

# SAC 2013 Proceedings Table of Content

## Tracks are ordered by themes

| Volume # | Theme                      | Included Tracks   |
|----------|----------------------------|---|
| 1        | AI & Agents                | ASIIS, CIVIA, CMASA, CSP, DM, EC, ROBOT, RS, SWA                  |
|          | Distributed Systems        | CC, DADS, MCA, NETS, SGST, WT                                     |
|          | Information Systems        | COSYS, DS, DTTA, IAR, MMV   |
| 2        | Software Development       | SE, SEGC, SVT, RE   |
|          | System Software & Security | BIO, CM, EE, EMBS, OOPS, OS, PL, PSC, SATTA, SEC, SOAP, TRECK, CF |

## AI & Agents Theme

### Advances in Spatial and Image-based Information Systems Track

**Track Co-Chairs:** Richard Chbeir, University of Bourgogne, France  
 Mir Abolfazl Mostafavi, Université Laval, Canada  
 Ki-Joune Li, Pusan National University, Korea  
 Kokou Yetongnon, University of Bourgogne, France

**Track Editorial**.....1

**Spatial Interpolation: an Analytical Comparison Between Kriging and RBF Networks**.....2

*Vinicius Sousa Fazio, Universidade Federal de Santa Catarina, Brazil*  
*Mauro Roisenberg, Universidade Federal de Santa Catarina, Brazil*

**Faster Construction of Ball-Partitioning-based Metric Access Methods**.....8

*Jéssica A. de Souza, Universidade Federal do ABC (UFABC), Brazil*  
*Humberto L. Razente, Universidade Federal de Uberlandia (UFU), Brazil*  
*Maria Camila N. Barioni, Universidade Federal de Uberlandia (UFU), Brazil*

### Poster Papers

**Building a Scalable Spatial OLAP System**.....13

*Oliver Baltzer, FlagstoneRe, Canada*  
*Andrew Rau-Chaplin, Dalhousie University, Canada*  
*Norbert Zeh, Dalhousie University, Canada*

### Computational Intelligence and Video & Image Analysis Track

**Track Co-Chairs:** Agostinho Rosa, LaSEEB - ISR – IST - Technical University of Lisbon, Portugal  
 Yin-Fu Huang, National Yunlin University of Science and Technology, Taiwan

**Track Editorial**.....15

**A Multiple Feature Vector Framework for Forest Species Recognition**.....16

*Paulo Cavalin, Universidade Federal do Tocantins, Brazil*  
*Jefferson Martins, Universidade Federal Tecnológica do Paraná, Brazil*

*Marcelo Kapp, Universidade Federal da Integração Latino Americana, Brazil*  
*Luiz Oliveira, Universidade Federal do Paraná, Brazil*

**Towards Skeleton Biometric Identification Using the Microsoft Kinect Sensor .....21**

*Ricardo Araujo, UFPel, Brazil*  
*Gustavo Grana, UFPel, Brazil*  
*Virginia Andersson, UFPel, Brazil*

**Indoor Localization using SLAM in parallel with a Natural Marker Detector.....27**

*Lucas Teixeira, PUC-Rio, Brazil*  
*Alberto Raposo, PUC-Rio, Brazil*  
*Marcelo Gattass, PUC-Rio, Brazil*

**Convexity Local Contour Sequences for Gesture Recognition.....34**

*Pablo Barros, POLI/UPE, Brazil*  
*Nestor Junior, POLI/UPE, Brazil*  
*Juvenal Bisneto, POLI/UPE, Brazil*  
*Bruno Fernandes, POLI/UPE, Brazil*  
*Byron Leite, POLI/UPE, Brazil*  
*Sérgio Fernandes, POLI/UPE, Brazil*

**An Evolutionary Spline Fitting Algorithm for Identifying Filamentous Cyanobacteria.....40**

*Jeremy Porter, Dalhousie University, Canada*  
*Dirk Arnold, Dalhousie University, Canada*

**Gesture Unit Segmentation using Support Vector Machines: Segmenting Gestures from Rest Positions .....46**

*Renata Cristina Barros Madeo, University of São Paulo, Brazil*  
*Clodoaldo Aparecido de Moraes Lima, University of São Paulo, Brazil*  
*Sarajane Marques Peres, University of São Paulo, Brazil*

**Poster Papers**

**A Data Reduction and Organization Approach for Efficient Image Annotation.....53**

*Priscila T. M. Saito, Institute of Computing, University of Campinas - UNICAMP, Brazil*  
*Pedro J. de Rezende, Institute of Computing, University of Campinas - UNICAMP, Brazil*  
*Alexandre X. Falcão, Institute of Computing, University of Campinas - UNICAMP, Brazil*  
*Celso T. N. Suzuki, Institute of Computing, University of Campinas - UNICAMP, Brazil*  
*Jancarlo F. Gomes, Institute of Computing, Institute of Biology, University of Campinas - UNICAMP, Brazil*

**Cooperative Multi-Agent Systems and Applications Track**

**Track Co-Chairs:** Rui P. Rocha, University of Coimbra, Portugal  
Matthew E. Taylor, Washington State University, USA

**Track Editorial.....56**

**An Intelligent Building that Listens to Your Needs.....58**

*Der-Yeuan Yu, ETH Zurich, Switzerland*  
*Ettore Ferranti, ABB Corporate Research, Switzerland*  
*Hadeli Hadeli, ABB Switzerland Ltd., Switzerland*

|  |           |
|--|-----------|
| <b>A Collective Robotic Architecture in Search and Rescue Scenarios.....</b>               | <b>64</b> |
| <i>Micael Couceiro, Institute of Systems and Robotics, University of Coimbra, Portugal</i> |           |
| <i>David Portugal, Institute of Systems and Robotics, University of Coimbra, Portugal</i>  |           |
| <i>Rui Rocha, Institute of Systems and Robotics, University of Coimbra, Portugal</i>       |           |

|   |           |
|---|-----------|
| <b>Performance Based Task Assignment in Multi-Robot Patrolling.....</b> | <b>70</b> |
| <i>Charles Pippin, Georgia Institute of Technology, USA</i>             |           |
| <i>Henrik Christensen, Georgia Institute of Technology, USA</i>         |           |
| <i>Lora Weiss, Georgia Institute of Technology, USA</i>                 |           |

|   |           |
|---|-----------|
| <b>Towards Solving an Obstacle Problem by the Cooperation of UAVs and UGVs.....</b> | <b>77</b> |
| <i>Shigeo Nakamura, University of Electro-Communications, Japan</i>                 |           |
| <i>Hiroyuki Nakagawa, University of Electro-Communications, Japan</i>               |           |
| <i>Yasuyuki Tahara, University of Electro-Communications, Japan</i>                 |           |
| <i>Akihiko Ohsuga, University of Electro-Communications, Japan</i>                  |           |

### **Poster Papers**

|   |           |
|---|-----------|
| <b>Towards a Domain Specific Modeling Language for Agent-Based Models In Land Use Science .....</b> | <b>83</b> |
| <i>Cédric Grueau, Escola Superior de Tecnologia de Setúbal, Portugal</i>                            |           |
| <i>João Araujo, Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa, Portugal</i>     |           |

### **Constraint Solving and Programming Track**

**Track Co-Chairs:** Stefano Bistarelli, Università di Perugia, Italy and IIT-CNR, Pisa, Italy  
Eric Monfroy, LINA-Université de Nantes, France  
Barry O'Sullivan, University College Cork, Ireland

|                             |           |
|-----------------------------|-----------|
| <b>Track Editorial.....</b> | <b>85</b> |
|-----------------------------|-----------|

|  |           |
|--|-----------|
| <b>Many-to-Many Interchangeable Sets of Values in CSPs.....</b>                | <b>86</b> |
| <i>Chavalit Likitvivatanavong, National University of Singapore, Singapore</i> |           |
| <i>Roland Yap, National University of Singapore, Singapore</i>                 |           |

|   |           |
|---|-----------|
| <b>Risk-Neutral Bounded Max-Sum for Distributed Constraint Optimization .....</b> | <b>92</b> |
| <i>Javier Larrosa, Universitat Politècnica de Catalunya, Spain</i>                |           |
| <i>Emma Rollon, Universitat Politècnica de Catalunya, Spain</i>                   |           |

|  |           |
|--|-----------|
| <b>Dynamic Virtual Arc Consistency.....</b>            | <b>98</b> |
| <i>Hiep Nguyen, INRA - BIA Toulouse, France</i>        |           |
| <i>Thomas Schiex, INRA - BIA Toulouse, France</i>      |           |
| <i>Christian Bessiere, LIRMM - Montpellier, France</i> |           |

### **Poster Papers**

|   |            |
|---|------------|
| <b>Solving Equations on Words through Boolean Satisfiability.....</b>     | <b>104</b> |
| <i>Michaël Larouche, Université du Québec à Chicoutimi, Canada</i>        |            |
| <i>Sylvain Hallé, Université du Québec à Chicoutimi, Canada</i>           |            |
| <i>Alexandre Blondin Massé, Université du Québec à Chicoutimi, Canada</i> |            |
| <i>Sébastien Gaboury, Université du Québec à Chicoutimi, Canada</i>       |            |

## Data Mining Track

**Track Co-Chairs:** Hasan Jamil, University of Idaho, United States  
Raymond Wong, University of New South Wales, Australia

**Track Editorial**.....107

**Out-Of-Bag Discriminative Graph Mining** .....109

*Andreas Maunz, Institute for Physics, Germany*  
*David Vorgrimmmler, Institute for Physics, Switzerland*  
*Christoph Helma, in-silico Toxicology, Switzerland*

**A Supervised Machine Learning Classification Algorithm for Research Articles**.....115

*Leonidas Akritidis, University of Thessaly, Greece*  
*Panayiotis Bozanis, University of Thessaly, Greece*

**Discovering Influential Nodes from Trust Network** .....121

*Sabbir Ahmed, University of Windsor, Canada*  
*Christie Ezeife, University of Windsor, Canada*

**Incremental Linear Model Trees on Massive Datasets: Keep it Simple, Keep it Fast** .....129

*Andreas Hapfelmeier, TU München, Germany*  
*Jana Schmidt, TU München, Germany*  
*Stefan Kramer, Johannes Gutenberg-Universität Mainz, Germany*

**Model Selection Based Product Kernel Learning for Regression on Graphs**.....136

*Madeleine Seeland, Technische Universität München, Germany*  
*Stefan Kramer, Johannes Gutenberg-Universität Mainz, Germany*  
*Bernhard Pfahringer, The University of Waikato, New Zealand*

**An Algorithm for Discovering Clusters of Different Densities or Shapes in Noisy Data Sets** .....144

*Fereshte Khani, Sharif University of Technology, Iran*  
*Mohammad Javad Hosseini, Sharif University of Technology, Iran*  
*Ahmad Ali Abin, Sharif University of Technology, Iran*  
*Hamid Beigy, Sharif University of Technology, Iran*

**Comparing Relational and Non-relational Algorithms for Clustering Propositional Data**.....150

*Robson Motta, University of Sao Paulo, Brazil*  
*Bruno Nogueira, University of Sao Paulo, Brazil*  
*Alipio Jorge, University of Porto, Portugal*  
*Alneu Lopes, University of Sao Paulo, Brazil*  
*Solange Rezende, University of Sao Paulo, Brazil*  
*Maria Cristina Oliveira, University of Sao Paulo, Brazil*

**Speeding up Graph Clustering via MDTree-based Compression**.....156

*Paolo Serafino, DEIS - University of Calabria, Italy*

## Poster Papers

**TNS: Mining Top-K Non-Redundant Sequential Rules** .....164

*Philippe Fournier-Viger, University of Moncton, Canada*  
*Vincent S. Tseng, National Cheng Kung University, Taiwan*

|  |            |
|--|------------|
| <b>Learning Non-Linear Classifiers with a Sparsity Constraint using L1 Regularization.....</b>                               | <b>167</b> |
| <i>Mathieu Blondel, Kobe University, Japan</i>   |            |
| <i>Kazuhiro Seki, Kobe University, Japan</i>   |            |
| <i>Kuniaki Uehara, Kobe University, Japan</i>  |            |
| <b>Empowering Automatic Data-Center Management with Machine Learning.....</b>  | <b>170</b> |
| <i>Josep Ll. Berral, U. Politecnica de Catalunya, Spain</i>  |            |
| <i>Ricard Gavaldà, U. Politecnica de Catalunya, Spain</i>  |            |
| <i>Jordi Torres, U. Politecnica de Catalunya and Barcelona Supercomputing Center, Spain</i>                                  |            |
| <b>Stream Mining of Frequent Sets with Limited Memory .....</b>  | <b>173</b> |
| <i>Juan J. Cameron, University of Manitoba, Canada</i>   |            |
| <i>Alfredo Cuzzocrea, ICAR-CNR &amp; Uni. of Calabria, Italy</i>   |            |
| <i>Carson K. Leung, University of Manitoba, Canada</i>   |            |
| <br>   |            |
| <b>Evolutionary Computing Track</b>  |            |
| <b>Track Co-Chairs:</b> Federico Divina, Pablo de Olavide University, Spain  |            |
| Raúl Giráldez Rojo, Pablo de Olavide University, Spain   |            |
| <b>Evolutionary Optimization of Wetlands Design .....</b>  | <b>176</b> |
| <i>Marco Gaudesi, Politecnico di Torino, Italy</i>   |            |
| <i>Andrea Marion, University of Padova, Italy</i>  |            |
| <i>Tommaso Musner, University of Padova, Italy</i>   |            |
| <i>Giovanni Squillero, Politecnico di Torino, Italy</i>  |            |
| <i>Alberto Tonda, UMR 782 GMPA, INRA, France</i>   |            |
| <b>Disguised Malware Script Detection System Using Hybrid Genetic Algorithm.....</b>   | <b>182</b> |
| <i>Jinhyun Kim, Seoul National University, Korea</i>   |            |
| <i>Byung-Ro Moon, Seoul National University, Korea</i>   |            |
| <b>Automatic Generation of Evolutionary Operators: a Study with Mutation Strategies for the Differential Evolution .....</b> | <b>188</b> |
| <i>Vinícius Melo, UNIFESP, Brazil</i>  |            |
| <i>Grazieli Carosio, IAE, Brazil</i>   |            |
| <b>Using Polynomial Reductions to Test the Suitability of Metaheuristics for Solving NP-complete Problems .....</b>          | <b>194</b> |
| <i>Pablo Rabanal, Universidad Complutense de Madrid, Spain</i>   |            |
| <i>Ismael Rodríguez, Universidad Complutense de Madrid, Spain</i>  |            |
| <b>A Hybrid Compact Genetic Algorithm Applied to the Multi-Level Capacitated Lot Sizing Problem.....</b>                     | <b>200</b> |
| <i>Claudio Toledo, University of São Paulo, Brazil</i>   |            |
| <i>Marcio Arantes, University of São Paulo, Brazil</i>   |            |
| <i>Renato Oliveira, Federal University of Lavras, Brazil</i>   |            |
| <i>Alexandre Delbem, Univeristy of São Paulo, Brazil</i>   |            |

**Poster Papers**

**Optimization Metaheuristics for Minimizing Variance in a Real-World Statistical Application.....206**

*Estevão Costa, Universidade Federal do Espírito Santo, Brazil*

*Fábio Fabris, Universidade Federal do Espírito Santo, Brazil*

*Alexandre Rodrigues Loureiros, Universidade Federal do Espírito Santo, Brazil*

*Hannu Ahonen, Universidade Federal do Espírito Santo, Brazil*

*Flávio Miguel Varejão, Universidade Federal do Espírito Santo, Brazil*

*Rodrigo Ferro, EDP ESCELSA, Brazil*

**Horizontal Partitioning of Very-Large Data Warehouses under Dynamically-Changing Query Workloads via Incremental Algorithms .....208**

*Ladjel Bellatreche, LIAS/ISAE-ENSMA, France*

*Rima Bouchakri, LIAS/ISAE-ENSMA, France*

*Alfredo Cuzzocrea, ICAR-CNR and University of Calabria, Italy*

*Sofian Maabout, LaBRI, France*

**Intelligent Robotics Systems Track**

**Track Co-Chairs:** Denis Wolf, University of Sao Paulo, Brazil

Fernando S. Osorio, University of Sao Paulo, Brazil

Luiz Chaimowicz, Federal University of Minas Gerais, Brazil

**Leader-Follower Formation Control of Multiple nonholonomic Robots Based on Backstepping.....211**

*Zhaoxia Peng, Ecole Centrale de Lille, France*

*Guoguang Wen, Ecole Centrale de Lille, France*

*Ahmed Rahmani, Ecole Centrale de Lille, France*

**A Kalman Filter Based Approach to Probabilistic Gas Distribution Mapping.....217**

*Jose Luis Blanco, University of Almeria, Spain*

*Javier G. Monroy, University of Malaga, Spain*

*Javier Gonzalez-Jimenez, University of Malaga, Spain*

*Achim Lilienthal, Orebro University, Sweden*

**An Investigation into the Development of Service-Oriented Robotic Systems .....223**

*Lucas Bueno Ruas Oliveira, University of São Paulo - USP, Brazil*

*Fernando Osório, University of São Paulo - USP, Brazil*

*Elisa Yumi Nakagawa, University of São Paulo - USP, Brazil*

**Poster Papers**

**A Feasibility Analysis on Using Bathymetry for Navigation of Autonomous Underwater Vehicles .....229**

*Bharath Kalyan, Acoustic Research Laboratory, TMSI, National University of Singapore, Singapore*

*Mandar Anil Chitre, Acoustic Research Laboratory, TMSI, National University of Singapore, Singapore*

**Towards a Software Tool for Ultrasound Guided Robotic Hip Resurfacing Surgery .....232**

*Paulo Gonçalves, Polytechnic Institute of Castelo Branco, Portugal*

*Pedro Torres, Polytechnic Institute of Castelo Branco, Portugal*

*Jorge Martins, Technical University of Lisbon, Portugal*

**Real Time Autonomous Navigation and Obstacle Avoidance Using a Semi-global Stereo Method.....235**

*Denis Wolf, University of Sao Paulo, Brazil*

*Caio Mendes, University of Sao Paulo, Brazil*

## Recommender Systems: Theory and Applications Track

**Track Co-Chairs:** Prasenjit Mitra, Pennsylvania State University, USA  
Lior Rokach, Ben Gurion University, Israel  
Yehuda Koren, Google Research, Israel

### Heterogeneous Data Fusion via Matrix Factorization for Augmenting Item, Group and Friend Recommendations .....237

*Wei Zeng, University of Electronic Science and Technology, China*  
*Li Chen, Hong Kong Baptist University, Hong Kong*

### Inferring User Utility for Query Revision Recommendation .....245

*Henry Blanco, Faculty of Computer Science, University of Bolzano, Italy*  
*Francesco Ricci, Faculty of Computer Science, University of Bolzano, Italy*

### Recommending Insurance Riders .....253

*Lior Rokach, Ben Gurion University, Israel*  
*Guy Shani, Ben Gurion University, Israel*  
*Bracha Shapira, Ben Gurion University, Israel*  
*Eyal Chapnik, Ben Gurion University, Israel*  
*Gali Siboni, Ben Gurion University, Israel*

### Constructing and Comparing User Mobility Profiles for Location-based Services .....261

*Xihui Chen, University of Luxembourg, Luxembourg*  
*Jun Pang, University of Luxembourg, Luxembourg*  
*Ran Xue, University of Luxembourg, Luxembourg*

### Mining Frequent Itemsets Over Tuple-evolving Data Streams .....267

*Chongsheng Zhang, Henan University, China*  
*Mirjana Mazuran, Politecnico di Milano, Italy*  
*Hamid Mousavi, UCLA, USA*  
*Yuan Hao, University of Science and Technology Beijing, China*  
*Carlo Zaniolo, UCLA, USA*  
*Florent Masseglia, INRIA, France*

## Poster Papers

### Learning Hybrid Recommender Models for Heterogeneous Semantic Data .....275

*Andreas Lommatzsch, TU Berlin, Germany*  
*Benjamin Kille, TU Berlin, Germany*  
*Sahin Albayrak, DAI Lab, Germany*

### Enhancing Social Matrix Factorization with Privacy .....277

*Shahab Mokarizadeh, ICT Royal Institute of Technology (KTH), Sweden*  
*Nima Dokoochaki, ICT Royal Institute of Technology (KTH), Sweden*  
*Ramona Bunea, ICT Royal Institute of Technology (KTH), Sweden*  
*Mihhail Matskin, ICT Royal Institute of Technology (KTH), Sweden*

### Users Segmentations for Recommendation .....279

*Lin Chen, QUT, Australia*  
*Richi Nayak, QUT, Australia*  
*Sangeetha Kutty, QUT, Australia*  
*Yue Xu, QUT, Australia*



## **The Semantic Web and Applications Track**

**Track Co-Chairs:** Hoyoil Han, Marshall University, United States  
Anabela Simões, Polytechnic Institute of Coimbra, Portugal  
Markus Zanker, Alpen-Adria-Universität Klagenfurt, Austria

### **Track Editorial.....281**

#### **Computing Semantic Relatedness using Word Frequency and Layout Information of Wikipedia .....282**

*Patrick Chan, Osaka University, Japan*  
*Yoshinori Hijikata, Osaka University, Japan*  
*Shogo Nishida, Osaka University, Japan*

#### **Improved Text Annotation with Wikipedia Entities .....288**

*Christos Makris, Computer Engineering & Informatics Dept. University of Patras, Greece*  
*Yannis Plegas, Computer Engineering & Informatics Dept. University of Patras, Greece*  
*Evangelos Theodoridis, Computer Engineering & Informatics Dept. University of Patras, Greece*

#### **Semantic News Recommendation Using WordNet and Bing Similarities .....296**

*Michel Capelle, Erasmus University Rotterdam, The Netherlands*  
*Frederik Hogenboom, Erasmus University Rotterdam, The Netherlands*  
*Alexander Hogenboom, Erasmus University Rotterdam, The Netherlands*  
*Flavius Frasinca, Erasmus University Rotterdam, The Netherlands*

#### **Environmental Service Discovery Based on Semantically Annotated OGC Service Descriptions .....303**

*Iker Larizgoitia, STI Innsbruck, Austria*  
*Arturo Beltran, Universitat Jaume I, Spain*  
*Alejandro Llaves, University of Münster, Germany*  
*Ioan Toma, STI Innsbruck, Austria*  
*Patrick Maué, University of Münster, Germany*

#### **A Software Measurement Task Ontology.....311**

*Monalessa Barcellos, Federal University of Espirito Santo, Brazil*  
*Ricardo Falbo, Federal University of Espirito Santo, Brazil*

#### **Enhancing Scientific Information Systems with Semantic Annotations .....319**

*Eric Leclercq, LE2I - University of Bourgogne, FRANCE*  
*Marinette Savonnet, LE2I - University of Bourgogne, FRANCE*

#### **Ontology Acquisition from Web service Descriptions.....325**

*Shahab Mokarizadeh, Royal Institute of Technology (KTH), Sweden*  
*Peep Kungas, University of Tartu, Estonia*  
*Mihhail Matskin, Royal Institute of Technology (KTH), Sweden*

#### **Rank Prediction for Semantically Annotated Resources .....333**

*Pasquale Minervini, Università degli Studi di Bari "Aldo Moro", Italy*  
*Nicola Fanizzi, Università degli Studi di Bari "Aldo Moro", Italy*  
*Claudia d'Amato, Università degli Studi di Bari "Aldo Moro", Italy*  
*Floriana Esposito, Università degli Studi di Bari "Aldo Moro", Italy*



## Poster Papers

|   |            |
|---|------------|
| <b>A Mediator for Statistical Linked Data .....</b> | <b>339</b> |
| <i>Livia Ruback, PUC-Rio, Brazil</i>                |            |
| <i>Sofia Manso, PUC-Rio, Brazil</i>                 |            |
| <i>Sérgio Ortiga, PUC-Rio, Brazil</i>               |            |
| <i>Percy Rivera Salas, PUC-Rio, Brazil</i>          |            |
| <i>Marcia Pesce, PUC-Rio, Brazil</i>                |            |
| <i>Marco Casanova, PUC-Rio, Brazil</i>              |            |
| <i>Karin Breitman, PUC-Rio, Brazil</i>              |            |

## Distributed Systems Theme

### Cloud Computing Track

**Track Co-Chairs:** Umesh Bellur, Indian Institute of Technology, Bombay, India  
Rajiv Ramnath, Ohio State University, USA  
S D Madhu Kumar, National Institute of Technology Calicut, India

|                             |            |
|-----------------------------|------------|
| <b>Track Editorial.....</b> | <b>342</b> |
|-----------------------------|------------|

|  |            |
|--|------------|
| <b>Modeling I/O Interference for Data Intensive Distributed Applications .....</b> | <b>343</b> |
|--|------------|

*Sven Groot, The University Of Tokyo, Japan*  
*Kazuo Goda, The University Of Tokyo, Japan*  
*Daisaku Yokoyama, The University Of Tokyo, Japan*  
*Miyuki Nakano, The University Of Tokyo, Japan*  
*Masaru Kitsuregawa, The University Of Tokyo, Japan*

|   |            |
|---|------------|
| <b>Building an On-Demand Virtual Computing Market in Non-Commercial Communities .....</b> | <b>351</b> |
|---|------------|

*Matthias Steinbauer, Johannes Kepler University Linz, Austria*  
*Ismail Khalil, Johannes Kepler University Linz, Austria*  
*Gabriele Kotsis, Johannes Kepler University Linz, Austria*

|  |            |
|--|------------|
| <b>A Progress and Profile-driven Cloud-VM for Resource-Efficiency and Fairness in e-Science Environments .....</b> | <b>357</b> |
|--|------------|

*José Simão, INESC-ID/ISEL, Portugal*  
*Luís Veiga, INESC-ID/IST, Portugal*

|  |            |
|--|------------|
| <b>Input Data Organization for Batch Processing in Time Window Based Computations.....</b> | <b>363</b> |
|--|------------|

*Leonardo Aniello, University of Rome La Sapienza, Italy*  
*Leonardo Querzoni, University of Rome La Sapienza, Italy*  
*Roberto Baldoni, University of Rome La Sapienza, Italy*

|   |            |
|---|------------|
| <b>GCplace: Geo-cloud based Correlation aware Data Replica Placement.....</b> | <b>371</b> |
|---|------------|

*Zhen Ye, Zhejiang University, China*  
*Shanping Li, Zhejiang University, China*  
*Xiaozhen Zhou, Zhejiang University, China*

|   |            |
|---|------------|
| <b>High-Resolution Spatial Interpolation on Cloud Platforms .....</b> | <b>377</b> |
|---|------------|

*Abdelmounaam Rezgui, New Mexico Tech, USA*

Zaki Malik, Wayne State University, USA  
Chaowei Yang, George Mason University, USA

**Matchmaking of IaaS Cloud Computing Offers Leveraging Linked Data .....383**

Maciej Zaremba, Digital Enterprise Research Institute, National University of Ireland, Ireland  
Sami Bhiri, Digital Enterprise Research Institute, National University of Ireland, Ireland  
Tomas Vitvar, Czech Technical University in Prague, Czech Republic  
Manfred Hauswirth, Digital Enterprise Research Institute, National University of Ireland, Ireland

**Hospitality of Cloud Platforms .....389**

Ashish Agrawal, Indian Institute of Technology Kanpur, India  
Prabhakar T.V., Indian Institute of Technology Kanpur, India

**log2cloud: Log-based Prediction of Cost-Performance Trade-offs for Cloud Deployments.....397**

Diego Perez-Palacin, Universidad de Zaragoza, Spain  
Radu Calinescu, University of York, United Kingdom  
Jose Merseguer, Universidad de Zaragoza, Spain

**Poster Papers**

**Study on Supporting Technology for Operational Procedure Design of IT Systems in Cloud-Era  
Datacenters .....405**

Hiroaki Shikano, Hitachi, Ltd., Japan  
Machiko Asaie, Hitachi, Ltd., Japan  
Junji Yamamoto, Hitachi, Ltd., Japan  
Tatsuya Saito, Hitachi, Ltd., Japan  
Shunsuke Ota, Hitachi, Ltd., Japan  
Keitaro Uehara, Hitachi, Ltd., Japan

**Inter Cloud Capable Dynamic Resource Management with Model of Behavior .....408**

Kiril Schröder, C.v.O. University of Oldenburg, Germany  
Wolfgang Nebel, C.v.O. University of Oldenburg, Germany

**SCALing : SLA-driven Cloud Auto-scaling .....411**

Yousri Kouki, EMN-INRIA, LINA, France  
Thomas Ledoux, EMN-INRIA, LINA, France

**Dependable and Adaptive Distributed Systems Track**

**Track Co-Chairs:** Karl M. Goeschka, Vienna University of Technology, Austria  
Rui Oliveira, Universidade do Minho, Portugal  
Peter Pietzuch, Imperial College London, United Kingdom  
Giovanni Russello, University of Auckland, New Zealand

**Track Editorial.....413**

**Improving Context Interpretation by Using Fuzzy Policies: The Case of Adaptive Video  
Streaming.....415**

Lucas Provensi, University of Oslo, Norway  
Frank Eliassen, University of Oslo, Norway  
Roman Vitenberg, University of Oslo, Norway

Romain Rouvoy, INRIA Lille-Nord Europe, France

**Hyphen: A Hybrid Protocol for Generic Overlay Construction in P2P Environments.....423**

Mouna Allani, Imperial College London, UK

Benoît Garbinato, University of Lausanne, Switzerland

Peter Pietzuch, Imperial College London, UK

**Stheno, a Real-Time Fault-Tolerant P2P Middleware Platform for Light-Train Systems .....431**

Rolando Martins, Universidade do Porto, Portugal

Luis Lopes, Universidade do Porto, Portugal

Fernando Silva, Universidade do Porto, Portugal

Priya Narasimhan, Carnegie Mellon University, USA

**Understanding the Quality of Experience in Modern Distributed Interactive Multimedia Applications in Presence of Failures: Metrics and Analysis .....439**

Narasimha Raghavan Veeraragavan, University of Oslo, Norway

Leonardo Montecchi, University of Florence, Italy

Nicola Nostro, University of Florence, Italy

Andrea Bondavalli, University of Florence, Italy

Roman Vitenberg, University of Oslo, Norway

Hein Meling, University of Stavanger, Norway

**Maximizing Availability of Content in Disruptive Environments by Cross-Layer Optimization .....447**

Minyoung Kim, SRI International, USA

Je-Min Kim, Sungkyunkwan University, Korea

Mark-Oliver Stehr, SRI International, USA

Ashish Gehani, SRI International, USA

Dawood Tariq, SRI International, USA

Jin-Soo Kim, Sungkyunkwan University, Korea

**MoSQL: An Elastic Storage Engine for MySQL.....455**

Alexander Tomic, University of Lugano, Switzerland

Daniele Sciascia, University of Lugano, Switzerland

Fernando Pedone, University of Lugano, Switzerland

**A Multi-Resource Dynamic Load Balancing Algorithm for Cache Systems .....463**

Yu Jia, Beihang University, China

Ivan Brondino, Universidad Politecnica de Madrid, Spain

Ricardo Jimenez-Peris, Universidad Politecnica de Madrid, Spain

Marta Patiño-Martinez, Universidad Politecnica de Madrid, Spain

Dianfu Ma, Beihang University, China

**Adaptive Monitoring of Web-based Applications: A Performance Study .....471**

João Paulo Magalhães, CIICESI, ESTGF-Polytechnic Institute of Porto, Portugal

Luis Moura Silva, CISUC, University of Coimbra, Portugal

**Experience with a Middleware Infrastructure for Service Oriented Financial Applications .....479**

Jose Pedro Oliveira, ParadigmaXis - Arquitectura e Engenharia de Software, S.A., Portugal

Jose Pereira, INESC TEC & U. Minho, Portugal

**Identifying Incompatible Service Implementations using Pooled Decision Trees .....485**

*Christian Inzinger, Vienna University of Technology, Austria*

*Waldemar Hummer, Vienna University of Technology, Austria*

*Benjamin Satzger, Vienna University of Technology, Austria*

*Philipp Leitner, Vienna University of Technology, Austria*

*Schahram Dustdar, Vienna University of Technology, Austria*

**Poster Papers**

**Improving Transaction Abort Rates Without Compromising Throughput Through Judicious Scheduling.....493**

*Ana Nunes, INESC TEC & U. Minho, Portugal*

*José Pereira, INESC TEC & U. Minho, Portugal*

**Towards a Ranking Framework for Software Components.....495**

*Dhyanesh Chaudhari, Queen's University, Canada*

*Mohammad Zulkernine, Queen's University, Canada*

*Komminist Weldemariam, Queen's University, Canada*

**Mobile Computing and Applications Track**

**Track Co-Chairs:** Hong Va Leong, The Hong Kong Polytechnic University, Hong Kong, China  
Alvin Chan, The Hong Kong Polytechnic University, Hong Kong, China

**Track Editorial.....497**

**Google Play Is Not A Long Tail Market: An Empirical Analysis of App Adoption on the Google Play App Market.....499**

*Nan Zhong, ETH Zurich, Switzerland*

*Florian Michahelles, ETH Zurich, Switzerland*

**iLauncher: An Intelligent Launcher for Mobile Apps based on Individual Usage Patterns.....505**

*Li-Yu Tang, Graduate Institute of Electrical Engineering, National Taiwan University, Taiwan*

*Pi-Cheng Hsiu, Research Center for Information Technology Innovation, Academia Sinica, Taiwan*

*Jiun-Long Huang, Department of Computer Science, National Chiao Tung University, Taiwan*

*Ming-Syan Chen, Research Center for Information Technology Innovation, Academia Sinica, Taiwan*

**iPrevention: Towards a Novel Real-time Smartphone-based Fall Prevention System.....513**

*A.K.M. Jahangir Alam Majumder, Ubicomp Lab, Marquette University, USA*

*Farzana Rahman, Ubicomp Lab, Marquette University, USA*

*Ishmat Zerin, Ubicomp Lab, Marquette University, USA*

*Ebel Jr. William, ECE, Marquette University, USA*

*Dr. Sheikh Iqbal Ahamed, Ubicomp Lab, Marquette University, USA*

**Predictive Indoor Navigation using Commercial Smart-phones.....519**

*Balajee Kannan, GE Global Research, USA*

*Felipe Meneguzzi, PUCRS, Brazil*

*Chet Gnegy, University of Pittsburgh, USA*

*Evan Glasgow, Carnegie Mellon University, USA*

*Piotr Yordanov, American University of Beirut, Lebanon*

*Bernardine Dias, Carnegie mellon University, USA*

*Katia Sycara, Carnegie mellon University, USA*

|   |            |
|---|------------|
| <b>Cross-Platform Model-Driven Development of Mobile Applications with MD2.....</b>   | <b>526</b> |
| <i>Henning Heitkötter, University of Münster, Germany</i>   |            |
| <i>Tim A. Majchrzak, University of Münster, Germany</i>   |            |
| <i>Herbert Kuchen, University of Münster, Germany</i>   |            |
| <b>LOCCAM - Loosely Coupled Context Acquisition Middleware.....</b>   | <b>534</b> |
| <i>Marcio Maia, Federal University of Ceara, Brazil</i>   |            |
| <i>Windson Viana, Federal University of Ceara, Brazil</i>   |            |
| <i>Andre Fonteles, Federal University of Ceara, Brazil</i>  |            |
| <i>Benedito Neto, Federal University of Ceara, Brazil</i>   |            |
| <i>Romulo Gadelha, Federal University of Ceara, Brazil</i>  |            |
| <i>Rossana Andrade, Federal University of Ceara, Brazil</i>   |            |
| <b>Eliminating the XML Overhead in Embedded XML Languages .....</b>   | <b>542</b> |
| <i>Sven Groppe, University of Lübeck, Germany</i>   |            |
| <i>Björn Schütt, University of Lübeck, Germany</i>  |            |
| <i>Stefan Werner, University of Lübeck, Germany</i>   |            |
| <b>Broadcast Cancellation in Search Mechanisms .....</b>  | <b>548</b> |
| <i>Rui Lima, Universidade Lusitana, Portugal</i>  |            |
| <i>Carlos Baquero, Universidade do Minho, Portugal</i>  |            |
| <i>Hugo Miranda, Universidade de Lisboa, Portugal</i>   |            |
| <b>Sensor-Field Modeling Based on In-Network Data Prediction: An Efficient Strategy For Answering Complex Queries in Wireless Sensor Networks .....</b> | <b>554</b> |
| <i>Jose Everardo Bessa Maia, State University of Ceara, Brazil</i>  |            |
| <i>Angelo Brayner, University of Fortaleza, Brazil</i>  |            |
| <b>Distributed and Efficient Algorithm for Self-reconfiguration of MEMS Microrobots .....</b>   | <b>560</b> |
| <i>Hicham Lakhlef, Disc, University of Franche-Comté, France</i>  |            |
| <i>Hakim Mabed, Disc, University of Franche-Comté, France</i>   |            |
| <i>Julien Bourgeois, Disc, University of Franche-Comté, France</i>  |            |
| <b>Poster Papers</b>  |            |
| <b>Participatory Sensing based Traffic Condition Monitoring using Horn Detection.....</b>   | <b>567</b> |
| <i>Rohan Banerjee, Tata Consultancy Services, India</i>   |            |
| <i>Aniruddha Sinha, Tata Consultancy Services, India</i>  |            |
| <i>Arindam Saha, Tata Consultancy Services, India</i>   |            |
| <b>Towards a Total Recall: An Activity Tracking and Recall Mechanism for Mobile Devices.....</b>  | <b>570</b> |
| <i>Sangho Yi, Samsung Electronics, Korea</i>  |            |
| <i>Jaehyuck Shin, Samsung Electronics, Korea</i>  |            |
| <i>Yoonkyong Lee, Samsung Electronics, Korea</i>  |            |
| <i>Hyun-Jin Choi, Samsung Electronics, Korea</i>  |            |
| <b>Radio Resource Management in Coordinated Antenna System Deployments .....</b>  | <b>573</b> |
| <i>Vinay Bheemesh, Toshiba Research Europe Ltd., UK</i>   |            |
| <i>Parag Kulkarni, Toshiba Research Europe Ltd., UK</i>   |            |
| <i>Fengming Cao, Toshiba Research Europe Ltd., UK</i>   |            |

## Networking Track

**Track Co-Chairs:** Mario Freire, University of Beira Interior, Portugal  
Marilia Curado, University of Coimbra, Portugal  
Manuela Pereira, University of Beira Interior, Portugal  
Teresa Vazão, IST/INESC ID Lisboa, Portugal

**Track Editorial.....576**

### **A Semi-Supervised Graph-Based Algorithm for Detecting Outliers in Online-Social-Networks.....577**

*Reza Hassanzadeh, Queensland University of Technology, Australia*

*Richi Nayak, Queensland University of Technology, Australia*

### **Service-Centric Networking Extensions .....583**

*Torsten Braun, Universität Bern, Switzerland*

*Andreas Mauthe, Lancaster University, UK*

*Vasilios Siris, Athens University of Economics and Business, Greece*

### **Bounded Gossip: A Gossip Protocol for Large-Scale Datacenters .....591**

*Miguel Branco, Instituto Superior Técnico / INESC-ID, Portugal*

*João Leitão, Instituto Superior Técnico / INESC-ID, Portugal*

*Luís Rodrigues, Instituto Superior Técnico / INESC-ID, Portugal*

### **DoS-Resilient Virtual Networks through Multipath Embedding and Opportunistic Recovery .....597**

*Rodrigo Oliveira, UFRGS, Brazil*

*Leonardo Bays, UFRGS, Brazil*

*Daniel Marcon, UFRGS, Brazil*

*Miguel Neves, UFRGS, Brazil*

*Luciana Buriol, UFRGS, Brazil*

*Luciano Gaspar, UFRGS, Brazil*

*Marinho Barcellos, UFRGS, Brazil*

### **A Novel Demand-Aware Fairness Metric for IEEE 802.11 Wireless Networks .....603**

*Dmitriy Kuptsov, HIIT, Aalto University, Finland*

*Boris Nechaev, HIIT, Aalto University, Finland*

*Andrey Lukyanenko, Aalto University, Finland*

*Andrei Gurtov, CWC, University of Oulu, Finland*

### **A Delivery Method considering Communication Loads for Sensor Data Stream with Different Collection Cycles .....611**

*Tomoya Kawakami, Cybermedia Center, Osaka University, Japan*

*Yoshimasa Ishi, Cybermedia Center, Osaka University, Japan*

*Tomoki Yoshihisa, Cybermedia Center, Osaka University, Japan*

*Yuuichi Teranishi, Cybermedia Center, Osaka University, Japan*

### **A Decentralized Utility-based Grid Scheduling Algorithm .....619**

*Joao Vasques, Inesc-Id, Portugal*

*Luis Veiga, Inesc-Id, Portugal*



**On the load balancing of virtual networks in Distributed Clouds .....625**

*Glauco Gonçalves, Federal University of Pernambuco (UFPE), Brazil*

*Patricia Endo, Federal University of Pernambuco (UFPE), Brazil*

*André Palhares, Federal University of Pernambuco (UFPE), Brazil*

*Marcelo Santos, Federal University of Pernambuco (UFPE), Brazil*

*Judith Kelner, Federal University of Pernambuco (UFPE), Brazil*

*Djamel Sadok, Federal University of Pernambuco (UFPE), Brazil*

**A Flow-based Optimization Model for Throughput-Oriented Relay Node Placement in Wireless Sensor Networks.....632**

*Eduardo Feo Flushing, Dalle Molle Institute for Artificial Intelligence, Switzerland*

*Gianni A. Di Caro, Dalle Molle Institute for Artificial Intelligence, Switzerland*

**ABOI: A Novel Strategy to Mitigate the Blocking due to Outdated Information in OCS/OBS Network.....640**

*Igo Moura, Universidade Federal do Piauí, Brazil*

*Felipe Mazullo, Universidade Federal do Piauí, Brazil*

*José Maranhão Carneiro, Universidade Estadual de Campina, Brazil*

*André Soares, Universidade Federal do Piauí, Brazil*

**Poster Papers**

**isBF: Scalable In-Packet Bloom Filter Based Multicast .....646**

*Ilya Nikolaevskiy, Helsinki Institute for Information Technology, Finland*

*Andrey Lukyanenko, Aalto University, Finland*

*Tatiana Polishchuk, Helsinki Institute for Information Technology, Finland*

*Valentin Polishchuk, University of Helsinki, Finland*

*Andrei Gurtov, Centre for Wireless Communications, Finland*

**A Backward-Compatible Protocol for Inter-routing over Heterogeneous Overlay Networks .....649**

*Giang Ngo Hoang, University of Nice Sophia Antipolis, France*

*Luigi Liquori, National Institute for Research in Computer Science and Control, France*

*Vincenzo Ciancaglini, National Institute for Research in Computer Science and Control, France*

*Petar Maksimovic, Mathematical Institute of the Serbian Academy of Sciences and Arts, Serbia*

*Hung Nguyen Chan, Vietnam Research Institute of Electronics, Informatics and Automation, Vietnam*

**Smart Grids and Smart Technologies Track**

**Track Co-Chairs:** Gail-Joon Ahn, Arizona State University, USA

Dongwan Shin, New Mexico Tech, USA

**Track Editorial.....651**

**Privacy-Friendly Tasking and Trading of Energy in Smart Grids.....652**

*Tassos Dimitriou, Athens Information Technology, Greece*

*Ghassan Karame, NEC Laboratories Europe, Germany*

**A Combined Structural and Dynamic Modelling Approach for Dependability Analysis in Smart Grid .....660**

*Jonas Wäfler, Norwegian University of Science and Technology, Norway*

*Poul E. Heegaard, Norwegian University of Science and Technology, Norway*



**On the Security of Distributed Power System State Estimation under Targeted Attacks .....666**

*Ognjen Vuković, School of Electrical Engineering, KTH Royal Institute of Technology, Sweden*

*György Dán, School of Electrical Engineering, KTH Royal Institute of Technology, Sweden*

**Impact Assessment of Smart Meter Grouping on the Accuracy of Forecasting Algorithms .....673**

*Dejan Ilic, SAP Research, Germany*

*Stamatis Karnouskos, SAP Research, Germany*

*Per Goncalves Da Silva, SAP Research, Germany*

*Malte Jacobi, SAP Research, Germany*

**Demand Response Computation for Future Smart Grids Incorporating Wind Power.....680**

*Nihan Çiçek, Boğaziçi University, Turkey*

*Hakan Deliç, Boğaziçi University, Turkey*

**Poster Papers**

**Towards CoSimulating Network and Electrical Systems for Performance Evaluation in Smart Grid .....686**

*Hwantae Kim, Korea University, Korea*

*Wonkyun Park, Korea University, Korea*

*Hwangnam Kim, Korea University, Korea*

**Modeling Fundamentals for Smart Grid enabled Ecodistricts .....688**

*Murat Ahat, University of Versailles St-Quentin-en-Yvelines, France*

*Soufian Ben Amor, University of Versailles St-Quentin-en-Yvelines, France*

*Alain Bui, University of Versailles St-Quentin-en-Yvelines, France*

**A Scalable Communication Infrastructure for Smart Grid Applications using Multicast over Public Networks .....690**

*Sebastian Meiling, Hamburg University of Applied Sciences, Germany*

*Till Steinbach, Hamburg University of Applied Sciences, Germany*

*Thomas C. Schmidt, Hamburg University of Applied Sciences, Germany*

*Matthias Wählisch, Freie Universität Berlin, Germany*

**Web Technologies Track**

**Track Co-Chairs:** Davide Rossi, University of Bologna, Italy

Angelo Di Iorio, University of Bologna, Italy

Stefano Zacchiroli, Université Paris Diderot - Paris 7, France

**Track Editorial.....693**

**The Impact of User-Browser Interaction on Web Performance .....695**

*Raúl Peña-Ortiz, Universitat Politècnica de València, Spain*

*José Antonio Gil, Universitat Politècnica de València, Spain*

*Julio Sahuquillo, Universitat Politècnica de València, Spain*

*Ana Pont, Universitat Politècnica de València, Spain*

**Exploiting Emoticons in Sentiment Analysis.....703**

*Alexander Hogenboom, Erasmus University Rotterdam, The Netherlands*

*Daniella Bal, Erasmus University Rotterdam, The Netherlands*

*Flavius Frasinca, Erasmus University Rotterdam, The Netherlands*

*Malissa Bal, Erasmus University Rotterdam, The Netherlands*  
*Franciska de Jong, Universiteit Twente, The Netherlands*  
*Uzay Kaymak, Eindhoven University of Technology, The Netherlands*

**Extending the Web to Support Personal Network Services.....711**

*John Lyle, The University of Oxford, UK*  
*Claes Nilsson, Sony Mobile, Sweden*  
*Anders Isberg, Sony Mobile, Sweden*  
*Shamal Faily, The University of Oxford, UK*

**Model Words-Driven Approaches for Duplicate Detection on the Web .....717**

*Marnix de Bakker, Erasmus University Rotterdam, The Netherlands*  
*Flavius Frasinca, Erasmus University Rotterdam, The Netherlands*  
*Damir Vandić, Erasmus University Rotterdam, The Netherlands*  
*Uzay Kaymak, Eindhoven University of Technology, The Netherlands*

**Detecting Tip Spam in Location-based Social Networks .....724**

*Helen Costa, Federal University of Ouro Preto, Brazil*  
*Fabricio Benevenuto, Federal University of Ouro Preto, Brazil*  
*Luiz Henrique de Campos Merschmann, Federal University of Ouro Preto, Brazil*

**Discovering Local Attractions from Geo-Tagged Photos.....730**

*Ombretta Gaggi, Dept. of Mathematics, University of Padua, Italy*

**Supporting Entailment Constraints in the Context of Collaborative Web Applications.....736**

*Patrick Gaubatz, University of Vienna, Austria*  
*Uwe Zdun, University of Vienna, Austria*

**Feature-based Object Identification for Web Automation.....742**

*Christoph Herzog, Vienna University of Technology, DBAI Group, Austria*  
*Iraklis Kordomatis, Vienna University of Technology, DBAI Group, Austria*  
*Wolfgang Holzinger, Vienna University of Technology, DBAI Group, Austria*  
*Ruslan Fayzrakhmanov, Vienna University of Technology, DBAI Group, Austria*  
*Bernhard Krüpl-Sypien, Vienna University of Technology, DBAI Group, Austria*

**Service Farming: An Ad-hoc and QoS-aware Web Service Composition Approach .....750**

*Wenbin LI, INSA-Lyon, France*  
*Youakim BADR, INSA-Lyon, France*  
*Frédérique BIENNIER, INSA-Lyon, France*

**Poster Papers**

**Designing a 3D Widget Library for WebGL Enabled Browsers.....757**

*Anna-Liisa Mattila, Tampere U of Tech, Finland*  
*Tommi Mikkonen, Tampere U of Tech, Finland*

**Process-aware Web Programming with Jolie .....761**

*Fabrizio Montesi, IT University of Copenhagen, Denmark*

# Information Systems Theme

## **Cooperative Systems Track**

**Track Co-Chairs:** Rachid Anane, Coventry University, United Kingdom  
David Parker, Oxford University, United Kingdom

**Track Editorial**.....764

**Supporting Distributed Software Development through Context Awareness on Software Artifacts:  
The DiSEN-CollaborAR Approach**.....765

*Rafael Leonardo Vivian, State University of Maringá, Brazil*  
*Elisa Hatsue Moriya Huzita, State University of Maringá, Brazil*  
*Gislaine Camila Lapasini Leal, State University of Maringá, Brazil*

**A Publication-Subscription Interaction Schema for Desktop Grid Computing**.....771

*Leila Abidi, Université Paris 13, France*  
*Christophe Cerin, Université Paris 13, France*  
*Jean-Christophe Dubacq, Université Paris 13, France*  
*Mohamed Jemni, Université de Tunis, Tunisia*

**Distributed Dynamic Data Driven Prediction Approach based on Reinforcement Learning  
Approach** .....779

*Szu-Yin Lin, Institute of Information Management, National Chiao-Tung University, Taiwan*  
*Kuo-Ming Chao, Faculty of Computing and Engineering, Coventry University, UK*  
*Chi-Chun Lo, Institute of Information Management, National Chiao-Tung University, Taiwan*  
*Nick Godwin, Faculty of Computing and Engineering, Coventry University, UK*

## **Poster Papers**

**HawkEye: a Tool for BP Editing and Collaborative BPM** .....785

*Riccardo Cognini, University of Camerino, Italy*  
*Damiano Falcioni, University of Camerino, Italy*  
*Andrea Polini, University of Camerino, Italy*  
*Alberto Polzonetti, University of Camerino, Italy*  
*Barbara Re, University of Camerino, Italy*

## **Data Streams Track**

**Track Co-Chairs:** Pedro Rodrigues, University Porto, Portugal  
Albert Bifet, Yahoo! Research Barcelona, Spain  
Shonali Krishnaswamy, Monash University, Australia  
João Gama, LIAAD-University Porto, Portugal

**Track Editorial**.....787

**Continuous Query Processing with Concurrency Control: Reading Updatable Resources  
Consistently** .....788

*Masafumi Oyamada, University of Tsukuba, Japan*  
*Hideyuki Kawashima, University of Tsukuba, Japan*  
*Hiroyuki Kitagawa, University of Tsukuba, Japan*

**Novelty Detection Algorithm for Data Streams Multi-Class Problems.....795**

*Elaine Faria, University of São Paulo/ Federal University of Uberlândia, Brazil*

*João Gama, University of Porto, Portugal*

*Andre Carvalho, University of São Paulo, Brazil*

**Efficient Data Stream Classification via Probabilistic Adaptive Windows.....801**

*Albert Bifet, Yahoo! Research Barcelona, Spain*

*Jesse Read, Universidad Carlos III, Spain*

*Bernhard Pfahringer, University of Waikato, New Zealand*

*Geoff Holmes, University of Waikato, New Zealand*

**STONE: A Stream-based DDoS Defense Framework.....807**

*Mar Callau-Zori, Universidad Politécnica de Madrid, Spain*

*Vincenzo Gulisano, Universidad Politécnica de Madrid, Spain*

*Zhang Fu, Chalmers University of Technology, Sweden*

*Ricardo Jiménez-Peris, Universidad Politécnica de Madrid, Spain*

*Marina Papatriantafilou, Chalmers University of Technology, Sweden*

*Marta Patiño-Martínez, Universidad Politécnica de Madrid, Spain*

**Poster Papers**

**Random Rules from Data Streams.....813**

*Ezilda Almeida, LIAAD - INESC Porto L.A., Portugal*

*Petr Kosina, LIAAD - INESC Porto L.A and Fac.~of Informatics, Masaryk University, Portugal*

*João Gama, LIAAD - INESC Porto L.A and Fac. of Economics, University of Porto, Portugal*

**An Adaptive Regression Tree for Non-stationary Data Streams.....815**

*Ameneh Gholipour, Sharif University of Technology, Iran*

*Mohammad Javad Hosseini, Sharif University of Technology, Iran*

*Hamid Beigy, Sharif University of Technology, Iran*

**Database Theory, Technology and Applications Track**

**Track Co-Chairs:** Junping Sun, Nova Southeastern University, United States

Ramzi A. Haraty, Lebanese American University, Lebanon

Apostolos Papadopoulos, Aristotle University, Greece

**Track Editorial.....817**

**Driver Input Selection for Main-Memory Multi-Way Joins .....818**

*Emmanouil Valsomatzis, Aalborg University, Denmark*

*Anastasios Gounaris, AUTH, Greece*

**Adaptive Memory-aware Chunk Sizing Techniques for Data-intensive Queries over Web Services .....826**

*Anastasia Theodouli, AUTH, Hellas*

*Anastasios Gounaris, AUTH, Hellas*

**Efficient XML Duplicate Detection Using an Adaptive Two-level Optimization.....832**

*Luís Leitão, IST/INESC-ID, Portugal*

*Pável Calado, IST/INESC-ID, Portugal*

**Abstract Program Slicing of Database Query Languages .....838**

*Raju Halder, Indian Institute of Technology Patna, India*

*Agostino Cortesi, Università Ca' Foscari Venezia, Italy*

**CodeBlast: A Two-Stage Algorithm for Improved Program Similarity Matching in Large Software Repositories .....846**

*Anupam Bhattacharjee, Wayne State University, USA*

*Hasan Jamil, University of Idaho, USA*

**Using Maude Rewriting System to Modularize and Extend SQL.....853**

*Scibor Sobieski, University of Lodz, Faculty of Physics and Computer Science, Poland*

*Bartosz Zielinski, University of Lodz, Faculty of Physics and Computer Science, Poland*

**Extracting Differences Between Regular Tree Grammars.....859**

*Kazuma Horie, University of Tsukuba, Japan*

*Nobutaka Suzuki, University of Tsukuba, Japan*

**Poster Papers**

**Reducing Data Transfer for Charts on Adaptive Web Sites .....865**

*Giuseppe Burtini, UBC Okanagan, Canada*

*Scott Fazackerley, UBC Okanagan, Canada*

*Ramon Lawrence, UBC Okanagan, Canada*

**Filtering XFD Toward Interoperability.....868**

*Joshua Amavi, LIFO - Université d'Orléans, France*

*Mirian Halfeld Ferrari, LIFO - Université d'Orléans, France*

**Information Access and Retrieval Track**

**Track Co-Chairs:** Gloria Bordogna, CNR, Italy

Gabriella Pasi, Univ. Milano Bicocca, Italy

**Track Editorial.....870**

**XML Search Personalization Strategies using Query Expansion, Reranking and a Search Engine Modification.....872**

*Luis M. de Campos, University of Granada, Spain*

*Juan M. Fernández-Luna, University of Granada, Spain*

*Juan F. Huete, University of Granada, Spain*

*Eduardo Vicente-López, University of Granada, Spain*

**Discovering Unexpected Information on the basis of Popularity/Unpopularity Analysis of Coordinate Objects and their Relationships .....878**

*Kosetsu Tsukuda, Kyoto University, Japan*

*Hiroaki Ohshima, Kyoto University, Japan*

*Mitsuo Yamamoto, Denso IT Laboratory, Japan*

*Hirotoishi Iwasaki, Denso IT Laboratory, Japan*

*Katsumi Tanaka, Kyoto University, Japan*

**Reducing Information Redundancy in Search Results .....886**

*Yannis Plegas, Computer Engineering & Informatics Dept. University of Patras, Greece*  
*Sofia Stamou, Patras University, Ionian University, Greece*

**Predicting Query Reformulation Type from User Behavior .....894**

*Kazutoshi Umemoto, Kyoto University, Japan*  
*Satoshi Nakamura, Kyoto University and JST CREST, Japan*  
*Takehiro Yamamoto, Kyoto University and JST CREST, Japan*  
*Katsumi Tanaka, Kyoto University, Japan*

**Determining Language Variant in Microblog Messages.....902**

*Gustavo Laboreiro, Universidade do Porto & Labs SAPO UP, Portugal*  
*Matko Bošnjak, , Portugal*  
*Luís Sarmiento, Labs SAPO UP, Portugal*  
*Eduarda Rodrigues, DEI - Faculdade de Engenharia, Universidade do Porto, Portugal*  
*Eugénio Oliveira, LIACC / DEI - Faculdade de Engenharia, Universidade do Porto, Portugal*

**gSVD++: Supporting Implicit Feedback on Recommender Systems with Metadata Awareness.....908**

*Marcelo Manzato, University of Sao Paulo, Brazil*

**Effectiveness of State-of-the-art Features for Microblog Search.....914**

*Firas Damak, IRIT-University of Toulouse, France*  
*Karen Pinel-Sauvagnat, IRIT-University of Toulouse, France*  
*Guillaume Cabanac, IRIT-University of Toulouse, France*  
*Mohand Boughanem, IRIT-University of Toulouse, France*

**Lattice Navigation for Collaborative Filtering by means of (Fuzzy) Formal Concept Analysis.....920**

*Sabrina Senatore, Università degli Studi di Salerno, Italy*  
*Gabriella Pasi, Università degli Studi di Milano Bicocca, Italy*

**Text Clustering using One-Mode Projection of Document-Word Bipartite Graphs .....927**

*Ajitesh Srivastava, Department of CSIS, BITS Pilani, India*  
*Axel J. Soto, Faculty of Computer Science, Dalhousie University, Canada*  
*Evangelos Milios, Faculty of Computer Science, Dalhousie University, Canada*

**When Entities Meet Query Recommender Systems: Semantic Search Shortcuts.....933**

*Diego Ceccarelli, ISTI CNR, Italy*  
*Sergiu Gordea, AIT Austrian Institute of Technology, Austria*  
*Claudio Lucchese, ISTI CNR, Italy*  
*Franco Maria Nardini, ISTI CNR, Italy*  
*Raffaele Perego, ISTI CNR, Italy*

**Poster Papers**

**Feature Selections for Authorship Attribution .....939**

*Jacques Savoy, University of Neuchatel, Switzerland*

**Evaluating the Utilization of Twitter Messages as a Source of Security Alerts .....942**

*Luiz Santos, UTFPR, Brazil*  
*Rodrigo Campiolo, UTFPR, Brazil*  
*Marco Gerosa, USP, Brazil*

*Daniel Batista, USP, Brazil*

**Towards a Private Vector Space Model for Confidential Documents.....944**

*Daniel Abril, IIIA-CSIC, Spain*

*Guillermo Navarro-Arribas, DEIC-UAB, Spain*

*Vicenç Torra, IIIA-CSIC, Spain*

**Multimedia and Visualization Track**

**Track Co-Chairs:** Maria da Graça C. Pimentel, Universidade de São Paulo, Brazil

Takayuki Itoh, Ochanomizu University, Japan

Rudinei Goularte, Universidade de São Paulo, Brazil

**Hierarchical Visual Filtering, Pragmatic and Epistemic Actions for Database Visualization.....946**

*Jose F. Rodrigues Jr., ICMC-USP, Brazil*

*Carlos E. Cirilo, UFSCar, Brazil*

*Antonio F. Prado, UFSCar, Brazil*

*Luciana A. M. Zaina, UFSCar, Brazil*

**Assessment of a User Centered Interface for Teleoperation and 3D Environments.....953**

*Juliano Franz, UFRGS, Brazil*

*Anderson Maciel, UFRGS, Brazil*

*Luciana Nedel, UFRGS, Brazil*

**Video Shot Representation Based on Histograms.....961**

*Tamires Tassarolli de Souza, Universidade de São Paulo, Brazil*

*Rudinei Goularte, Universidade de São Paulo, Brazil*

**Interactive Coffee Table for Exploration of Personal Photos and Videos.....967**

*Diogo Pedrosa, University of São Paulo, Brazil*

*Rodrigo Laiola Guimarães, Centrum Wiskunde & Informatica, Netherlands*

*Maria da Graça Pimentel, University of São Paulo, Brazil*

*Dick Bulterman, Centrum Wiskunde & Informatica, Netherlands*

*Pablo Cesar, Centrum Wiskunde & Informatica, Netherlands*

**The CAS Project: A General Infrastructure for Pervasive Capture and Access Systems .....975**

*Rafael Brandão, Tecgraf Lab, PUC-Rio, Brazil*

*Paulo França, Tecgraf Lab, PUC-Rio, Brazil*

*Adriano Medeiros, Tecgraf Lab, PUC-Rio, Brazil*

*Felipe Portella, CENPES, Petrobras, Brazil*

*Renato Cerqueira, IBM Research Brazil, Brazil*

**Adaptive Video-Aware FEC-based Mechanism with Unequal Error Protection Scheme.....981**

*Roger Immich, University of Coimbra, Portugal*

*Eduardo Cerqueira, Federal University of Para, Brazil*

*Marilia Curado, University of Coimbra, Portugal*

**CrowdVis: A Framework For Real Time Crowd Visualization.....989**

*Henry Braun, PUCRS, Brazil*

*Vinicius Cassol, PUCRS, Brazil*

*Rafael Hocevar, PUCRS, Brazil*



Fernando Marson, PUCRS, Brazil

Soraia Musse, PUCRS, Brazil

## Poster Papers

**A Visual Analytics Tool for System Logs Adopting Variable Recommendation and Feature-Based Filtering.....996**

*Aki Hayashi, Ochanomizu University, Japan*

*Takayuki Itoh, Ochanomizu University, Japan*

*Satoshi Nakamura, Kyoto University, Japan*

# Software Development Theme

## Software Engineering Track

**Track Co-Chairs:** W. Eric Wong, UT-Dallas, United States  
Chang Oan Sung, Indiana University Southeast, United States  
John Kim, Utica College, United States

**Track Editorial.....999**

**WAVE-CIA: A Novel CIA Approach Based on Call Graph Mining.....1000**

*Bixin Li, Southeast University, China*

*Qiandong Zhang, Southeast University, China*

*Xiaobing Sun, Southeast University, China*

*Hareton Leung, Hong Kong Polytechnic University, China*

**Representing Dynamic Pluggable Software Units .....1006**

*Fernando Barros, Universidade de Coimbra, Portugal*

**A Novel Watermarking Method for Java Programs.....1013**

*Mohammad Alitavoli, University of Guilan, Iran, Islamic Republic of*

*Mahdi Joafshani, University of Guilan, Iran, Islamic Republic of*

*Aida Erfanian, Islamic Azad University, Lahijan Branch, Iran, Islamic Republic of*

**An Empirical Study on Developer Interactions in StackOverflow .....1019**

*Shaowei Wang, Singapore Management University, Singapore*

*David Lo, Singapore Management University, Singapore*

*Lingxiao Jiang, Singapore Management University, Singapore*

**A Study of COTS Integration Projects: Product Characteristics, Organization, and Life Cycle Models .....1025**

*Katerina Megas, Virginia Tech., USA*

*William Frakes, Virginia Tech., USA*

*Julián Urbano, University Carlos III of Madrid, Spain*

*Gabriella Belli, Virginia Tech., USA*

*Reghu Anguswamy, Virginia Tech., USA*

**Test-based SPL Extraction: An Exploratory Study .....1031**

*Alcemir Santos, Federal University of Minas Gerais, Brazil*

*Felipe Gaia, Federal University of Uberlândia, Brazil*  
*Eduardo Figueiredo, Federal University of Minas Gerais, Brazil*  
*Pedro Santos Neto, Federal University of Piauí, Brazil*  
*João Araújo, Universidade Nova de Lisboa, Portugal*

**A Model to Detect Problems on Scrum-based Software Development Projects.....1037**

*Mirko Perkusich, Signove Tecnologia S/A, Brazil*  
*Angelo Perkusich, Universidade Federal de Campina Grande, Brazil*  
*Hyggo Almeida, Universidade Federal de Campina Grande, Brazil*

**An Experiment Specification Language for Goal-Driven, Automated Performance Evaluations .....1043**

*Dennis Westermann, SAP Research, Germany*  
*Jens Happe, SAP Research, Germany*  
*Roozbeh Farahbod, SAP Research, Germany*

**Failure-detection Capability Analysis of Implementing Parallelism in Adaptive Random Testing Algorithms .....1049**

*Rubing Huang, Huazhong University of Science and Technology, China*  
*Xiaodong Xie, Huaqiao University, China*  
*Jinfu Chen, Jiangsu University, China*  
*Yansheng Lu, Huazhong University of Science and Technology, China*

**WSCCT: A Tool for WS-BPEL Compositions Conformance Testing .....1055**

*Afef Jmal Maâlej, ReDCAD, Tunisia*  
*Moez Krichen, ReDCAD, Tunisia*  
*Mohamed Jmaiel, ReDCAD, Tunisia*

**Automatic Recognition of Design Motifs Using Semantic Conditions.....1062**

*Awny Alnusair, Indiana University - Kokomo, USA*  
*Tian Zhao, University of Wisconsin-Milwaukee, USA*  
*Gongjun Yan, Indiana University - Kokomo, USA*

**A Quantitative Approach for Evaluating Software Maintenance Services.....1068**

*Humberto Marques-Neto, Pontifical Catholic University of Minas Gerais (PUC MINAS), Brazil*  
*Gladston J. Aparecido, Pontifical Catholic University of Minas Gerais (PUC MINAS), Brazil*  
*Marco Tulio Valente, Universidade Federal de Minas Gerais (UFMG), Brazil*

**Multi-Objective Test Case Prioritization for GUI Applications .....1074**

*Wei Sun, State Key Laboratory for Novel Software Technology, Nanjing University, China*  
*Zebao Gao, State Key Laboratory for Novel Software Technology, Nanjing University, China*  
*Weiran Yang, State Key Laboratory for Novel Software Technology, Nanjing University, China*  
*Chunrong Fang, State Key Laboratory for Novel Software Technology, Nanjing University, China*  
*Zhenyu Chen, State Key Laboratory for Novel Software Technology, Nanjing University, China*

**A Systematic Review on Mining Techniques for Crosscutting Concerns .....1080**

*Rafael Durelli, Computer Systems Department University of São Paulo, Brazil*  
*Daniel San Martín Santibáñez, Universidade Federal de São Carlos, Brazil*  
*Nicolas Anquetil, Institut National de Recherche en Informatique et en Automatique (INRIA), France*  
*Márcio Delamaro, Computer Systems Department University of São Paulo, Brazil*  
*Valter Camargo, Universidade Federal de São Carlos, Brazil*

**A Hybrid Bug Triage Algorithm for Developer Recommendation.....1088**

*Tao Zhang, The University of Seoul, Korea*  
*Byungjeong Lee, The University of Seoul, Korea*

**Executing and Debugging UML Models: an fUML extension .....1095**

*Yoann Laurent, LIP6, France*  
*Reda Bendraou, LIP6, France*  
*Marie-Pierre Gervais, LIP6, France*

**i\*Chameleon: A Platform for Developing Multimodal Application with Comprehensive Development Cycle.....1103**

*Kenneth W.K. Lo, The Hong Kong Polytechnic University, China*  
*Will W.W. Tang, The Hong Kong Polytechnic University, China*  
*Grace Ngai, The Hong Kong Polytechnic University, China*  
*Alvin T.S. Chan, The Hong Kong Polytechnic University, China*  
*Hong Va Leong, The Hong Kong Polytechnic University, China*  
*Stephen C.F. Chan, The Hong Kong Polytechnic University, China*

**Software Effort Prediction: A Hyper-Heuristic Decision-Tree based Approach .....1109**

*Márcio Basgalupp, ICT-UNIFESP, Brazil*  
*Rodrigo Barros, ICMC-USP, Brazil*  
*Tiago Silva, ICMC-USP, Brazil*  
*André Carvalho, ICMC-USP, Brazil*

**Quantified Extreme Scenario based Design Approach .....1117**

*Asmaa Abdallah, Computer Science Department Arab Academy for Science and Technology, Egypt*  
*Riham Hassan, Computer Science Department Arab Academy for Science and Technology, Egypt*  
*Mostafa Abdel Azim, Computer Science Department Arab Academy for Science and Technology, Egypt*

**Evaluating the Conventional Wisdom in Clone Removal: A Genealogy-based Empirical Study .....1123**

*Minhaz Zibran, University of Saskatchewan, Canada*  
*Ripon Saha, University of Texas at Austin, USA*  
*Chanchal Roy, University of Saskatchewan, Canada*  
*Kevin Schneider, University of Saskatchewan, Canada*

**OSDC: Adapting ODC for Developing More Secure Software.....1131**

*Umme Hunny, Queen's University, Canada*  
*Mohammad Zulkernine, Queen's University, Canada*  
*Komminist Weldemariam, Queen's University, Canada*

**A Model-Based Framework for Flexible Safety-Critical Software Development -- A Design Study .....1137**

*Jesper Pedersen Notander, Lund University, Sweden*  
*Per Runeson, Lund University, Sweden*  
*Martin Höst, Lund University, Sweden*

**Poster Papers**

**Notation-Driven vs Metamodel-Driven Development of Domain-Specific Modeling Languages: an Empirical Study .....1145**

*Laurent Wouters, European Aeronautic Defense and Space Company (EADS), France*

Marie-Pierre Gervais, Université Paris Ouest Nanterre La Défense, France

**Estimating the Size of Data Mart Projects .....1147**

Wagner Ferreira, Pontifical Catholic University of Minas Gerais - PUC Minas, Brazil

Humberto Marques-Neto, Pontifical Catholic University of Minas Gerais - PUC Minas, Brazil

**Software Engineering Aspects of Green Computing Track**

**Track Co-Chairs:** Somayeh Malakuti, University of Twente, Netherlands

Wolfgang Lohmann, Federal Laboratories for Materials Science and Technology,  
Switzerland

Mehmet Aksit, University of Twente, Netherlands

**Track Editorial.....1149**

**Energy Consumption Estimation of Virtual Machines .....1151**

Ingolf Waßmann, University of Rostock, Germany

Daniel Versick, University of Rostock, Germany

Djamshid Tavangarian, University of Rostock, Germany

**Energy-driven Consolidation in Digital Home.....1157**

Rémi Druilhe, Orange Labs/INRIA Lille-Nord Europe, France

Jacques Pulou, Orange Labs, France

Matthieu Anne, Orange Labs, France

Laurence Duchien, INRIA Lille-Nord Europe, France

Lionel Seinturier, INRIA Lille-Nord Europe, France

**Energy Efficiency Management in Computational Grids through Energy-aware Scheduling.....1163**

Silvana Teodoro, PUCRS, Brazil

Andriele Busatto do Carmo, PUCRS, Brazil

Luiz Gustavo Fernandes, PUCRS, Brazil

**Meta-Learning based Architectural and Algorithmic Optimization for Achieving Green-ness in Predictive Workload Analytics .....1169**

Nidhi Singh, Xerox Research Center Europe, France

Shrisha Rao, International Institute of Information Technology-Bangalore, India

**Poster Papers**

**Comparing Mobile Applications' Energy Consumption .....1177**

Claas Wilke, TU Dresden, Germany

Sebastian Richly, TU Dresden, Germany

Sebastian Götz, TU Dresden, Germany

Christian Piechnick, TU Dresden, Germany

Georg Püschel, TU Dresden, Germany

Uwe Aßmann, TU Dresden, Germany

**A Design Method for Modular Energy-Aware Software .....1180**

Steven te Brinke, University of Twente, Netherlands

Somayeh Malakuti, University of Twente, Netherlands

Christoph Bockisch, University of Twente, Netherlands

*Lodewijk Bergmans, University of Twente, Netherlands*

*Mehmet Akşit, University of Twente, Netherlands*

**Towards a Definition of Sustainability in and for Software Engineering .....1183**

*Birgit Penzenstadler, Technische Universitaet Muenchen, Germany*

**Software Verification and Testing Track**

**Track Co-Chairs:** Jun Pang, University of Luxembourg, Luxembourg

Mohammad Reza Mousavi, Eindhoven University of Technology, Netherlands

**Track Editorial.....1186**

**Accelerated Robustness Testing Of State-Based Components Using Reverse Execution.....1188**

*Patrick Heckeler, University of Tübingen, Germany*

*Gabriel Cardoso, University of Tübingen, Germany*

*Hanno Eichelberger, University of Tübingen, Germany*

*Bastian Schlich, ABB Corporate Research - Industrial Software Systems Program, Germany*

*Thomas Kropf, University of Tübingen, Germany*

*Jürgen Ruf, University of Tübingen, Germany*

*Stefan Huster, University of Tübingen, Germany*

*Sebastian Burg, University of Tübingen, Germany*

*Wolfgang Rosenstiel, University of Tübingen, Germany*

**Using Cross-Entropy for Satisfiability.....1196**

*Hana Chockler, IBM Haifa, Israel*

*Alexander Ivrii, IBM Haifa, Israel*

*Arie Matsliah, IBM Haifa, Israel*

*Simone Fulvio Rollini, University of Lugano, Switzerland*

*Natasha Sharygina, University of Lugano, Switzerland*

**Static Analysis of List-Manipulating Programs via Bit-Vectors and Numerical Abstractions.....1204**

*Liqian Chen, National University of Defense Technology, China*

*Renjian Li, National University of Defense Technology, China*

*Xueguang Wu, National University of Defense Technology, China*

*Ji Wang, National University of Defense Technology, China*

**The Search for the Laws of Automatic Random Testing.....1211**

*Carlo A. Furia, Chair of Software Engineering, ETH Zurich, Switzerland*

*Bertrand Meyer, Chair of Software Engineering, ETH Zurich, Switzerland*

*Manuel Oriol, University of York, UK*

*Andrey Tikhomirov, ITMO, Saint Petersburg, Russia*

*Yi Wei, Chair of Software Engineering, ETH Zurich, Switzerland*

**Test Case Generation from Natural Language Requirements based on SCR Specifications .....1217**

*Gustavo Carvalho, Centro de Informática - UFPE, Brazil*

*Diogo Falcão, Centro de Informática - UFPE, Brazil*

*Flávia Barros, Centro de Informática - UFPE, Brazil*

*Augusto Sampaio, Centro de Informática - UFPE, Brazil*

*Alexandre Mota, Centro de Informática - UFPE, Brazil*

*Leonardo Motta, Embraer, Brazil*

Mark Blackburn, Stevens Institute, USA

**Mutation Testing Strategies using Mutant Classification.....1223**

Mike Papadakis, University of Luxembourg, Luxembourg

Yves Le Traon, University of Luxembourg, Luxembourg

**Common Specification Language for Static and Dynamic Analysis of C Programs.....1230**

Mickaël Delahaye, UJF-Grenoble 1, LIG, FRANCE

Nikolai Kosmatov, CEA, LIST, FRANCE

Julien Signoles, CEA, LIST, FRANCE

**An Interactive Extension Mechanism for Reusing Verified Programs .....1236**

Sosuke Moriguchi, Tokyo Institute of Technology, Japan

Takuo Watanabe, Tokyo Institute of Technology, Japan

**Requirements Engineering Track**

**Track Chair:** Maria Lencastre, Universidade de Pernambuco, Brazil

**Track Editorial.....1244**

**Advanced Modularity for Building SPL Feature Models: a Model-Driven Approach.....1246**

Joao Araujo, Universidade Nova de Lisboa, Portugal

Miguel Goulão, Universidade Nova de Lisboa, Portugal

Ana Moreira, Universidade Nova de Lisboa, Portugal

Ines Simao, Universidade Nova de Lisboa, Portugal

Vasco Amaral, Universidade Nova de Lisboa, Portugal

Elisa Baniassad, Australian National University, Australia

**Aspect Interaction Chart - A UML Approach for Modularizing Aspect Interaction Conflicts.....1254**

Shubhanan Bakre, Illinois Institute of Technology, USA

Atef Bader, Illinois Institute of Technology, USA

Tzilla Elrad, Illinois Institute of Technology, USA

**A Catalogue of Functional Software Requirement Patterns for the Domain of Content Management Systems .....1260**

Cristina Palomares, Universitat Politècnica de Catalunya, Spain

Carme Quer, Universitat Politècnica de Catalunya, Spain

Xavier Franch, Universitat Politècnica de Catalunya, Spain

Samuel Renault, Public Research Centre Henri Tudor, Luxembourg

Cindy Guerlain, Public Research Centre Henri Tudor, Luxembourg

**A Requirements Catalog for Mobile Learning Environments .....1266**

Nemésio Freitas Duarte Filho, University of São Paulo (USP), Brazil

Ellen Francine Barbosa, University of São Paulo (USP), Brazil

**Test Intents: Enhancing the Semantics of Requirements Traceability Links in Test Cases .....1272**

Celal Ziftci, University of California, San Diego, United States

Ingolf Krüger, University of California, San Diego, United States



**On the Use of Metamodeling for Relating Requirements and Architectural Design Decisions .....1278**

*Diego Dermeval, Universidade Federal de Alagoas, Brazil*  
*Jaelson Castro, Universidade Federal de Pernambuco, Brazil*  
*Carla Silva, Universidade Federal de Pernambuco, Brazil*  
*João Pimentel, Universidade Federal de Pernambuco, Brazil*  
*Ig Ibert Bittencourt, Universidade Federal de Alagoas, Brazil*  
*Patrick Brito, Universidade Federal de Alagoas, Brazil*  
*Endhe Elias, Universidade Federal de Alagoas, Brazil*  
*Thyago Tenório, Universidade Federal de Alagoas, Brazil*  
*Alan Pedro, Universidade Federal de Alagoas, Brazil*

**Dynamic Decision Tree for Legacy Use-Case Recovery .....1284**

*Philippe Dugerdil, Geneva School of Business Administration, Switzerland*  
*David Sennhauser, Geneva School of Business Administration, Switzerland*

**Selecting among Alternatives using Dependencies: An NFR approach .....1292**

*Rutvij Mehta, The University of Texas at Dallas, USA*  
*Tomás Ruiz-López, University of Granada, Spain*  
*Lawrence Chung, The University of Texas at Dallas, USA*  
*Manuel Noguera, University of Granada, Spain*

**Common Criteria CompliAnt Software Development (CC-CASD) .....1298**

*Kristian Beckers, University Duisburg-Essen, Germany*  
*Isabelle Côté, ITESYS, Germany*  
*Stephan Faßbender, University Duisburg-Essen, Germany*  
*Denis Hatebur, ITESYS, Germany*  
*Maritta Heisel, University Duisburg-Essen, Germany*

**Poster Papers**

**The Role of NFRs when Transforming i\* Requirements Models into OO-Method Models .....1305**

*Almir Buarque, UFPE, Brazil*  
*Jaelson Castro, UFPE, Brazil*  
*Fernanda Alencar, UFPE, Brazil*

**Configuration Support for Feature Models with Soft Constraints .....1307**

*Jorge Barreiros, Instituto Superior de Engenharia de Coimbra, Portugal*  
*Ana Moreira, Universidade Nova de Lisboa, Portugal*

**Modeling the Alignment between Business and IS/IT: a Requirements Engineering Perspective .....1309**

*Carlos Salgado, Universidade do Minho, Portugal*  
*Ricardo J. Machado, Universidade do Minho, Portugal*  
*Rita Suzana, Universidade Federal da Bahia, Brasil*

**System Software & Security Theme**

**Bioinformatics Track**

**Track Co-Chairs:** Dan Tulpan, NRC, Information and Communications Technologies, Canada  
Paola Lecca, University of Trento, Centre for Integrative Biology, Italy



**Track Editorial.....1312**

**A Conceptual Approach to Gene Expression Analysis Enhanced by Visual Analytics .....1314**

*Cassio Melo, École Centrale Paris, France*  
*Constantinos Orphanides, Sheffield Hallam University, England*  
*Kenneth McLeod, Heriot-Watt University, Scotland*  
*Marie-Aude Aufaure, École Centrale Paris, France*  
*Simon Andrews, Sheffield Hallam University, England*  
*Albert Burger, Heriot-Watt University, Scotland*

**Cross-lattice Behavior of General ACO Folding for Proteins in the HP Model.....1320**

*Mimma Nardelli, University of Pisa, Italy*  
*Luciano Tedesco, University of Pisa, Italy*  
*Alessio Bechini, University of Pisa, Italy*

**BenchDW: a Generic Framework for Biological Data Warehouse Benchmarking.....1328**

*Thomas Triplet, Concordia University, Canada*  
*Gregory Butler, Concordia University, Canada*

**Poster Papers**

**A Data Warehouse as an Infrastructure to Mine Molecular Descriptors for Virtual Screening.....1335**

*Giovanni X. Perazzo, FURG, Brazil*  
*Ana T. Winck, UFMS, Brazil*  
*Karina S. Machado, FURG, Brazil*

**Coordination Models, Languages and Applications Track**

**Track Co-Chairs:** Mirko Viroli, Alma Mater Studiorum, Università di Bologna, Italy  
Gabiella Castelli, Università di Modena e Reggio Emilia, Italy  
Jose Luis Fernandez Marquez, Université de Genève, Switzerland

**Track Editorial.....1337**

**Internet of Things: A Process Calculus Approach .....1339**

*Ivan Lanese, Focus Team, University of Bologna/INRIA, Italy*  
*Luca Bedogni, University of Bologna, Italy*  
*Marco Di Felice, University of Bologna, Italy*

**Reliable Supervisory Coordination of Stochastic Communicating Processes with Data.....1347**

*Jasen Markovski, Eindhoven University of Technology, The Netherlands*

**A Peer to Peer Agent Coordination Framework for IHE based Cross-Community Health Record Exchange.....1355**

*Visara Urovi, Institute of Applied Sciences, Western Switzerland, Switzerland*  
*Alex Carmine Olivieri, Institute of Applied Sciences, Western Switzerland, Switzerland*  
*Stefano Bromuri, Institute of Applied Sciences, Western Switzerland, Switzerland*  
*Nicoletta Fornara, Università della Svizzera Italiana, Switzerland*  
*Michael Scumacher, Institute of Applied Sciences, Western Switzerland, Switzerland*

**Specifying and Analysing Reputation Systems with a Coordination Language.....1363**

*Alessandro Celestini, IMT Lucca, Italy*

*Rocco De Nicola, IMT Lucca, Italy*

*Francesco Tiezzi, IMT Lucca, Italy*

**Combining Self-Organisation, Context-Awareness and Semantic Reasoning: the Case of Resource Discovery in Opportunistic Networks.....1369**

*Graeme Stevenson, University of St Andrews, UK*

*Danilo Pianini, University of Bologna, Italy*

*Sara Montagna, University of Bologna, Italy*

*Mirko Viroli, University of Bologna, Italy*

*Juan Ye, University of St Andrews, UK*

*Simon Dobson, University of St Andrews, UK*

**Poster Papers**

**Constrained Global Types for Dynamic Checking of Protocol Conformance in Multi-Agent Systems.....1377**

*Davide Ancona, Università di Genova, Italy*

*Matteo Barbieri, Università di Genova, Italy*

*Viviana Mascardi, Università di Genova, Italy*

**Probabilistic Embedding: Experiments with Tuple-based Probabilistic Languages.....1380**

*Stefano Mariani, Alma Mater Studiorum-Università di Bologna, Italy*

*Andrea Omicini, Alma Mater Studiorum-Università di Bologna, Italy*

**Enterprise Engineering Track**

**Track Co-Chairs:** Artur Caetano, IST, Technical University of Lisbon, Portugal

Rogério Carvalho, IFF, Brazil

Maria-Eugenia Iacob, University of Twente, Netherlands

Rafael Accorsi, Freiburg University, Germany

**A Framework for the Intelligent Delivery and User-Adequate Visualization of Process Information.....1383**

*Markus Hipp, Group Research & MBC Development, Daimler AG, Germany*

*Bernd Michelberger, University of Applied Sciences Ravensburg-Weingarten, Germany*

*Bela Mutschler, University of Applied Sciences Ravensburg-Weingarten, Germany*

*Manfred Reichert, University of Ulm, Institute of Databases and Information Systems, Germany*

**Towards Data-Aware Constraints in Declare .....1391**

*Marco Montali, Free University of Bozen-Bolzano, Italy*

*Federico Chesani, University of Bologna, Italy*

*Fabrizio Maggi, Eindhoven University of Technology, the Netherlands*

*Paola Mello, University of Bologna, Italy*

**Assessing the Best-Order for Business Process Model Refactoring.....1397**

*Maria Fernandez-Ropero, University of Castilla-La Mancha, Spain*

*Ricardo Pérez-Castillo, University of Castilla-La Mancha, Spain*

*José A. Cruz-Lemus, University of Castilla-La Mancha, Spain*

*Mario Piattini, University of Castilla-La Mancha, Spain*

**Start Time and Duration Distribution Estimation in Semi-Structured Processes .....1403**

*Andreas Wombacher, University of Twente, The Netherlands*  
*Maria-Eugenia Iacob, University of Twente, The Netherlands*

**IT Evaluation in Business Groups: A Maturity Model .....1410**

*Florian Hamel, University of St.Gallen, Switzerland*  
*Thomas Ph. Herz, University of St.Gallen, Switzerland*  
*Falk Uebernickel, University of St.Gallen, Switzerland*  
*Walter Brenner, University of St.Gallen, Switzerland*

**Amending C-net Discovery Algorithms .....1418**

*Marc Solé, Universitat Politècnica de Catalunya, Spain*  
*Josep Carmona, Universitat Politècnica de Catalunya, Spain*

**Dynamic Instance Queuing in Process-Aware Information Systems .....1426**

*Johannes Pflug, University of Vienna, Austria*  
*Stefanie Rinderle-Ma, University of Vienna, Austria*

**Enterprise Integration Using Event Actor Based Event Transformations .....1434**

*Simon Tragatschnig, University of Vienna, Austria*  
*Uwe Zdun, University of Vienna, Austria*

**Generic Support for RBAC Break-Glass Policies in Process-Aware Information Systems .....1441**

*Sigrid Schefer-Wenzl, WU Vienna, Austria*  
*Mark Strembeck, WU Vienna, Austria*

**Data Flow Abstractions and Adaptations through Updatable Process Views .....1447**

*Jens Kolb, Ulm University, Germany*  
*Manfred Reichert, Ulm University, Germany*

**Data-Aware Process Mining: Discovering Decisions in Processes Using Alignments .....1454**

*Massimiliano de Leoni, Eindhoven University of Technology, The Netherlands*  
*Wil M. P. van der Aalst, Eindhoven University of Technology, The Netherlands*

**On the Exploitation of Process Mining for Security Audits: The Process Discovery Case .....1462**

*Rafael Accorsi, Freiburg U, Germany*  
*Thomas Stocker, Freiburg U, Germany*  
*Günter Müller, Freiburg U, Germany*

**Poster Papers**

**e3-RoME: A Value-based Approach for Method Bundling .....1469**

*Sybren de Kinderen, Public Research Centre Henri Tudor, Luxembourg*  
*Henderik A. Proper, Public Research Centre Henri Tudor, Luxembourg*

**Product-Based Business Processes Interoperability .....1472**

*Malik Khalfallah, European Aeronautic Defence and Space Company (EADS), France*  
*Nicolas Figay, European Aeronautic Defence and Space Company (EADS), France*  
*Mahmoud Barhamgi, Laboratoire d'InfoRmatique en Image et Systèmes d'information (LIRIS), France*  
*Parisa Ghodous, Laboratoire d'InfoRmatique en Image et Systèmes d'information (LIRIS), France*

**Evaluating a Process for Developing a Capability Maturity Model .....1474**

*Diogo Proença, IST / INESC-ID, Portugal*

*Christoph Becker, Vienna University of Technology, Austria*

*Hannes Kulovits, Vienna University of Technology, Austria*

*Ricardo Vieira, IST / INESC-ID, Portugal*

*Gonçalo Antunes, IST / INESC-ID, Portugal*

*Miguel Mira da Silva, IST / INESC-ID, Portugal*

*José Borbinha, IST / INESC-ID, Portugal*

**Embedded Systems Track**

**Track Co-Chairs:** Alessio Bechini, University of Pisa, Italy

Cosimo Antonio Prete, University of Pisa, Italy

**Track Editorial.....1476**

**LINK-GC: A Preemptive Approach for Garbage Collection in NAND Flash Storages .....1478**

*Sanghyuk Jung, Dept. of Electrocnics and Computer Engineering, Hanyang University, Korea*

*Yong Ho Song, Dept. of Electrocnic Engineering, Hanyang University, Korea*

**Virtualization for Safety-Critical, Deeply-Embedded Devices.....1485**

*Felix Bruns, Ruhr-University Bochum, Germany*

*Dirk Kuschnerus, Ruhr-University Bochum, Germany*

*Attila Bilgic, KROHNE Messtechnik GmbH, Germany*

**Energy-aware Real-time Task Synchronization in Multi-core Embedded Systems .....1493**

*Lin-Fong Fan, National Taiwan University of Science and Technology, Taiwan*

*Ting-Hao Tsai, National Taiwan University of Science and Technology, Taiwan*

*Ya-Shu Chen, National Taiwan University of Science and Technology, Taiwan*

*Shian-Shing Shyu, Institute of Nuclear Energy Research, Taiwan*

**Sensor Streams Middleware for Easy Configuration and Processing in Hybrid Sensor Networks .....1499**

*Pedro Furtado, U. Coimbra, Portugal*

*Jose Cecilio, U. Coimbra, Portugal*

**Improving the Performance of Message Parsers for Embedded Systems.....1505**

*Jigar Solanki, LaBRI, University of Bordeaux, France*

*Bertrand Le Gal, IMS, University of Bordeaux, France*

*Tégawendé Bissyandé, LaBRI, University of Bordeaux, France*

*Yérom-David Bromberg, LaBRI, University of Bordeaux, France*

*Laurent Réveillère, LaBRI, University of Bordeaux, France*

**An Instruction-level Fine-grained Recovery Approach for Soft Errors.....1511**

*Jianjun Xu, School of Computer, National University of Defense Technology, China*

*Qingping Tan, School of Computer, National University of Defense Technology, China*

*Lanfang Tan, School of Computer, National University of Defense Technology, China*

*Huiping Zhou, School of Computer, National University of Defense Technology, China*

**Throughput-Constrained Voltage and Frequency Scaling for Real-time Heterogeneous Multiprocessors .....1517**

*Pengcheng Huang, ETH Zurich, Switzerland*

*Orlando Moreira, ST-Ericsson, Netherlands*  
*Kees Goossens, Technical University of Eindhoven, Netherlands*  
*Anca Molnos, Delft University of Technology, Netherlands*

**nuKernel: MicroKernel for Multi-core DSP SoCs with Load Sharing and Priority Interrupts .....1525**

*Chi-Sheng Shih, National Taiwan University, Taiwan*  
*Hsin-Yu Lai, National Taiwan University, Taiwan*

**An FPGA-based Multi-Core Approach for Pipelining Computing Stages .....1533**

*Ali Azarian, Universidade do Porto, Faculdade de Engenharia (FEUP), Portugal*  
*João Manuel Paiva Cardoso, Universidade do Porto, Faculdade de Engenharia (FEUP), Portugal*  
*Stephan Werner, Karlsruhe Institute of Technology – KIT, Germany*  
*Jürgen Becker, Karlsruhe Institute of Technology – KIT, Germany*

**MLC-Flash-Friendly Logging and Recovery for Databases.....1541**

*Hua-Wei Fang, National Taiwan University, Taiwan*  
*Mi-Yen Yeh, Institute of Information Science, Academia Sinica, Taiwan*  
*Tei-Wei Kuo, National Taiwan University, Taiwan*

**Poster Papers**

**A Novel Approach for Interactive Debugging of Dynamic Dataflow Embedded Applications .....1547**

*Kevin Pouget, STMicroelectronics and University of Grenoble, CEA, LIG, France*  
*Patricia Lopez Cueva, STMicroelectronics and University of Grenoble, CEA, LIG, France*  
*Luis-Miguel Santana-Ormeno, STMicroelectronics, France*  
*Jean-Francois Mehaut, University of Grenoble, CEA, LIG, France*

**Demand-Based Flash Translation Layer Considering Spatial Locality .....1550**

*Yongmyung Lee, Seoul National University of Science and Technology, Korea*  
*Taedong Jung, Seoul National University of Science and Technology, Korea*  
*Ilhoon Shin, Seoul National University of Science and Technology, Korea*

**Kernel-level Time Composability for Avionics Applications.....1552**

*Andrea Baldovin, University of Padua, Italy*  
*Andrea Graziano, University of Padua, Italy*  
*Enrico Mezzetti, University of Padua, Italy*  
*Tullio Vardanega, University of Padua, Italy*

**Communication Support at the OS Level to Enhance Design Space Exploration in Multiprocessed Embedded Systems .....1555**

*Alexandra Aguiar, PUCRS, Brazil*  
*Sergio Johann Filho, PUCRS, Brazil*  
*Felipe Magalhaes, PUCRS, Brazil*  
*Fabiano Hessel, PUCRS, Brazil*

**Object Oriented Programming Languages and Systems Track**

**Track Chair:** Davide Ancona, Univ. of Genova, Italy

**Track Editorial.....1557**

**Implementing Java-like languages in Xtext with Xsemantics .....1559**

*Lorenzo Bettini, Dip. Informatica, Univ. Torino, Italy*

**The Ruby Type Checker .....1565**

*Brianna M. Ren, University of Maryland, College Park, USA*

*John Toman, University of Maryland, College Park, USA*

*T. Stephen Strickland, University of Maryland, College Park, USA*

*Jeffrey S. Foster, University of Maryland, College Park, USA*

**Run-Time Assertion Checking of Data- and Protocol-Oriented Properties of Java Programs: An Industrial Case Study .....1573**

*Frank de Boer, CWI, The Netherlands*

*Stijn de Gouw, CWI, The Netherlands*

*Einar Broch Johnsen, University of Oslo, Norway*

*Peter Wong, Fredhopper B.V., The Netherlands*

**Meso: An Object-Oriented Programming Language for Building Strongly-typed Internet-Based Network Applications .....1579**

*Stefan Hong, National Taiwan University, Taiwan*

*Yuh-Jzer Joung, National Taiwan University, Taiwan*

**Poster Papers**

**Concurrent Typed Intermediate Language.....1587**

*L. Miguel Lourenço, CITI - Universidade Nova de Lisboa, Portugal*

*João Costa Seco, CITI - Universidade Nova de Lisboa, Portugal*

*Francisco Martins, LASIGE - Universidade de Lisboa, Portugal*

**Operating Systems Track**

**Track Co-Chairs:** Tei-Wei Kuo, National Taiwan University, Taiwan

Seongwon Lee, Samsung Electronics, Korea

**Integrating Memory Management with a File System on a Non-Volatile Main Memory System .....1589**

*Shuichi Oikawa, University of Tsukuba, Japan*

**Analyzing Resource Interdependencies in Multi-Core Architectures to Improve Scheduling Decisions.....1595**

*Anselm Busse, Technische Universität Berlin, Germany*

*Jan H. Schönherr, Technische Universität Berlin, Germany*

*Matthias Diener, Federal University of Rio Grande do Sul, Brazil*

*Gero Mühl, University of Rostock, Germany*

*Jan Richling, Technische Universität Berlin, Germany*

**Analysis of Client/Server Interactions in a Reservation-Based System.....1603**

*Luca Abeni, University of Trento, Italy*

*Nicola Manica, University of Trento, Italy*

**Design Analysis for Real-Time Video Transcoding on Cloud Systems .....1610**

*Seungcheol Ko, Sungkyunkwan University, Korea*

*Seongsoo Park, Sungkyunkwan University, Korea*

*Hwansoo Han, Sungkyunkwan University, Korea*



**Onion and Pizza: New Disk Partitioning Schemes for Virtualization Systems .....1616**

*Dongwoo Kang, Dankook University, Korea*  
*Namsu Lee, Dankook University, Korea*  
*Sewoog Kim, Dankook University, Korea*  
*Jongmoo Choi, Dankook University, Korea*  
*Donghee Lee, University of Seoul, Korea*  
*Sam H. Noh, Hongik University, Korea*

**A Dynamically Reconfigurable Operating System for Manycore Systems.....1622**

*Chaeseok Im, Samsung Electronics, Korea*  
*Minkyu Jeong, Samsung Electronics, Korea*  
*Jaedon Lee, Samsung Electronics, Korea*  
*Seungwon Lee, Samsung Electronics, Korea*

**Measuring Similarity of Windows Applications using Static and Dynamic Birthmarks .....1628**

*Dongjin Kim, Department of Computer Science, Dankook University, Korea*  
*Yongman Han, Department of Computer Science, Dankook University, Korea*  
*Seong-je Cho, Department of Software Science, Dankook University, Korea*  
*Haeyoung Yoo, Department of Software Science, Dankook University, Korea*  
*Jinwoon Woo, Department of Software Science, Dankook University, Korea*  
*Yunmook Nah, Department of Computer Engineering, Dankook University, Korea*  
*Minkyu Park, Department of Computer Engineering, Konkuk University, Korea*  
*Lawrence Chung, Department of computer Science, University of Texas at Dallas, USA*

**An Efficient Similarity Comparison Based on Core API Calls .....1634**

*Minwoo Jang, School of Computing, Soongsil University, Korea*  
*Joongjin Kook, Korea Electronics Technology Institute, Korea*  
*Samin Ryu, LG Electronics, Korea*  
*Kahyun Lee, Samsung SDS, Korea*  
*Sung Shin, Department of Electrical Engineering and Computer Science, South Dakota State University, USA*  
*Ahreum Kim, School of Computing, Soongsil University, Korea*  
*Youngsu Park, School of Computing, Soongsil University, Korea*  
*Eig Hyun Cho, School of Computing, Soongsil University, Korea*

**Software Plagiarism Detection via Static API Call Frequency Birthmark.....1639**

*Dong-Kyu Chae, Department of Electronics and Computer Engineering, Hanyang University, Korea*  
*Jiwoon Ha, Department of Electronics and Computer Engineering, Hanyang University, Korea*  
*Sang-Chul Lee, Department of Electronics and Computer Engineering, Hanyang University, Korea*  
*Sang-Wook Kim, Department of Electronics and Computer Engineering, Hanyang University, Korea*  
*Gyun Woo, Department of Computer Engineering, Pusan National University, Pusan, Korea*

**Operating System Reliability from the Quality of Experience Viewpoint: An Exploratory Study .....1644**

*Rivalino Matias, Federal University of Uberlandia, Brazil*  
*Geycy Oliveira Lima, Federal University of Uberlandia, Brazil*  
*Lucio Borges, Federal University of Uberlandia, Brazil*

**Poster Papers**

**Computation Offloading for Real-time Systems.....1650**

*Anas Toma, Karlsruhe Institute of Technology, Germany*  
*Jian-Jia Chen, Karlsruhe Institute of Technology, Germany*



**A Tour Recommendation Service for Electric Vehicles based on a Hybrid Orienteering Model.....1652**

*Junghoon Lee, Jeju National University, Korea*  
*Gyung-Leen Park, Jeju National University, Korea*  
*Sang-Wook Kim, Hanyang University, Korea*

**Enhancing Security Enforcement on Unmodified Android.....1655**

*Cheol Jeon, Seoul National University, Korea*  
*Bongjae Kim, Seoul National University, Korea*  
*WooChur Kim, Soongsil University, Korea*  
*Yookun Cho, Seoul National University, Korea*

**Protecting Android Applications with Steganography-based Software Watermarking .....1657**

*Joonhyouk Jang, Seoul National University, Korea*  
*Jinman Jung, Seoul National University, Korea*  
*Hyunho Ji, Soongsil University, Korea*  
*Jiman Hong, Soongsil University, Korea*  
*Dongkyun Kim, Kyungpook National University, Korea*  
*Soon Ki Jung, Kyungpook National University, Korea*

**Programming Languages Track**

**Track Co-Chairs:** Marjan Mernik, University of Maribor, Slovenia  
Barrett Bryant, University of North Texas, United States

**Track Editorial.....1659**

**New Exception Interfaces for Java-like Languages.....1661**

*Thiago Silva, Informatics Center, Federal University of Pernambuco, Brazil*  
*Fernando Castor, Informatics Center, Federal University of Pernambuco, Brazil*

**Formal Semantics and Expressiveness of a Web Service Composition Language .....1667**

*Marcelo Guerra Hahn, Microsoft Corp., USA*  
*Regina Motz, INCO - Udelar, Uruguay*  
*Martin A. Musicante, DIMAp - UFRN, Brasil*  
*Alberto Pardo, INCO - Udelar, Uruguay*

**Reliable Scalable Symbolic Computation: The Design of SymGridPar2.....1674**

*Patrick Maier, Heriot-Watt University, Edinburgh, United Kingdom*  
*Rob Stewart, Heriot-Watt University, Edinburgh, United Kingdom*  
*Phil Trinder, Heriot-Watt University, Edinburgh, United Kingdom*

**End-to-End Latency Computation in a Multi-periodic Design .....1682**

*Rémy Wyss, ONERA, France*  
*Frédéric Boniol, ONERA, France*  
*Julien Forget, LIFL, France*  
*Claire Pagetti, ONERA, France*

**@Java: Annotations in Freedom.....1688**

*Walter Cazzola, Università degli Studi di Milano, Italy*

Edoardo Vacchi, Università degli Studi di Milano, Italy

## Poster Papers

### Online Identification of Frequently Executed Acyclic Paths by Leveraging Data Stream

Algorithms .....1694

Gaurav Kumar, Indian Institute of Technology Kanpur, India

Subhajit Roy, Indian Institute of Technology Kanpur, India

### A Preliminary Assessment of Haskell's Software Transactional Memory Constructs .....1696

Fernando Castor, Federal University of Pernambuco, Brazil

Francisco Soares-Neto, Federal University of Pernambuco, Brazil

André L. M. Santos, Federal University of Pernambuco, Brazil

### LLLR Parsing.....1698

Bostjan Slivnik, University of Ljubljana, Slovenia

## Programming for Separation of Concerns Track

Track Co-Chairs: Emiliano Tramontana, University of Catania, Italy

Corrado Santoro, University of Catania, Italy

Yvonne Coady, University of Victoria, Canada

### Practical Use of Static Composition of Refactoring Operations .....1700

Julien Cohen, University of Nantes, France

Akram Ajouli, Mines Nantes, France

### Fine-Grained Annotations for Pointcuts with a Finer Granularity .....1706

Walter Cazzola, Università degli Studi di Milano, Italy

Edoardo Vacchi, Università degli Studi di Milano, Italy

### Exploiting Points-to Maps for De-/Serialization Code Generation.....1712

Selim Ciraci, Pacific Northwest National Laboratory, USA

Oreste Villa, Pacific Northwest National Laboratory, USA

## Software Architecture: Theory, Technology, and Applications Track

Track Co-Chairs: Antonio Bucchiarone, Bruno Kessler Foundation of Trento, Italy

Raffaella Mirandola, Politecnico di Milano, Italy

Patrizia Scandurra, University of Bergamo, Italy

### Track Editorial.....1720

### Smart Cities Software Architectures: A Survey .....1722

Wellington Manoel da Silva, Informatics Center - Federal University of Pernambuco (CIN-UFPE)/Recife Center for Advanced Studies and Systems (C.E.S.A.R), Brazil

Gustavo Henrique Rodrigues Pinto Tomas, Informatics Center - Federal University of Pernambuco (CIN-UFPE)/Recife Center for Advanced Studies and Systems (C.E.S.A.R), Brazil

Kelvin Lopes Dias, Informatics Center - Federal University of Pernambuco (CIN-UFPE), Brazil

Alexandre Alvaro, UFSCar, Brazil

Ricardo Alexandre Afonso, UFAL, Brazil

Vinicius Cardoso Garcia, Informatics Center - Federal University of Pernambuco (CIN-UFPE), Brazil

**Derivation of Domain-specific Architectural Knowledge Views from Governance and Security Compliance Metadata.....1728**

*Huy Tran, Software Architecture Group, Faculty of Computer Science, University of Vienna, Austria*  
*Ioanna Lytra, Software Architecture Group, Faculty of Computer Science, University of Vienna, Austria*  
*Uwe Zdun, Software Architecture Group, Faculty of Computer Science, University of Vienna, Austria*

**Modeling Dynamic Adaptations using augmented Feature Models. ....1734**

*Jean-Baptiste Lézoray, Telecom Bretagne, France*  
*Maria-Teresa Segarra, Telecom Bretagne, France*  
*Antoine Beugnard, Telecom Bretagne, France*  
*Jean-Marie Gilliot, Telecom Bretagne, France*

**An Infrastructure for the Life Cycle Management of Multi Product Lines .....1742**

*Gerald Holl, Johannes Kepler University Linz, Austria*  
*Paul Gruenbacher, Johannes Kepler University Linz, Austria*  
*Christoph Elsner, Siemens, Germany*  
*Michael Vierhauser, Siemens VAI, Austria*

**A Generic Framework for Deriving Architecture Modeling Methods for Large-scale Software-intensive Systems.....1750**

*Zhiqiang Fan, State Key Laboratory of Software Development Environment, China*  
*Tao Yue, Simula Research Laboratory, Norway*  
*Li Zhang, State Key Laboratory of Software Development Environment, China*

**The BRICS Component Model: A Model-Based Development Paradigm For Complex Robotics Software Systems .....1758**

*Herman Bruyninckx, Katholieke Universiteit Leuven, Belgium*  
*Nico Hochgeschwender, Bonn-Rhine-Sieg University of Applied Sciences, Germany*  
*Luca Gherardi, University of Bergamo, Italy*  
*Markus Klotzbuecher, Katholieke Universiteit Leuven, Belgium*  
*Gerhard Kraetzschmar, Bonn-Rhine-Sieg University of Applied Sciences, Germany*  
*Davide Brugali, University of Bergamo, Italy*  
*Azamat Shakhimardanov, Bonn-Rhine-Sieg University of Applied Sciences, Germany*  
*Jan Paulus, Bonn-Rhine-Sieg University of Applied Sciences, Germany*  
*Michael Reckhaus, Bonn-Rhine-Sieg University of Applied Sciences, Germany*  
*Hugo Garcia, Katholieke Universiteit Leuven, Belgium*  
*Davide Faconti, Katholieke Universiteit Leuven, Belgium*

**Applying Software Product Line Engineering in Building Web Portals for Supercomputing Services.....1765**

*Piyush Diwan, The Ohio Supercomputer Center, USA*  
*Patricia Carey, The Ohio Supercomputer Center, USA*  
*Eric Franz, The Ohio Supercomputer Center, USA*  
*Yixue Li, The Ohio Supercomputer Center, USA*  
*Thomas Bitterman, The Ohio Supercomputer Center, USA*  
*David E Hudak, The Ohio Supercomputer Center, USA*  
*Rajiv Ramnath, The Ohio State University, USA*

**Poster Papers**

|  |             |
|--|-------------|
| <b>A Model Driven Methodology for enabling Autonomic Reconfiguration of Service Oriented Architecture.....</b> | <b>1772</b> |
| <i>Emna Mezghani, CNRS, LAAS, France</i>   |             |
| <i>Riadh Ben Halima, CNRS, LAAS, France</i>  |             |
| <i>Ismael Bouassida Rodriguez, CNRS, LAAS, France</i>  |             |
| <i>Khalil Drira, CNRS, LAAS, France</i>  |             |

## **Computer Security Track**

**Track Co-Chairs:** Giampaolo Bella, Università di Catania, Italy  
Helge Janicke, De Montfort University, United Kingdom  
Alessandro Sorniotti, IBM Research Zurich, Switzerland

|                             |             |
|-----------------------------|-------------|
| <b>Track Editorial.....</b> | <b>1774</b> |
|-----------------------------|-------------|

|  |             |
|--|-------------|
| <b>Exploiting Visual Appearance to Cluster and Detect Rogue Software.....</b>            | <b>1776</b> |
| <i>Christian J. Dietrich, Institute for Internet Security, Gelsenkirchen, Germany</i>    |             |
| <i>Christian Rossow, VU University Amsterdam, The Network Institute, The Netherlands</i> |             |
| <i>Norbert Pohlmann, Institute for Internet Security, Gelsenkirchen, Germany</i>         |             |

|   |             |
|---|-------------|
| <b>Lightweight Energy Consumption Based Intrusion Detection System for Wireless Sensor Networks .....</b> | <b>1784</b> |
| <i>Michael Riecker, Secure Mobile Networking Lab, Technische Universität Darmstadt, Germany</i>           |             |
| <i>Sebastian Biedermann, Security Engineering Group, Technische Universität Darmstadt, Germany</i>        |             |
| <i>Matthias Hollick, Secure Mobile Networking Lab, Technische Universität Darmstadt, Germany</i>          |             |

|  |             |
|--|-------------|
| <b>EARs in the Wild: Large-Scale Analysis of Execution After Redirect Vulnerabilities.....</b> | <b>1792</b> |
| <i>Pierre Payet, ESIEA, France</i>   |             |
| <i>Adam Doupé, UCSB, USA</i>   |             |
| <i>Christopher Kruegel, UCSB, USA</i>  |             |
| <i>Giovanni Vigna, UCSB, USA</i>   |             |

|   |             |
|---|-------------|
| <b>Secure Roaming and Infrastructure Sharing for Multi-Operator WMNs.....</b> | <b>1800</b> |
| <i>André Egners, RWTH Aachen University, Germany</i>                          |             |
| <i>Ulrike Meyer, RWTH Aachen University, Germany</i>                          |             |

|  |             |
|--|-------------|
| <b>Mobile-Sandbox: Having a Deeper Look into Android Applications.....</b> | <b>1808</b> |
| <i>Michael Spreitzenbarth, University of Erlangen-Nuremberg, Germany</i>   |             |
| <i>Thomas Schreck, SIEMENS CERT, Germany</i>                               |             |
| <i>Florian Echter, SIEMENS CERT, Germany</i>                               |             |
| <i>Felix Freiling, University of Erlangen-Nuremberg, Germany</i>           |             |
| <i>Johannes Hoffmann, Ruhr-University-Bochum, Germany</i>                  |             |

|   |             |
|---|-------------|
| <b>Malicious Takeover of Voting Systems: Arbitrary Code Execution on Optical Scan Voting Terminals.....</b> | <b>1816</b> |
| <i>Russell Jancewicz, University of Connecticut, USA</i>  |             |
| <i>Aggelos Kiayias, University of Connecticut, USA</i>  |             |
| <i>Laurent Michel, University of Connecticut, USA</i>   |             |
| <i>Alexander Russell, University of Connecticut, USA</i>  |             |
| <i>Alexander Shvartsman, University of Connecticut, USA</i>   |             |

**Verifying Multicast-Based Security Protocols Using the Inductive Method.....1824**

*Jean Martina, Universidade Federal de Santa Catarina, Brazil*

*Lawrence Paulson, University of Cambridge, United Kingdom*

**An Empirical Analysis of Malicious Internet Banking Software Behavior.....1830**

*Andre Gregio, CTI Renato Archer, Brazil*

*Vitor Afonso, Unicamp, Brazil*

*Victor Martins, Unicamp, Brazil*

*Dario Fernandes Filho, Unicamp, Brazil*

*Paulo de Geus, Unicamp, Brazil*

*Mario Jino, Unicamp, Brazil*

**An Updated Threat Model for Security Ceremonies.....1836**

*Marcelo Carlos, Royal Holloway University of London, United Kingdom*

*Jean Martina, Universidade Federal de Santa Catarina, Brazil*

*Geraint Price, Royal Holloway University of London, United Kingdom*

*Ricardo Custodio, Universidade Federal de Santa Catarina, Brazil*

**Slicing Droids: Program Slicing for Smali Code .....1844**

*Johannes Hoffmann, Ruhr-University Bochum, Germany*

*Martin Ussath, Ruhr-University Bochum, Germany*

*Michael Spreitzenbarth, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany*

*Thorsten Holz, Ruhr-University Bochum, Germany*

**Bring Your Own Device, Securely.....1852**

*Alessandro Armando, University of Genova, Italy*

*Gabriele Costa, University of Genova, Italy*

*Alessio Merlo, E-Campus University, Italy*

*Luca Verderame, University of Genova, Italy*

**Run-time Control Flow Authentication: An Assessment on Contemporary X86 Platforms.....1859**

*Erdem Aktas, State University of New York at Binghamton, USA*

*Kanad Ghose, State University of New York at Binghamton, USA*

**Supporting Visual Security Cues for WebView-based Android Apps .....1867**

*Dongwan Shin, New Mexico Tech, USA*

*Huiping Yao, New Mexico Tech, USA*

*Une Rosi, New Mexico Tech, USA*

**Service-Oriented Architecture and Programming Track**

**Track Co-Chairs:** Ivan Lanese, Università di Bologna, Italy

Manuel Mazzara, University of Newcastle, United Kingdom

Fabrizio Montesi, ItalianaSoftware, Italy

**Track Editorial.....1875**

**Performance Analysis of a Rule-Based SOA Component for Real-Time Applications .....1877**

*Alexander Cameron, University of South Australia, Australia*

*Markus Stumpter, University of South Australia, Australia*

*Wolfgang Mayer, University of South Australia, Australia*

*Nanda Nandagopal, University of South Australia, Australia*

**On the Reconfiguration of Software Connectors.....1885**

*Nuno Oliveira, Universidade do Minho, Portugal*

*Luís Barbosa, Universidade do Minho, Portugal*

**Apprehensive QoS Monitoring of Service Choreographies.....1893**

*Cesare Bartolini, CNR-ISTI, Italy*

*Antonia Bertolino, CNR-ISTI, Italy*

*Andrea Ciancone, Politecnico di Milano, Italy*

*Guglielmo De Angelis, CNR-ISTI, Italy*

*Raffaella Mirandola, Politecnico di Milano, Italy*

**An Integrated Framework for QoS-based Adaptation and Exception Resolution in WS-BPEL Scenarios.....1900**

*Dionisis Margaritis, University of Athens, Greece*

*Costas Vassilakis, University of Peloponnese, Greece*

*Panagiotis Georgiadis, University of Athens, Greece*

**Efficient Data-Intensive Event-Driven Interaction in SOA.....1907**

*Quirino Zagarese, Department of Engineering, University of Sannio, Italy*

*Gerardo Canfora, Department of Engineering, University of Sannio, Italy*

*Eugenio Zimeo, Department of Engineering, University of Sannio, Italy*

*Iyad Alshabani, INRIA, I3S-CNRS Université de Nice Sophia Antipolis, France*

*Laurent Pellegrino, INRIA, I3S-CNRS Université de Nice Sophia Antipolis, France*

*Françoise Baude, INRIA, I3S-CNRS Université de Nice Sophia Antipolis, France*

**Disciplined Structured Communications with Consistent Runtime Adaptation.....1913**

*Cinzia Di Giusto, CEA, LIST, France*

*Jorge A. Pérez, FCT - New University of Lisbon, Portugal*

**A Flexible Approach for Considering Interdependent Security Objectives in Service Composition.....1919**

*Fatih Karatas, University of Siegen, Germany*

*Dogan Kesdogan, University of Siegen, Germany*

**Monitoring SOA-based applications with Business Provenance.....1927**

*Sergio Manuel Serra da Cruz, UFRRJ, Brazil*

*Raimundo Macario Costa, UFRJ, Brazil*

*Mary Manhaes, UFRJ, Brazil*

*Jorge Zavaleta, UFRJ, Brazil*

**Poster Papers**

**User Centric Complex Event Processing Based On Service Oriented Architectures.....1933**

*Feng Gao, Digital Enterprise Research Institute, Ireland*

*Sami Bhiri, Digital Enterprise Research Institute, Ireland*

**A Conceptual Framework for Collective Adaptive Systems.....1935**

*Antonio Bucchiarone, FBK-IRST, Italy*

*Annapaola Marconi, FBK-IRST, Italy*

*Claudio Antares Mezzina, FBK-IRST, Italy*



Marco Pistore, FBK-IRST, Italy

**Towards an Approach for Modeling and Formalizing SOA Design Patterns with Event-B.....1937**

*Imen Tounsi, University of Sfax ReDCAD-Research unit Sfax, Tunisia*  
*Mohamed Hadj Kacem, University of Sfax ReDCAD-Research unit Sfax, Tunisia*  
*Ahmed Hadj Kacem, University of Sfax ReDCAD-Research unit Sfax, Tunisia*  
*Khalil Drira, CNRS, LAAS, France*  
*Emna Mezghani, CNRS, LAAS, France*

**Heterogeneous Device Interaction Using an IPv6 Enabled Service-oriented Architecture for Building Automation Systems.....1939**

*Markus Jung, Vienna University of Technology, Austria*  
*Jürgen Weidinger, Vienna University of Technology, Austria*  
*Wolfgang Kastner, Vienna University of Technology, Austria*  
*Alex Olivieri, Haute Ecole Spécialisée de Suisse occidentale, Switzerland*

**Trust, Reputation, Evidence and other Collaboration Know-how Track**

**Track Chair:** Jean-Marc Seigneur, University of Geneva, Switzerland

**Track Editorial.....1942**

**Credible Recommendation Exchange Mechanism for P2P Reputation Systems .....1943**

*Eleni Koutrouli, National & Kapodistrian University of Athens, Greece*  
*Aphrodite Tsalgatidou, National & Kapodistrian University of Athens, Greece*

**Composite Trust-based Public Key Management in Mobile Ad Hoc Networks.....1949**

*Jin-Hee Cho, U.S. Army Research Laboratory, U.S.A.*  
*Kevin Chan, U.S. Army Research Laboratory, U.S.A.*  
*Ing-Ray Chen, Virginia Tech, U.S.A.*

**Estimating Domain-based User Influence in Social Networks .....1957**

*Mario Cataldi, Ecole Centrale Paris, France*  
*Nupur Mittal, Ecole Centrale Paris, France*  
*Marie-Aude Aufaure, Ecole Centrale Paris, France*

**Poster Papers**

**A Framework for Evaluating Trust of Service Providers in Cloud Marketplaces.....1963**

*Sheikh Mahbub Habib, Technische Universität Darmstadt, Germany*  
*Vijay Varadharajan, Macquarie University Sydney, Australia*  
*Max Mühlhäuser, Technische Universität Darmstadt, Germany*

**Computer Forensics Track**

**Track Co-Chairs:** Lorie M. Liebrock, New Mexico Institute of Mining and Technology, USA  
Brajendra Panda, University of Arkansas, USA  
Robert L. Hutchinson, Sandia National Laboratories, USA

**A Framework for Semantic Annotation of Digital Evidence.....1966**

*Bruno Hoelz, University of Brasília, Brazil*  
*Celia Ralha, University of Brasília, Brazil*