Services, India

### A Lifespan-aware Reliability Scheme for RAID-based Flash Storage
Sehwan Lee, Seoul National University, Korea
Bitna Lee, Seoul National University, Korea
Kern Koh, Seoul National University, Korea
Hyokyung Bahn, Ewha University, Korea

### i4Copter: An Adaptable and Modular Quadrotor Platform
Peter Ulbrich, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Rüdiger Kapitza, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Christian Harkort, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Reiner Schmid, Siemens Corporate Technology, Germany
Wolfgang Schröder-Preikschat, Friedrich-Alexander University Erlangen-Nuremberg, Germany

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**Wednesday, 4:20 – 6:00**

#### (EMBS-2) Embedded Systems: Applications, Solutions, and Techniques
**Session Chair:** Jung-Chun Lia, Tunghai University, Taichung, Taiwan

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#### From Nonpreemptive to Preemptive Scheduling - From Single-Processor to Multi-Processor
Mohammad Mahdi Jafghoorni, LIACS and CWI, The Netherlands, Netherlands

#### Stack Distance Based Worst-Case Instruction Cache Performance Analysis
Yu Liu, Southern Illinois University Carbondale, United States
Wei Zhang, Virginia Commonwealth University, United States

#### Fault Tolerance Evaluation and Schedulability Analysis
Florian Many, ONERA, France
David Dose, ONERA, France

#### Multiprocessor Schedulability Analysis
Mikel Cordovilla, ONERA, France
Frédéric Boniol, ONERA, France
Eric Noulard, ONERA, France
Claire Pagetti, ONERA, France

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**Final Program**

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**SAC 2011, March 21 – 24,**
Handling Overload of Target Sensitive Real-time Applications for Increased System Utility and Improved Resource Usage
Raphael Guerra, Technische Universität Kaiserslautern, Germany
Gerhard Fohler, Technische Universität Kaiserslautern, Germany
### Thursday March 24, 2011

#### Thu 9:00 – 10:40 Room H122

**(SOAP-1) Service Oriented Architecture and Programming**  
**Session Chair:** Ivan Lanese, Università di Bologna, Italy

- **Measuring the Compatibility of Service Interaction Protocols**  
  Meriem Ouederni, University of Malaga, Spain  
  Gwen Salaun, INRIA, France  
  Ernesto Pimentel, University of Malaga, Spain

- **Adaptive Provisioning of Human Expertise in Service-oriented Systems**  
  Florian Skopik, Vienna University of Technology, Austria  
  Daniel Schall, Vienna University of Technology, Austria  
  Harald Paiser, Vienna University of Technology, Austria  
  Schahram Dustdar, Vienna University of Technology, Austria

- **Planning Service Agreements in SOA-Based Systems through Stochastic Models**  
  Marcelo Teixeira, Federal University of Pernambuco, Brazil  
  Ricardo Massa, Federal University of Pernambuco, Brazil  
  Cesar Oliveira, Federal University of Pernambuco, Brazil  
  Paulo Maciel, Federal University of Pernambuco, Brazil

- **Advanced Service Monitoring Configurations with SLA Decomposition and Selection**  
  Howard Foster, City University London, United Kingdom  
  George Spanoudakis, City University London, United Kingdom

#### Thu 9:00 – 10:40 Room H103

**(WT-1) Web Technologies**  
**Session Chair:** Davide Rossi, University of Bologna, Italy

- **Search-Logger -- Analyzing Exploratory Search Tasks**  
  Georg Singer, University of Tartu, Estonia  
  Ulrich Norbisrath, University of Tartu, Estonia  
  Eero Vainikko, University of Tartu, Estonia  
  Hannu Kikkas, University of Tartu, Estonia  
  Dirk Lewandowski, Hamburg University of Applied Sciences, Germany

- **Game Vendors’ Influence on the Monetary Value of Virtual Goods**  
  Tim A. Majchrzak, University of Muenster, Germany  
  Kay F. Hildebrand, University of Muenster, Germany

- **A Framework for Automatic Annotation of Web Pages Using the Google Rich Snippets Vocabulary**  
  Jeroen van der Meer, Erasmus University Rotterdam, Netherlands  
  Ferry Boom, Erasmus University Rotterdam, Netherlands  
  Frederik Hogenboom, Erasmus University Rotterdam, Netherlands  
  Flavius Frasincar, Erasmus University Rotterdam, Netherlands  
  Uzay Kaymak, Erasmus University Rotterdam, Netherlands

- **Analyzing a Korean Blogosphere: A Social Network Analysis Perspective**  
  Jiwoon Ha, Hanyang University, Korea  
  Duck-Ho Bae, Hanyang University, Korea  
  Sang-Wook Kim, Hanyang University, Korea  
  Seok-Chul Baek, NHN Corp., Korea  
  Byeong-Soo Jeong, Kyung Hee University, Korea

- **Extending Timestamp-Based Two Phase Commit Protocol for RESTful Services to Meet Business Rules**  
  Luiz Alexandre Hiane da Silva Maciel, ITA, Brazil  
  Celso Massaki Hirata, ITA, Brazil

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**BioTRON: A Biological Workflow Management System**  
Valeria Fionda, Free University of Bolzano-Bozen, Italy  
Giuseppe Pirrò, INRIA - Grenoble, France

- **Efficient Clustering of Populations Using a Minimal SNP Panel**  
  Mahdi Belkaid, University of Hawaii Manoa, United States  
  Kyungmin Baek, University of Hawaii Manoa, United States  
  David S. Haynor, University of Hawaii Manoa, United States  
  Guylaine Poisson, University of Hawaii Manoa, United States

- **Rapid Computation of Distance Estimators from Nucleotide and Amino Acid Alignments**  
  Martin Simonsen, Bioinformatics Research Centre, Denmark

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Christian Nergaard Strom Pedersen, Bioinformatics Research Centre, Denmark

**Classifying Microarray Data with Association Rules**  
Luiza Antonie, University of Guelph, Canada  
Kyrylo Bessonov, University of Guelph, Canada

**Machine Classification of Melanoma and Nevi from Skin Lesions**  
John David Osborne, The University of Alabama at Birmingham, United States  
Song Gao, The University of Alabama at Birmingham, United States  
Wei-Bang Chen, The University of Alabama at Birmingham, United States  
Aleodor Andea, The University of Alabama at Birmingham, United States  
Chengcui Zhang, The University of Alabama at Birmingham, United States
THU 9:00 – 10:40 ROOM H104
(DTTA-1) Database Theory, Technology, and Applications
Session Chair: Junping Sun, Nova Southeastern University, USA

Site-Autonomous Distributed Semantic Caching
Norvald Ryeng, NTNU, Norway
Jon Olav Hauglid, NTNU, Norway
Kjetil Norvag, NTNU, Norway

Voronoi-based Range Query for Trajectory Data in Spatial Networks
Shen Liu, Zhejiang University, China
Ling Chen, Zhejiang University, China
Gencai Chen, Zhejiang University, China

A Fast Approach for Parallel Deduplication on Multicore Processors
Guilherme Dal Bianco, UFRGS, Brazil
Renata Galante, UFRGS, Brazil
Carlos A. Heuser, UFRGS, Brazil

Top-k Service Compositions: A Fuzzy Set-Based Approach
Karim Benouaret, Lyon 1 University, France
Djamil Benslimane, Lyon 1 University, France
Allel Hadjali, University of Rennes 1, France

Determinacy and Rewriting of Conjunctive Queries Over Unary Database Schemes
Lixiao Zheng, Institute of Software Chinese Academy of Sciences, China
Haiming Chen, Institute of Software Chinese Academy of Sciences, China

10:40 – 11:10 LEVEL1, HUMANITIES BUILDING (H)
Coffee Break

THU 11:10 – 12:50 ROOM H122
(SOAP-2) Service Oriented Architecture and Programming
Session Chair: Manuel Mazzara, Newcastle University, UK

WS-Aggregation: Distributed Aggregation of Web Services Data
Waldemar Hummer, Distributed Systems Group, Vienna University of Technology, Austria
Philipp Leitner, Distributed Systems Group, Vienna University of Technology, Austria
Schahram Dustdar, Distributed Systems Group, Vienna University of Technology, Austria

Modeling Behavioral RESTful Web Service Interfaces in UML
Ivan Porres, Åbo Akademi University, Turku, Finland
Irum Rof, Åbo Akademi University, Turku, Finland

Development and Configuration of Service-Oriented Systems Families
Bardia Mohabati, Simon Fraser University, Canada
Marek Hatala, Simon Fraser University, Canada
Dragan Gasevic, Athabasca University, Canada
Mehsen Asadi, Simon Fraser University, Canada
Marko Boskovic, Athabasca University, Canada

Configurable SOAP Proxy Cache for Data Provisioning Web Services
Peep Küngas, Software Technology and Applications Competence Center, Estonia
Marlon Dumas, University of Tartu, Estonia

THU 9:00 – 10:40 ROOM H105
(EE-1) Enterprise Engineering
Session Chair: Artur Caetano, IST, Technical University of Lisbon, Portugal

An Empirical Comparison of Static and Dynamic Business Process Mining
Ricardo Pérez-Castillo, Alarcos Research Group, University of Castilla-La Mancha, Spain
Ignacio García-Rodríguez de Guzmán, Alarcos Research Group, University of Castilla-La Mancha, Spain
Mario Piattini, Alarcos Research Group, University of Castilla-La Mancha, Spain
Barbara Weber, University of Innsbruck, Austria
Ángeles S. Places, Universidad da Coruña, Spain

Process Performance Management – Illuminating Design Issues through a Systematic Problem Analysis
Anne Cleven, University of St. Gallen, Switzerland
Robert Winter, University of St. Gallen, Switzerland
Felix Wortman, University of St. Gallen, Switzerland

Efficiency Evaluation of Open Source ETL Tools
Tim A. Majchrzak, University of Muenster, Germany
Tobias Jansen, SYS VIVEON AG, Germany
Herbert Kuchen, University of Muenster, Germany

THU 11:10 – 11:50 ROOM H123
(ASIS) Advances in Spatial and Image-based Information Systems
Session Chair: Richard Cheoir, University of Bourgogne, France

Spatial Network Modeling for Databases
Virupaksha Kanjilal, University of Florida, United States
Markus Schneider, University of Florida, United States
**Tracking Continuous Topological Changes of Complex Moving Regions**  
Hechen Liu, University of Florida, United States  
Markus Schneider, University of Florida, United States

**Transforming the Web into a Real Application Platform: New Technologies, Emerging Trends and Missing Pieces**  
Matti Anttonen, Tampere University of Technology, Finland  
Arto Salminen, Tampere University of Technology, Finland  
Tommi Mikkonen, Tampere University of Technology, Finland  
Antero Taivalsaari, Nokia Research Center, Finland

**Understanding and Improving Wikipedia Article Discussion Spaces**  
Jodi Schneider, National University of Ireland, Galway, Ireland  
Alexandre Passant, National University of Ireland, Galway, Ireland  
John G. Breslin, National University of Ireland, Galway, Ireland

**An Integrated Approach to Discover Tag Semantics**  
Antonina Dattolo, University of Udine, Italy  
Davide Eynard, University of Lugano, Switzerland  
Luca Mazzola, University of Lugano, Switzerland

**THU 11:10 – 11:50 ROOM H104**  
(DTTA-2) Database Theory, Technology, and Applications  
Session Chair: Junping Sun, Nova Southeastern University, USA

**Efficient Top-K Retrieval for User Preference Queries**  
Claus Dabrisenger, Alpa Adria University Klagenfurt, Austria

**Computing Subgraph Isomorphic Queries using Structural Unification and Minimum Graph Structures**  
Hasan Jamil, Wayne State University, United States

**THU 11:50 – 12:50 ROOM H104**  
(CF) Computer Forensics  
Session Chair: Lorie M. Liebrock, New Mexico Institute of Mining and Technology, USA

**Towards Discovering Criminal Communities from Textual Data**  
Rabeah Al-Zaidy, Concordia University, Canada  
Benjamin C. M. Fung, Concordia University, Canada  
Amr M. Youssif, Concordia University, Canada

**Cloud Application Logging for Forensics**  
Raffael Marty, Loggly, Inc., United States

**Time Based Data Forensic and Cross-Reference Analysis**  
Xiaoqin Ding, Shanghai Jiao Tong University, China  
Hengming Zou, Shanghai Jiao Tong University, China

**THU 11:50 – 12:50 ROOM H123**  
(CISIA) Computational Intelligence and Signal and Image Analysis  
Session Chair: Agostinho Rosa, Technical University of Lisbon, Portugal

**Improving Handwritten Keyword Spotting with Self-Training**  
Volkmar Frinken, Institute for Computer Science and Applied Mathematics, University of Bern, Switzerland  
Andreas Fischer, Institute for Computer Science and Applied Mathematics, University of Bern, Switzerland  
Horst Bunke, Institute for Computer Science and Applied Mathematics, University of Bern, Switzerland

**An Event-based Video Retrieval System by Combining Broadcasting Baseball Video and Webcasting Text**  
Yin-Fu Huang, National Yunlin University of Science and Technology, Taiwan  
Li-Wen Chen, National Yunlin University of Science and Technology, Taiwan

**Image Segmentation of Cervical Vertebra in X-Ray Radiographs Using the Curve Fitting Strategy**  
Huaifei Hu, Huazhong University of Science and Technology, China  
Hong Liu, Huazhong University of Science and Technology, China  
Lili Chen, Huazhong University of Science and Technology, China  
Chih-Cheng Hung, Southern Polytechnic State University, United States  
Xiangyang Xu, Huazhong University of Science and Technology, China  
Zhicong Lan, Huazhong University of Science and Technology, China

**THU 11:10 – 12:50 ROOM H103**  
(WT-2) Web Technologies  
Session Chair: Davide Rosi, University of Bologna, Italy

**Visualizing Diaphyte Sections and Relations from the Sequence of Replying Comments**  
Yun-Jung Lee, Dept. of Computer Engineering Pusan National University, Korea  
Eun-Kyung Kim, Dept. of Computer Engineering Pusan National University, Korea  
Hwan-Gue Cho, Dept. of Computer Engineering Pusan National University, Korea  
Gyun Woo, Dept. of Computer Engineering Pusan National University, Korea

**Bridging Socially-Enhanced Virtual Communities**  
Daniel Schall, Vienna University of Technology, Austria  
Florian Skopik, Vienna University of Technology, Austria  
Harald Psaier, Vienna University of Technology, Austria

Schahram Dustdar, Vienna University of Technology, Austria
**THU 11:10 – 12:50 ROOM H105**

**Enterprise Engineering**

*Session Chair:* Artur Gaetano, IST, Technical University of Lisbon, Portugal

**An Integrated Approach for Modeling and Facilitating RFID-based Collaborative Logistics Processes**

Yu Li, Institute AIFB, Karlsruhe Institute of Technology, Germany
Andreas Oberweis, Institute AIFB, Karlsruhe Institute of Technology, Germany
Huayu Zhang, Institute AIFB, Karlsruhe Institute of Technology, Germany

**Strong Non-Leak Guarantees for Workflow Models**

Rafael Accorsi, Dept. of Telematics, University of Freiburg, Germany
Claus Wonnenmann, Dept. of Telematics, University of Freiburg, Germany

**Software Reuse in Agile Development Organizations - a Conceptual Management Tool**

Wouter Spoelstra, University of Twente, Netherlands
Maria Iacob, University of Twente, Netherlands
Marten van Sinderen, University of Twente, Netherlands

**On the Elements of an Enterprise: Towards an Ontology-Based Account**

João Paulo Almeida, Federal University of Espírito Santo, Brazil
Evellin Cardoso, Federal University of Espírito Santo, Brazil

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**12:50 – 2:10 LEVEL 1, HUMANITIES BUILDING (H)**

**Lunch Break**

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**THU 2:10 – 3:50 ROOM H122**

**Software Verification and Testing**

*Session Chair:* Jan Cederquist, Instituto Superior Técnico, Portugal

**Proving the Security of ElGamal Encryption Via Indistinguishability Logic**

Jan Blech, Fortiss, Germany

**A Dynamic Constraint-Based BMC Strategy For Generating Counterexamples**

Hélène Collavizza, University of Nice - Sophia Antipolis / I3S-CNRS, France
Nguyen Le Vinh, University of Nice - Sophia Antipolis / I3S-CNRS, France
Michel Rueher, University of Nice - Sophia Antipolis / I3S-CNRS, France
Samuel Devuylde, Geensys, France

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**THU 2:10 – 3:50 ROOM H103**

**Cloud Computing**

*Session Chair:* Madhu Kumar, National Institute of Technology Calicut, India

**A Genetic Model for Pricing in Cloud Computing Markets**

Mario Macias, Barcelona Supercomputing Center/Technical University of Catalonia, Spain
Jordi Guitart, Barcelona Supercomputing Center/Technical University of Catalonia, Spain

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**THU 2:10 – 3:50 ROOM H123**

**Applications of Evolutionary Computing**

*Session Chair:* Raúl Giraldez Rojo and Jesus S. Aguilar Ruiz, Pablo de Olavide University, Spain

**An Memetic Algorithm with Strategic Controller for the Maximum Clique Problem**

Kengo Katayama, Okayama University of Science, Japan
Akinori Kohnura, Okayama University of Science, Japan
Keiko Kohimoto, Kinki University, Japan
Hideo Minamihara, Okayama University of Science, Japan

**HMXT-GP: an Information-Theoretic Approach to Genetic Programming that Maintains Diversity**

Henry Santos, University of Technology, Sydney, Australia
John Milton, University of Technology, Sydney, Australia
Paul Kennedy, University of Technology, Sydney, Australia

**New Hybrid Genetic Algorithm for Solving Optimal Communication Spanning Tree Problem**

Pham Trung Kien, Hanoi University of Science and Technology, Vietnam
Duy Nguyen Hiep, Hanoi University of Science and Technology, Vietnam
Huynh Thi Thanh Binh, Hanoi University of Science and Technology, Vietnam

**Evolutionary Computation for the Prediction of Secondary Protein Structures**

Alfonso E. Marquez Chamorro, Pablo de Olavide University, Spain
Federico Divina, Pablo de Olavide University, Spain
Jesus S. Aguilar Ruiz, Pablo de Olavide University, Spain

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**General**

**Quotients Revisited for Isabelle/HOL**

Cezary Kaliszyk, University of Tsukuba, Japan
Christian Urban, Technical University Munich, Germany

**XEvolve: An XML Schema Evolution Framework**

François Picalaus, Université Libre de Bruxelles, Belgium
Frédéric Servais, Université Libre de Bruxelles, Belgium
Esteban Zinnani, Université Libre de Bruxelles, Belgium

**A Proof-Based Approach to Verifying Reachability Properties**

Amel Mammar, Telecom SudParis, France
Marc Frappier, GRIL, Canada
Fama Diagne, Telecom SudParis/GRIL, France
Improving High-Performance Computations on Clouds Through Resource Underutilization
Roman Iakymchuk, RWTH Aachen, Germany
Jeff Napier, Vrije Universiteit, Netherlands
Paolo Bientinesi, RWTH Aachen, Germany

A Load-Aware Scheduler for MapReduce Framework in Heterogeneous Cloud Environments
Hsin-Han You, National Chiao Tung University, Taiwan
Chun-Chung Yang, National Chiao Tung University, Taiwan
Jiun-Long Huang, National Chiao Tung University, Taiwan

AoDI: An Allocation-On-Demand Incremental Volume based on LVM
Rui Cao, Nankai University, China
Caijun Zhen, Nankai University, China
Yan Gao, Nankai University, China
Guangxi Yu, Nankai University, China
Xiaoqiang Liu, Nankai University, China
Gang Wang, Nankai University, China
Guangjun Xie, Baidu Inc., China

THU 2:10 – 3:50 ROOM H104

(APGCC-1) Asian perspective of Global and Collaborative Computing
Session Chair: Chih-Hung Chang, Hsinpuing Institute of Technology, Taiwan

A Location-aware Rogue AP Detection System Based on Wireless Packet Sniffing of Sensor APs
KuoFeng Kao, Hsinpuing Institute of Technology, Taiwan
Taur-Heng Yeo, Hsinpuing Institute of Technology, Taiwan
Wai-Shuen Yang, Hsinpuing Institute of Technology, Taiwan
Hui-Hsuan Chen, Hsinpuing Institute of Technology, Taiwan

A Model Transformation Approach for Verifying Multi-Agent Systems using SPIN
Lily Chang, Florida International University, United States
Xudong He, Florida International University, United States

Tagging Web Product Titles Based on Hidden Markov Model
Peng Wang, Southeast University, China
Baowen Xu, Nanjing University, China
Yue You, Southeast University, China
Lu Chen, Southeast University, China

A Pattern-based Verification Approach for a Multi-Core System Development
Peng-Hua Chu, Feng Chia University, Feng Chia University
Nien-Lin Hsieh, Feng Chia University, Taiwan
Chien-Ching Lee, Feng Chia University, Taiwan
Min-Ju Chuang, Feng Chia University, Taiwan
Pao-Ann Hsiung, National Chung Cheng University, Taiwan
William Chu, Tunghai University, Taiwan
Chih-Hung Chang, Hsinpuing Institute of Technology, Taiwan
Chong-Shih Koong, National Taichung University, Taiwan
Chih-Hsiong Shih, Tunghai University, Taiwan
Chao-Tung Yang, Tunghai University, Taiwan

An Approach of Creative Application Evolution on Cloud Computing Platform
Jiantao Zhou, Inner Mongolia University, China
Shang Zheng, De Montfort University, United Kingdom
Delin Jing, De Montfort University, United Kingdom
Hongyi Yang, De Montfort University, United Kingdom

THU 2:10 – 3:50 ROOM H105

(AB) Applied Biometrics
Session Chair: Jean Hennebert, University of Applied Science HES-SO, Switzerland

Shifting Score Fusion: On Exploiting Shifting Variation in Iris Recognition
Christian Rathgeb, University of Salzburg, Dept. of Computer Sciences, Austria
Andreas Uhl, University of Salzburg, Dept. of Computer Sciences, Austria
Peter Wild, University of Salzburg, Dept. of Computer Sciences, Austria

Raster Image Representation of Fingerprint Minutiae
Bian Yang, Gjevik University College, Norway
Zhibo Chen, Technicolor Corporate Research, China
Christoph Busch, Gjevik University College, Norway

Fusion in Fingerprint Authentication: Two Finger Types vs. Two Scanner Types
Dazrivdzhon Gaturov, Gjevik University College, Norway
Christoph Busch, Gjevik University College, Norway
Patrick Boura, Gjevik University College, Norway
Bian Yang, Gjevik University College, Norway

Keystroke Dynamics Authentication for Mobile Phones
Emanuele Maiorana, Università degli Studi “Roma Tre”, Rome, Italy
Patrizio Campisi, Università degli Studi “Roma Tre”, Rome, Italy
Noelia Gonzalez-Carvallo, Universidad de Vigo, Spain
Alessandro Neri, Università degli Studi “Roma Tre”, Rome, Italy
Thu 4:20 – 6:00 Room H123

(No session scheduled)

Thu 4:20 – 6:00 Room H103

(CC-2) Cloud Computing
Session Chair: Madhu Kumar, National Institute of Technology Calicut, India

Towards Improved Load Balancing for Data Intensive Distributed Computing
Sven Groot, The University of Tokyo, Japan
Kazuo Goda, The University of Tokyo, Japan
Masaru Kitsuregawa, The University of Tokyo, Japan

Rapid Application Configuration in Amazon Cloud using Configurable Virtual Appliances
Huan Liu, Accenture Technology Labs, United States

Patterns for Configuration Requirements of Software-as-a-Service
Jaekun Shim, Seoul National University, Republic of Korea
Jongdae Han, Seoul National University, Republic of Korea
Jindae Kim, Seoul National University, Republic of Korea
Byungjeong Lee, The University of Seoul, Republic of Korea
Jaewon Oh, The Catholic University of Korea, Republic of Korea
Chisu Wu, Seoul National University, Republic of Korea

Sense-Respond Cloud Mediator Architecture for Services Evolution
Jay Ramanathan, The Ohio State University, United States
Rajiv Ramnath, The Ohio State University, United States
Nishant Singh, The Ohio State University, United States
Zhe Xu, The Ohio State University, United States
Yinxiao Xu, Software School of Fudan University, China

Thu 4:20 – 6:00 Room H104

(APGCC-2) Asian perspective of Global and Collaborative Computing
Session Chair: Po-Ann Hsiung, National Chung Cheng University, Taiwan

Change Impact Analysis for Object-Oriented Programs Evolved to Aspect-Oriented Programs
Chien-Hung Liu, National Taipei University of Technology, Taiwan
Shu-Ling Chen, Southern Taiwan University, Taiwan
Wei-Lin Jhu, National Taipei University of Technology, Taiwan

An Automatic Selective Color Transfer Algorithm for Images
Yao-Hsien Huang, Shih Chien University, Taiwan
Peng-Cheng Wang, Hsiuping Institute of Technology, Taiwan

Thu 4:20 – 6:00 Room H105

(MESC) Mediation Services in Computing Environments
Session Chair: Rachid Anane, Coventry University, UK

Matching Customer Requests to Service Offerings in Real-Time
Marcel Tilly, European Microsoft Innovation Center, Germany
Stephan Reiff-Marganiec, University of Leicester, United Kingdom

Service-Oriented Dynamic Data Driven Application Systems to Potential Field Method Vehicle Navigation
Szu-Yin Lin, Institute of Information Management, National Chiao-Tung University, Taiwan
Kuo-Ming Chao, Faculty of Computing and Engineering, Coventry University, United Kingdom
Chi-Chun Lo, Institute of Information Management, National Chiao-Tung University, Taiwan

Thursday 6:00pm
Conference ends

Chia-Chi Chou, Shih Chien University, Taiwan
Kui-Ping Lin, Shih Chien University, Taiwan
SAC 2011 POSTERS LIST

WED 9:40 - 12:40 Corridor Level 2, HUMANITIES BUILDING (H)
Poster Session I

(AB) Applied Biometrics Track
Random Forgery Attacks Against DTW-based Online Signature Verification Algorithm
Daigo Muramatsu, Seikei University, Japan

Deceit Detection via Online Behavioral Learning
Nisha Bhaskaran, University at Buffalo, SUNY, United States
Iftoma Nwogu, University of Rochester, United States
Mark G. Frank, University at Buffalo, SUNY, United States
Venu Govindaraju, University at Buffalo, SUNY, United States

(APGCC) Asian perspective of Global and Collaborative Computing Track
Performance Analysis on IEEE 802.11 Ad Hoc Based Broadcast
Yi-Hung Huang, National Taichung University of Education, Taiwan
Chao-Yu Kuo, National Chung Hsing University, Taiwan

Harmonic Functions Based Semi-Supervised Learning For Web Spam Detection
Weifeng Zhang, Nanjing University of Posts and Telecommunications, China
Danmei Zhu, Nanjing University of Posts and Telecommunications, China
Yinzhou Zhang, Nanjing University of Posts and Telecommunications, China
Guoqiang Zhou, Nanjing University of Posts and Telecommunications, China
Baowen Xu, Nanjing University, China

(BIO) Bioinformatics Track
Computing Rearrangement Distance of Every Permutation in the Symmetric Group
Gustavo Rodrigues Galvão, Institute of Computing, University of Campinas, Brazil
Zanoni Dias, Institute of Computing, University of Campinas, Brazil

The Bacterial Strains Characterization Problem
Fabien Chheid, LERIA - University of Angers, France
Adrien Goefon, LERIA - University of Angers, France
Antoine Lafosse, LERIA - University of Angers, France
Frédéric Lardieux, LERIA - University of Angers, France
Frédéric Sauvignon, LERIA - University of Angers, France
Gilles Hunault, HIFI - University of Angers, France
Tristan Boureau, UMR PAVE - University of Angers, France

Prediction of Permutated Super-secondary Structures in Beta-barrel Proteins
Van Du Tran, Laboratory of Computer Science, Ecole Polytechnique, France
Philippe Chassaigne, Laboratory of Computer Science, Ecole Polytechnique, France
Jean-Marc Stoyaert, Laboratory of Computer Science, Ecole Polytechnique, France

(CF) Computer Forensics Track
Event Clustering for Log Reduction and Run Time System Understanding
Kostas Kontogiannis, National Technical University of Athens, Greece
Ahmed Wasyf, University of Waterloo, Canada
Serge Mankovskii, CA Labs, Canada

Towards Designing a Tool for Event Reconstruction using Gladyshev Approach
Merin Sebastian, NITC, India
Priya Chandran, NITC, India

(CISIA) Computational Intelligence and Signal and Image Analysis Track
A Comparative Study and Analysis on K-View Based algorithms for Image Texture Classification
Yihua Lan, Huazhong University of Science and Technology, China
Hong Liu, Huazhong University of Science and Technology, China
Enmin Song, Huazhong University of Science and Technology, China
Chih-Cheng Hung, Southern Polytechnic State University, United States

(DADS) Dependable and Adaptive Distributed Systems
An Approach for Providing Dependable Self-Adaptation in Distributed Embedded Systems
Marc Zeller, Fraunhofer Institute for Communication Systems ESK, Germany
Gereon Weiss, Fraunhofer Institute for Communication Systems ESK, Germany
Dirk Eilers, Fraunhofer Institute for Communication Systems ESK, Germany
Rudi Knorr, Fraunhofer Institute for Communication Systems ESK, Germany

(DS) Data Streams Track
Resource-Aware ECG Analysis on Mobile Devices
Abhijit Sinha, Monash University, Australia
Hossein Tayebi, Monash University, Australia
Shonali Krishnaswamy, Monash University, Australia
Agustinus Bogy Waluyo, Monash University, Australia
Mohamed Gaber, University of Portsmouth, United Kingdom
## (MCA) Mobile Computing and Applications Track

**Formal Analysis of Device Authentication Applications in Ubiquitous Computing**
William Claycomb, Sandia National Laboratories, United States
Dongwan Shin, New Mexico Tech, United States

**ProQuPri: Towards Anonymity Protection with Privacy Quantification for Context-aware Applications**
Farzana Rahman, Marquette University, United States
Sheikh Ahmed, Marquette University, United States
Md. Enamul Hoque, Marquette University, United States

## (EMBS) Embedded Systems: Applications, Solutions, and Techniques Track

**FPGA Based Parallel Transitive Closure Algorithm**
Zheng Ding, Shanghai Jiao Tong University, China
Wei Shu, University of New Mexico, United States
Min-You Wu, Shanghai Jiao Tong University, China

**Exploiting Time Predictable Two-Level Scratchpad Memory for Real-Time Systems**
Yu Liu, Southern Illinois University Carbondale, United States
Wei Zhang, Virginia Commonwealth University, United States

## (OS) Operating Systems Track

**Development of the Wireless Embedded Sensor Network for Energy-Efficient Flooding**
Sanghyun Ahn, School of Computer Science, University of Seoul, Korea
Yujin Lim, Department of Information Media, University of Suwon, Korea
Sanggil Kang, Computer Science and Information Engineering, Inha University, Korea

**SPAD: Software Protection through Anti-debugging Using Hardware Virtualization**
Qian Lin, Shanghai Jiao Tong University, China
Mingyuan Xia, Shanghai Jiao Tong University, China
Miao Yu, Shanghai Jiao Tong University, China
Peijie Yu, Shanghai Jiao Tong University, China
Min Zhu, Shanghai Jiao Tong University, China
Shang Gao, Shanghai Jiao Tong University, China
Zhengwei Qi, Shanghai Jiao Tong University, China
Kai Chen, Shanghai Jiao Tong University, China
HaiBing Guan, Shanghai Jiao Tong University, China

**FMCM: A Efficient Flash Memory Cache Management Scheme for Energy-Efficient Disks**
YoungHwan Kim, Dept. of Computer Science, Soongsil University, Korea
TaeHyounKim, Dept. of Computer Science, Soongsil University, Korea
Yuri Kim, Dept. of Computer Science, Soongsil University, Korea
Ahn-Reum Kim, Dept. of Computer Science, Soongsil University, Korea

## Predictable Multithread Scheduling with Cycle-Accurate Thread Progress Monitor

Youngsam Shin, Samsung Advanced Institute of Technology Samsung Electronics Co., LTD., Korea
Seungwon Lee, Samsung Advanced Institute of Technology Samsung Electronics Co., LTD., Korea
Minyoung Son, Samsung Advanced Institute of Technology Samsung Electronics Co., LTD., Korea
Shihwa Lee Samsung Advanced Institute of Technology Samsung Electronics Co., LTD., Korea

## Coexisting Real-Time OS and General Purpose OS on an Embedded Virtualization Layer for a Multicore Processor

Hitoshi Mitake, Department of Computer Science, Waseda University, Japan
Yuki Kinebuchi, Department of Computer Science, Waseda University, Japan
Alexandre Courbot, Department of Computer Science, Waseda University, Japan
Tatsuo Nakajima, Department of Computer Science, Waseda University, Japan

**Experimenting with System and Libc Call Interception Attacks on ARM-based Linux Kernel**
Ryeongchan Lee, Soongsil University, Korea
Chung Hui Kim, Soongsil University, Korea
Jeong Hyun Yi, Soongsil University, Korea

**Optimization of Out of Memory Killer for Embedded Linux Environments**
Joongin Kook, Soongsil University, Korea
Sukil Hong, Soongsil University, Korea
Woosung Lee, Soongsil University, Korea
Eunkyeung Jae, Soongsil University, Korea
JungYeop Kim, Utica College, United States

## (PADO) Green/Power-Aware Design and Optimization Track

**Petri net based Performance Modeling for Effective DVFS for Multithreaded Programs**
Arun Rangasamy, Indian Institute of Science, Bangalore, India
Y. N. Srikannt, Indian Institute of Science, Bangalore, India

## (RTS) Real-Time Systems Track

**Preemptibility-Aware Responsive Multi-Core Scheduling**
Jupygung Lee, Samsung Electronics, Korea
Geunsik Lim, Samsung Electronics, Korea
Sangbum Suh, Samsung Electronics, Korea

## (SWA) Semantic Web and its Application Track

**SpotTheLink: Playful Alignment of Ontologies**
Stefan Thaler, STI Innsbruck, Austria
(WT) Web Technologies Track
Towards Better Social Integration Through Mobile Web 2.0 Ambient Assisted Living Devices
Tim A. Majchrzak, University of Muenster, Germany
Adalbert Jakubiec, University of Muenster, Germany
Martin Lablans, University Hospital of Muenster, Germany
Frank Uckert, University Hospital of Muenster, Germany

Extracting Preference Terms from Web Browsing Histories Excluding Pages Unrelated to Users’ Interests
Kenta Sasaki, Research & Development Center, Toshiba Corporation, Japan
Masayuki Okamoto, Research & Development Center, Toshiba Corporation, Japan
Nayuko Watanabe, Research & Development Center, Toshiba Corporation, Japan
Masaki Kikuchi, Core Technology Center, Visual Products Company, Toshiba Corporation, Japan
Takayuki Iida, Core Technology Center, Visual Products Company, Toshiba Corporation, Japan
Masanori Hattori, Research & Development Center, Toshiba Corporation, Japan

Fast Lists Intersection with Bloom Filter using Graphics Processing Units
Fan Zhang, Nankai University, China
Naiyong Ao, Nankai University, China
Gang Wang, Nankai University, China
Xiaoguang Liu, Nankai University, China
Jing Liu, Nankai University, China

(WD) Web Design Track
An Assessment of Data Matrix Barcode Recognition under Scaling, Rotation and Warping
Andrei Formiga, UFPE, Brazil
Rafael Lins, UFPE, Brazil
Steven Simanke, Hewlett-Packard, United States
Gary Disposto, Hewlett-Packard, United States
Marcelo Thieli, Hewlett-Packard, Brazil

Automated Extractive Single-Document Summarization: Beating the Baselines with a New Approach
Araly Barrera, University of Houston, United States
Rakesh Verma, University of Houston, United States

(DE) Document Engineering Track
Equivalence Class Transformation Based Mining of Frequent Itemsets from Uncertain Data
Carson K. Leung, The University of Manitoba, Canada
Lijing Sun, The University of Manitoba, Canada

Exact Top-K Keyword Search on Graph Databases
Meirong Wang, The University of Electro-Communications, Japan
Lijun Jiang, The University of Electro-Communications, Japan
Liru Zhang, The University of Electro-Communications, Japan
Tadashi Ohmori, The University of Electro-Communications, Japan

(DM) Data Mining Track
Mining Uncertain Web Log Sequences with Access History Probabilities
Olalekan Kadri, School of Computer Science,University of Windsor, Canada
Christie Ezife, School of Computer Science,University of Windsor, Canada

(CSP) Constraint Solving and Programming Track
Parallel Constraint-Based Local Search on the HA8000 Supercomputer (Abstract)
Yves Caniou, JFLI - CNRS / University of Lyon, Japan
Philippe Codognet, JFLI - CNRS / University of Tokyo, Japan
Daniel Diaz, Universite Paris, France
Salvador Abreu, Universidade de Echora, Portugal

Adaptive Hybridization Strategies
Eric Monfroy, UTFSM and LiNA, France
Carlos Castro, UTFSM, Chile
Broderick Crawford, PUCV, Chile
Christian Figueroa, UTFSM, Chile

(ed) Event Details

WED 2:40 - 5:40 Corridor Level 2
HUMANITIES BUILDING (H)
Poster Session II

(CM) Coordination Models, Languages and Applications Track
Programming Coordination Laws of Artifacts in CArAgO
Marco Sharaglia, Alma Mater Studiorum · Universita’ di Bologna, Italy
Matteo Casadei, Alma Mater Studiorum · Universita’ di Bologna, Italy
Mirko Viroli, Alma Mater Studiorum · Universita’ di Bologna, Italy

(DTTA) Database Theory, Technology, and Applications Track
Mining Uncertain Web Log Sequences with Access History Probabilities
Olalekan Kadri, School of Computer Science,University of Windsor, Canada
Christie Ezife, School of Computer Science,University of Windsor, Canada

Final Program Page 30 SAC 2011, March 21 – 24,
(EC) Applications of Evolutionary Computing Track

A Software Platform for Genetic Algorithms based Parameter Estimation on Digital Sound Synthesizers
Kamer Ali Yuksel, Sabanci University, Turkey
Batuhan Bozkurt, Istanbul Technical University, Turkey
Hamid Ketabdar, Deutsche Telekom Laboratories, TU Berlin, Germany

Applying Genetic Algorithms to Optimize the Power in Tiled SNUCA Chip Multicore Architectures
Aparna Mandke Dani, Indian Institute of Science, Bangalore, India
Bharadwaj Amrutur, Indian Institute of Science, Bangalore, India
Y. N. Srikant, Indian Institute of Science, Bangalore, India

(IE) Intelligent/Innovative Learning Environments Track

Teaching Intelligible Speech to the Autistic Children by Interactive Computer Games
Mirfat Akter Sharmin, Bangladesh University of Engineering and Technology, Bangladesh
Md. Mizanur Rahman, Bangladesh University of Engineering and Technology, Bangladesh
Syed Ishtiaque Ahmed, Bangladesh University of Engineering and Technology, Bangladesh
Md Mustafizur Rahman, Bangladesh University of Engineering and Technology, Bangladesh
S. M. Ferdous, Bangladesh University of Engineering and Technology, Bangladesh

Style Avatar: a Visualization System for Teaching C Coding Style
Jin-Su Lim, Pusan National University, Korea
Jeong-Hoon Ji, Pusan National University, Korea
Yun-Jung Lee, Pusan National University, Korea
Gyun Woo, Pusan National University, Korea

Effects of Scaffoldings on Interactive Diagram Constructions in Educational Interface for Elementary School Teachers Training
Ana Emilia de Melo Queiruz, Federal University of São Francisco Valley, Brazil
Alex Sandro Gomes, Federal University of Pernambuco, Brazil
Claudia Roberta Araújo Gomes, Federal Rural University of Pernambuco, Brazil
Sávio Silveira de Queiruz, Federal Rural University of Espírito Santo, Brazil

(EE) Enterprise Engineering Track

Tool Support for Realising a Common Understanding of Business Documents in Collaborating Enterprises
Usman Wajid, University of Manchester, United Kingdom
Panagiota Gouvas, Singular Logic, Greece
Nikolay Mehandjiev, University of Manchester, United Kingdom
Abdallah Namoun, University of Manchester, United Kingdom

An Architecture Proposal for the Prosumerized Enterprise
Andreas Emrich, German Research Center for Artificial Intelligence, Germany
Alexandra Chapko, German Research Center for Artificial Intelligence, Germany
Christina di Valentin, German Research Center for Artificial Intelligence, Germany
Dirk Werth, German Research Center for Artificial Intelligence, Germany

(MESC) Mediation Services in Computing Environments Track

A Choreography Language for eBusiness Collaboration
Alex Norta, University of Helsinki, Finland

(OOPS) Object Oriented Programming Languages and Systems Track

A Formal Framework for a Functional Language with Adaptable Components
Pascal Cousot, LIPN, France
Christophe Fouqueré, LIPN, France

(PL) Programming Languages Track

Feedback-driven Points-to Analysis
Tobias Gutmann, Linnaeus University, Sweden
Jonas Lundberg, Linnaeus University, Sweden
Welf Löwe, Linnaeus University, Sweden

An Overview of a Proof-Based Approach to Detecting C Vulnerabilities
Amel Mammar, Telecom SudParis, France

(IAR) Information Access and Retrieval Track

Representing a Bilingual Lexicon with Suffix Trees
Jorge Costa, FCT-UNL, Caparica, Portugal
Gabriel Pereira Lopes, FCT-UNL, Caparica, Portugal
Luís Gomes, FCT-UNL, Caparica, Portugal
Luís M. S. Russo, FCT-UNL, Caparica, Portugal

Inferring Situation-Based Interests for Mobile Users: A Case Based Reasoning Approach
Ourdia Bousidghaghen, IRIT-University Paul Sabatier of Toulouse, France
Lynda Tamine, IRIT-University Paul Sabatier of Toulouse, France
Mohand Boughanem, IRIT-University Paul Sabatier of Toulouse, France
(PSC) Programming for Separation of Concerns Track

Structuring Adaptive Replicated Systems with Design Patterns and Aspects
Rodrigo Ramos Couto, Ci&T, Brazil
Rodrigo Pereira Valentim, IBM Global Business Services, Brazil
Udo Fritzke Jr., PUC Minas, Brazil
Luiz Alberto Ferreira Gomes, PUC Minas, Brazil
Daniel Merli Moraes, PUC Minas, Brazil

(SE) Software Engineering Track

A GUI Bug Finding Framework for Android Applications
Cuixiong Hu, University of California, Riverside, United States
Iulian Neamtu, University of California, Riverside, United States

(SOAP) Service Oriented Architecture and Programming Track

Requirements Engineering for Services: An Ontological Framework
Bertrand Verlaire, PReCISE Research Center, University of Namur, Belgium
Ivan Jureta, PReCISE Research Center, University of Namur, Belgium
Stéphane Faulkner, PReCISE Research Center, University of Namur, Belgium

SAC 2012 INVITATION

SAC 2012 will be held in Trento, Italy, in March, 2012. It is hosted by the The Microsoft Research - University of Trento Centre for Computational and Systems Biology. Please check the registration desk for handouts. You can also visit the website at http://www.acm.org/conferences/sac/sac2012/.