ACM SAC 2015
The 30th Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2015 ACM SYMPOSIUM ON APPLIED COMPUTING

Salamanca, Spain
April 13-17, 2015

Organizing Committee

Roger L. Wainwright
Javier Bajo
Jiman Hong
Dongwan Shin
Chih-Cheng Hung
Hisham M. Haddad

Juan Manuel Corchado
Fernando De la Prieta
Alessio Bechini
Sara Rodriguez
John Kim

Distributed Systems
(DADS, COSYS, MCA, NET, WCN, WT)

AI and Agents
(BIO, CIVIA, EC, HCI, IIF, IILE, IRMAS, SWA)

Software Development
(EE, MMV, MUSEPAT, RE, SATTA, SE, SOAP, SVT)

Information Systems
(DM, DS, DTTA, IAR, SONAMA)

System Software and Security
(CM, CSP, EMBS,Oops, OS, PL, SEC, SGST, SP, TRECK)

Hosted by
University of Salamanca
### SAC 2015 at Glance

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<tr>
<td>AM Tutorials (10:00am-1:30pm)</td>
<td>Keynote Session (9:30am-11:10am)</td>
<td>AM Breakout Sessions (8:30am-10:10am)</td>
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<td>Coffee Break (11:30am-12:00pm)</td>
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<td>Tutorials Social Luncheon for Lunch Ticket Holders (1:30pm-3:30pm)</td>
<td>SAC Luncheon For all Registered Attendees (1:20pm-3:00pm)</td>
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<td>SRC Posters Exhibit (3:30pm-6:30pm)</td>
<td>SRC Oral Presentations (5:30pm-7:00pm)</td>
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<td>SIGAPP Annual Business Meeting (6:30pm-7:00pm)</td>
<td>Future SAC Organization Meeting (7:00pm-8:00pm)</td>
<td>Track Chairs Business Meeting (6:30pm-7:30pm)</td>
<td>The Conference Ends at 6:50PM</td>
<td>Thank you for your participation and we hope to see you all next year in Pisa, Italy</td>
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<tr>
<td>SIGAPP Reception (8:30pm-11:00pm)</td>
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***** Technical Program Session Schedule *****

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<tr>
<th>Tuesday April 14, 2015</th>
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SAC 2015

Introduction

SAC 2015 is a premier international conference on applied computing and technology. Attendees have the opportunity to hear from expert practitioners and researchers about the latest trends in research and development in their fields. SAC 2015 features two keynote speakers on Tuesday and Thursday, from 9:30 to 11:10. The technical program of the symposium consists of 37 tracks on different research topics, which run from Monday April 13 through Friday April 17, 2015. Regular oral presentation sessions start at 8:30 and end at 19:00 in six parallel sessions. Two poster tracks also run on Wednesday April 15, from 10:10 to 13:10 and from 16:00 to 19:00. In addition, the Student Research Competition (SRC) program, sponsored by Microsoft Research. SRC posters display session runs on Tuesday from 15:30 to 18:30 and SRC Presentations session runs on Wednesday from 17:30 to 19:00.

ACM SIGAPP

The ACM Special Interest Group on Applied Computing is ACM’s primary applications-oriented SIG. Its mission is to further the interests of the computing professionals engaged in the development of new computing applications and applications areas and the transfer of computing technology to new problem domains. SIGAPP offers practitioners and researchers the opportunity to share mutual interests in innovative application fields, technology transfer, experimental computing, strategic research, and the management of computing. SIGAPP also promotes widespread cooperation among business, government, and academic computing activities. Its annual Symposium on Applied Computing (SAC) provides an international forum for presentation of the results of strategic research and experimentation for this interdisciplinary environment. SIGAPP membership fees are: $15.00 for ACM Non-members, $15.00 for ACM Professional Members, and $8.00 for ACM Student Members. For further information on SIGAPP, please contact Sung Shin at Sung_Shin@sdstate.edu or visit the SIGAPP website at http://www.acm.org/sigapp.

Support

Local support for SAC 2015 is provided by University of Salamanca, Telefónica and IBM. The organizing committee acknowledges and thanks the local sponsors for their contributions. Their support has been essential to the success of the Symposium, and it is greatly appreciated.

Symposium Chair Message

Roger L. Wainwright
University of Tulsa, Tulsa, Oklahoma, USA

On behalf of the Organizing Committee, we welcome you to the 30th Annual ACM Symposium on Applied Computing (SAC 2015), hosted by University of Salamanca. This international forum has been dedicated to computer scientists, engineers and practitioners for the purpose of presenting their research findings and results in various areas of applied computing. The organizing committee is grateful for your participation in this exciting international event. We hope that this conference proves interesting and beneficial for all of you.

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

SAC 2015 offers Technical Tracks and Poster Sessions. The success of the conference can be attributed to the substantial contribution of dedicated Track Chairs and Co-Chairs. Each track maintains a program committee and a set of highly qualified reviewers. We wish to thank the Track Chairs, Co-Chairs, Committee Members and participating reviewers for their hard work and effort to make the SAC 2015 conference a high quality conference. We also thank our invited keynote speakers, Professor Il-Yeol Song, College of Computing & Informatics Drexel University, Philadelphia, USA, and PD. Dr. Matthias Klusch, German Research Center for Artificial Intelligence (DFKI), Saarbruecken, Germany, for sharing their knowledge and expertise with SAC 2015 attendees. Most of all, I would like to especially thank the authors and presenters for sharing their experience with the rest of us and to all attendees for joining us in Salamanca, Spain this year.

The local organizing committee has been a major contributor to the success of the SAC 2015 conference. Our gratitude goes to the Local Arrangement Co-Chairs, Dr. Javier Bajo, Technical University of Madrid, Madrid, Spain, and the Local Arrangement Co-Chair, Dr. Fernando De la Prieta, University of Salamanca, Salamanca, Spain.

We also extend our thanks to the Publication Chair, Dr. Dongwan Shin, New Mexico Tech, Socorro, New Mexico, for his tremendous effort in putting together the conference proceedings, Posters Chair, Dr. Chih-Cheng Hung, Southern Polytechnic State University, Marietta, Georgia, USA, for his hard work to make a successful Poster Program, and Tutorials Chair Dr. Sara Rodriguez, University of Salamanca, Salamanca, Spain, for arranging an exciting set of Tutorials. A special thanks to our Program Chairs, Dr. Jiman Hong, Soongsil University, Seoul, Korea, and Dr. Alessio Bechini, University of Pisa, Pisa, Italy, for coordinating and bringing together an excellent Technical Program. Finally, I want to thank the Vice-Chair of the conference, Juan Manuel Corchado, for his hard work and dedication to the SAC 2015 conference.

Again, we welcome you to SAC 2015 in the beautiful city of Salamanca, Spain. We hope you enjoy the SAC 2015 conference and your stay in Spain. Next year, we invite you to participate in SAC 2016 to be held in Pisa, Italy. The conference will be hosted by University of Pisa and Scuola Superiore Sant'Anna.

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**Program Chairs Message**

**Jiman Hong**

*Soongsil University, Seoul, Korea*

**Alessio Bechini**

*University of Pisa, Pisa, Italy*

Welcome to the 30th International Symposium on Applied Computing (SAC 2015). For the past 29 years, SAC has become a major international venue for computing researchers and applied practitioners to convene and share ideas on recent developments in a variety of applied areas of information technology. The success of SAC has been the consolidation of a wide range of applied areas into specialized modules called Tracks. Each of the Tracks is then organized and administered by experts in the respective areas by instituting program committees, carrying out blind reviews according to the ACM guidelines, and finally selecting the highly qualified papers for the Track. Since its inception eight years ago, the Poster Sessions at SAC have become a tradition, and this year again the Poster will be an integral part of the Technical Program at SAC 2015.

The 37 Tracks present in the final program for SAC 2015 originated from the open Call for Track Proposals and are the result of an initial selection of the proposals and a subsequent merging due to organization reasons. The selection was made based both on the success of analogous Tracks in the previous SACs, and targeting new and emerging areas. The Call for Papers for these Tracks attracted 1211 submissions from 57 different countries. The submitted papers underwent the blind review process and, after the subsequent selection, 291 full papers were finally included in Conference Program to be presented during the Symposium, and published in the Conference Proceedings. The final overall acceptance rate for SAC 2015 is 24%. In addition to the accepted full papers, 77 submissions that received high enough review scores were accepted as short papers for the Poster program. The Student Research Competition (SRC) program, sponsored by Microsoft Research, was added starting from SAC 2013. The SRC program is designed to provide graduate students with the opportunity to meet and exchange ideas with researchers and practitioners in their areas of interest. The 15 SRC contributions actually present in the final program have been selected out of 42 submissions.

The Technical Program of SAC 2015 is made possible through the hard work of many people from the scientific community who have volunteered and
committed many hours to make it a success. Much credit goes to the Track Chairs, who committed to guarantee a very high-level scientific profile, dedicating their personal efforts in managing the reviewing process for their Tracks. Once again this year, we follow the previous years’ tradition in organizing various tracks into five different themes. The Symposium Proceedings and the technical presentations are focused around these themes to form a series of related track sessions.

On behalf of the entire SAC 2015 Organizing Committee, we congratulate all the authors for having their papers accepted in their respective Tracks, and we wish to thank all of those who made this year’s technical program a great success. Specifically we wish to thank the speakers, posters chair, track chairs, reviewers, program committee members, session chairs, presenters, and all the attendees. We also wish to convey our special thanks to the local organizing committee lead by Dr. Juan Manuel Corchado from University of Salamanca, Salamanca, Spain, Dr. Javier Bajo, Technical University of Madrid, Madrid, Spain, and Dr. Fernando De la Prieta from University of Salamanca, Salamanca, Spain.

We wish you all a pleasant stay in Salamanca, hope you have a great time at SAC 2015, and you will have the opportunity to share and exchange your ideas and foster new collaborations. We would also like to take this opportunity to convey to you the news that the 31st International Symposium on Applied Computing (SAC 2016) will be held in Pisa, Tuscany, Italy, a region known worldwide for its cultural, artistic, and scientific tradition. The event is scheduled to take place in the historical town of Pisa, whose “leaning tower” is one of the most famous, iconic touristic attractions in Europe. We hope to see you all at SAC 2016.

SAC 2015 Themes

This year SAC tracks are divided into five themes: related themes will be associated to one room, hence related tracks will take place sequentially in the same room in most cases, so as to promote sharing and cross-fertilization of ideas through the whole audience of a theme. Check the program schedule for details. The five themes of SAC 2015 are listed below:

(AIA) AI and Agents: Tracks: BIO, CIVIA, EC, HCI, IIF, IIFE, IRMAS, SWA
(DS) Distributed Systems: Tracks: DADS, COSYS, MCA, NET, WCN, WT
(IS) Information Systems: Tracks: DM, DS, DTTA, IAR, SONAMA
(SD) Software Development: Tracks: EE, MMV, MUSEPAT, RE, SATTA, SE, SOAP, SVT
(SSS) System Software and Security: Tracks: CM, CSP, EMBS, OOPS, OS, PL, SEC, SGST, SP, TRECK

Keynote Speakers

Tuesday April 14, 2015 9:30 - 11:10AM

Professor Il-Yeol Song
College of Computing & Informatics
Drexel University, USA

Big Data Technologies, Use Cases, and Research Issues

Abstract

The era of big data has arrived. Big data bring us the data-driven paradigm and enlighten us to challenge different classes of problems we were not able to solve in the past. We begin to see the impacts of big data in every aspect of our life and society. In this talk, I will first discuss the data-driven paradigm and its impacts on computing. I will then review big data analytic infrastructure and its related big data technologies. I will cover the recent developments in Hadoop ecosystems, NoSQL databases, in-memory databases, internet of things, cloud computing, Real-time analytics, data integration, and data virtualization. I will also discuss big data use cases, research issues, and ways of getting values from big data projects.

Speaker’s Bio

Dr. Il-Yeol Song is professor in the College of Computing and Informatics of Drexel University, Director of Ph.D. Program in Information Studies in his college, and Deputy Director for NSF Research Center on Visual & Decision Informatics. He is also an affiliated professor of Computer Science Department of KAIST, Korea. He is an ACM Distinguished Scientist and an ER Fellow. His research interests include conceptual modeling, data warehousing & OLAP, business intelligence, CRM, object-oriented technologies, healthcare applications, and Big Data technologies. Dr. Song published over 200+ peer-reviewed papers. He is a co-Editor-in-Chief of Journal of Computing Science and Engineering (JCSE) and is in an editorial board member of DKE, JDM, IJEVR, and JDFSL. He won the Best Paper Award in the IEEE CIBCB 2004. He won 14 research awards from competitions of annual Drexel Research Days. He also won four teaching awards from Drexel, including the
Thursday April 16, 2015 9:30 - 11:10AM

PD. Dr. Matthias Klusch
German Research Center for Artificial Intelligence (DFKI)
Agents and Simulated Reality Department
Saarbruecken, Germany

Agents and Semantics for Future Internet Applications: Perspectives and Challenges

Abstract

The future Internet is commonly envisioned to result from the increasing convergence of the current Internet of Services, the Internet of Things, the 3D-Internet, and the Quantum Internet. During the past two decades, agent-based computing and semantic web technologies both of them with deep roots in AI emerged as key enablers of intelligent data and service coordination for applications of the converging Internet in support of industry and business, as well as our personal and social life. In this talk, I will present perspectives of exploiting intelligent agents and semantic technologies for future Internet applications with selected showcases and trends from different domains, and complementary reflections on relevant research and societal challenges.

Speaker's Bio

PD. Dr. Matthias Klusch is Senior Researcher at and Research Fellow of the German Research Center for Artificial Intelligence (DFKI), and private lecturer in computer science at the Saarland University in Saarbruecken, Germany. He is head of the Intelligent Information Systems (I2S) research team of the DFKI Agents and Simulated Reality department. His research is concerned with semantic technologies, service-oriented computing and intelligent software agents for innovative applications in the future Internet and Web. He received his MSc and PhD degrees from the University of Kiel, and his habilitation (PD) degree in computer science from the Saarland University in Germany. Dr. Klusch has been adjunct professor of computer science at the Swinburne University of Technology in Melbourne, Australia (2008-2014), assistant professor at the Free University of Amsterdam (Netherlands) and the Chemnitz University of Technology (Germany), and post-doctoral researcher at the Carnegie-Mellon University in Pittsburgh (USA). Among others, he is on the editorial board of major international journals of semantic Web, AI, information systems, and agent technology, co-organized numerous conferences in these areas, co-founded and is steering committee spokesman of the German conference series on multi-agent system technologies (MATES), was a finalist of the ACM SIGART Award for Excellence in Autonomous Agent Research in 2008, and co-authored more than 190 publications. Web: www.dfki.de/~klusch.

Other Activities

SIGAPP Annual Business Meeting: Tuesday April 14, from 18:30 to 19:00 in Room 1.2. Open to everyone.

SIGAPP Reception: Tuesday April 14, from 20:30 to 23:00 in the Historical Building of the University of Salamanca. Open for everyone.

Future SAC Organization Meeting: Wednesday April 15, from 19:00 to 20:00 in Room 1.2. Open for everyone.

Track Chairs Business Meeting: Thursday April 16, from 18:30 to 19:30 in Room 1.2. Open for the organizing committee and Track Chairs.

SAC Banquet: Thursday April 16, from 21:30 to 24:00 at Alameda Palace. Open for Banquet Ticket holders. See your tickets for full details.

SAC Best Papers Award: Thursday April 16. During the SAC Banquet SAC Program Chairs will award one best paper for each of the five themes and posters of this conference.

SRC Program: The Student Research Competition program includes Poster Display on Tuesday at 15:30 in the cloister and Oral Presentations on Wednesday at 17:30 in Room 2.3. Medals and certificates will be given to the top three winners during the Banquet event.
Tuesday April 14, 2015

TUE 9:30 – 11:10  Auditorium
Keynote Address
Professor Il-Yeol Song
See page 6 for details.

TUE 11:30 – 12:00
Coffee Break
HALL AUDITORIUM

TUE 11:40 – 13:20  Room 2.4
(EC) Applications of Evolutionary Computing
Session Chair: Raúl Giráldez Rojo, Pablo de Olavide University, Spain

Evolving Regression Trees Robust to Missing Data
Luciano Blomberg, Rodrigo Barros, and Duncan Ruiz

An approach to the MOGAs initialization problem using an algorithm based on Path Relinking
Thiago Gomes Nepomuceno, José Everardo Bessa Maia, and Leonardo Sampaio Rocha

Dynamic Optimization of Multi-layered Reinsurance Treaties
Haoku Wang, Omar Andres Carmona Cortes, and Andrew Rau-Chaplin

Evolving Decision-Tree Induction Algorithms with a Multi-Objective Hyper-Heuristic
Márcio Basgalupp, Rodrigo Barrosand Vili Podgorelec

Collective Preferences in Evolutionary Multi-Objective Optimization: Techniques and Potential Contributions of Collective Intelligence
Daniel Cinalli, Luis Marti, Nayat Sanchez-Pi, and Ana Cristina Garcia

TUE 11:40 – 13:20  Room 2.5
(Network-1) Networking
Session Chair: Andre Gomes, University of Bern, Switzerland

Content Placement In Heterogeneous End-To-End Virtual Networks
Kostas Katsalis, Vasilis Sourlas, Thanasis Papaioannou, Thanasis Korakis, and Leandros Tassiulas

High Speed Network Impacts And Power Consumption Estimation For Cloud Data Centers
Daniel Lago, Edmundo Madeira, and Deep Medhi

Refactoring Internet Of Things Middleware Through Software-Defined Network
Lucas Arbiza, Leandro Bertholdo, Carlos dos Santos, Lisandro Granville, and Liane Tarouco

Designing Network Servers Within A Hierarchical Scheduling Framework
Zahid Iqbal, Luis Almeida, and Moris Behnam

Effective Manycast Messaging For Kademia Network
Lubos Matl, Tomas Cerny, and Michael Donahoo

TUE 11:40 – 13:20  Room 2.3
(SONAMA-1) Social Network and Media Analysis
Session Chair: Marcos G. Quiles, Federal University of São Paulo (UNIFESP), Brazil

Multimodal Graph-based Analysis over the DBLP Repository: Critical Discoveries and Hypotheses
Gabriel P Gimenes, Hugo Gualdron, Mario Gazziero, and Jose P Rodrigues Jr

Authorship Contribution Dynamics On Publication Venues In Computer Science: An Aggregated Quality Analysis
Thiago H. P. Silva, Mirella M. Moro, and Ana Paula C. Silva

An Effective Approach To Group Recommendations Based On Belief Propagation
Irfan Ali and Sang-Wook Kim

Predicting Well-Being With Geo-Referenced Data Collected From Social Media Platforms
João Loff, Manuel Reis, and Bruno Martins

Classification Of Twitter Follow Links Based On The Followers’ Intention
Hikaru Takemura, Atsushi Tanaka, and Keishi Tajima

TUE 11:40 – 13:20  Room 1.2
(SE-1) Software Engineering
Session Chair: Byungjeong Lee, University of Seoul, Korea

A Bayesian Network Approach to Assist on the Interpretation of Software Metrics
Mirko Perkusich, Amaury Medeiros, Lenardo C. e Silva, Kyller Gorgónio, Hyggo Almeida, and Angelo Perkusich

Architectural Stability and Evolution Measurement for Software Reuse
Eleni Constantinou and Ioannis Stamelos

An Investigation on the Evolutionary Nature of Exception Handling Violations in Software Product Lines
Demóstenes Sena, Roberta Coelho, and Uirá Kulesza
Implementation and evaluation of an approach for Extracting Feature Models from Documented UML Use Case Diagrams
Mariem Mefteh, Nadia Bouassida, and Hanène Ben Abdallah

A Framework to Formally Verify Conformance of a Software Process to a Software Method
Djamel-Eddine Khelladi, Reda Bendraou, Souheib Benarir, Yoann Laurent, and Marie-Pierre Gervais

**TUE 11:40 – 13:20 Room 2.7**

(OOPS) Object Oriented Programming Languages and Systems
Session Chair: Davide Ancona, Università di Genova, Italy

- The Omission Finder for Debugging What-Should-Have-Happened Bugs in Object-Oriented Programs
  Kouhei Sakurai and Hidehiko Masuhara

- Adaptive Just-in-time Value Class Optimization: Transparent Data Structure Inlining for Fast Execution
  Tobias Pape, Carl Friedrich Bolz, and Robert Hirschfeld

- Reifying the Reflectogram -- Towards Explicit Control for Implicit Reflection
  Nick Papoulias, Marcus Denker, Stephane Ducasse, and Luc Fabresse

- Composable and Hygienic Typed Syntax Macros
  Cyrus Omar, Chonglong Wang, and Jonathan Aldrich

- The Safety of Dynamic Mixin Composition
  Eden Burton and Emil Sekerinski

**TUE 15:00 – 16:40 Room 2.4**

(SWA-1) The Semantic Web and Applications
Session Chair: Hyoil Han, Marshall University, USA

- Exploiting Multilinguality For Creating Mappings Between Thesauri
  Mauro Dragoni

- An Approach For Building Lexical-Semantic Resources Based On Heterogeneous Information Sources
  José Gildo De Araújo Júnior, Ulrich Schiel, and Leandro Balby Marinho

- Learning Folksonomies From Task-Oriented Dialogues
  Gregory Wanderley and Emerson Paraiso

- An Ontological Approach For Simulating Legal Action In The Brazilian Penal Code
  Cleyton Mário de Oliveira Rodrigues, Frederico Luis Gonçalves de Freitas, Eunice Palmeira Silva, Ryan Ribeiro de Azevedo, and Patricia Vieira da Silva Barros

- Design and Implementation of A Hybrid Distributed Index Structure For RDF Data
  Long Cheng, Spyros Kotoulas, Tomas E Ward, and Georgios Theodoropoulos

**TUE 11:40 – 13:20 Room 2.6**

(EE-1) Enterprise Engineering
Session Chair: Artur Caetano

- Using ArchiMate to Model a Process Assessment Framework
  Nuno Silva, Miguel Mira da Silva, Beatriz Barafort, Marco Vicente, and Pedro Sousa

- Using Event Logs And The $\Psi$-Theory To Analyse Business Processes
  Pedro Linares Pinto, Carlos Mendes, Miguel Mira da Silva, and Artur Caetano

- Runtime Detection Of Business Process Compliance Violations: An Approach Based On Anti Patterns
  Ahmed Awad, Ahmed Barnawi, Amal Elgammal, Rudwa Elshawi, Abduallah Almalaise, and Sherif Sakr

- Modelling strategy with ArchiMate
  Adina Aldrea, Maria Eugenia Iacob, Jos van Hillegersberg, Dick Quartel, Lianne Bodenstaff, and Henry Franken

**TUE 13:20 – 15:00**

Lunch Break

**CONFERENCE VENUE**

**TUE 15:30 – 18:30**

SRC Posters Exhibition
CLOISTER
See page 26 for details.
TUE 15:00 – 16:40 Room 1.2

(SE-2) Software Engineering
Session Chair: Runje Song, Baylor University, USA

Incremental Aspect Weaving - An approach to faster AOP learning
Y. Raghu Reddy, Anish Shankar, and Madhavan Chetlur

Design Pattern Detection using FINDER
Haneen Dabain, Ayesha Manzer, and Vassilios Tzerpos

Pattern-Based Transformation of Sequence Diagrams Using QVT
Dae-Kyoo Kim and Byunghun Lee

From UML Diagrams to Simulink Models: a Precise and Verified Translation
Andrei Costa, Simone Cavalheiro, Luciana Foss, and Leila Ribeiro

Mapping Functional Behavior onto Architectural Model in a Model Driven Embedded System Design
Prachi Joshi, Sandeep Shukla, Jean Pierre Talpin, and Huafeng Yu

TUE 15:00 – 16:40 Room 2.3

(SONAMA-2) Social Network and Media Analysis
Session Chair: Bruno Martins, University of Lisbon and INESC-ID Country, Portugal

An ILS algorithm to evaluate structural balance in signed social networks
Mario Levorato, Lucia Drummond, Yuri Frota, and Rosa Figueiredo

Modelling Users Decision-Making Process About Excluding Ideas As A Result Of Mutual Influence
Vinicius Fachin Nonnennacher, Laiz Paulo Luna de Oliveira, Marta Becker Villamil, and Bardo E.J. Bodmann

A Naive Bayes Model Based On Overlapping Groups For Link Prediction In Online Social Networks
Jorge Valverde-Rebaza, Alan Valejo, Lilian Berton, Thiago Faleiros, and Almeu de Andrade Lopes

An Evolutionary Game Model For The Spread Of Non-Cooperative Behavior In Online Social Networks
Sarah Rajtmajer, Christopher Griffin, Derek Mikesell, and Anna Squicciarini

Community Detection, With Lower Time Complexity, Using Coupled Kuramoto Oscillators
João Eliakin Mota de Oliveira, Marcos G. Quiles, Marcos D. N. Maia, and Elbert E. N. Macau

TUE 15:00 – 16:40 Room 2.6

(EE-2) Enterprise Engineering
Session Chair: Artur Caetano

(SOAP-1) Service-Oriented Architecture and Programming
Session Chair: Marcello Maria Bersani, Polytechnic of Milan, Italy

SLA Composition in Service Networks: a Tool for Representing Relationships Between SLAs and Contracts
Marco Zappatore, Antenella Longo, and Mario Alessandro Bochicchio

Matching Of Events And Activities - An Approach Based On Behavioral Constraint Satisfaction
Thomas Baier, Andreas Rogge-Solti, Jan Mendling, and Mathias Weske

Mining Processes With Multi-Instantiation
Ingo Weber, Mostafa Farschchi, Jan Mendling, and Jean-Guy Schneider

A hybrid framework for WS-BPEL scenario execution adaptation, using monitoring and feedback data
Dionisis Margaris, Costas Vassilakis, and Panagiotis Georgiadis

A Software Process Line for Service-Oriented Applications
Cleiton Garcia, Marco Paludo, Andreia Malucelli, and Sheila Reinehr

TUE 15:00 – 16:40 Room 2.7

(PL) Programming Languages
Session Chair: Barrett Bryant, University of North Texas, USA

Thunk Recycling For Lazy Functional Languages: Operational Semantics And Correctness
Yasunao Takano and Hideya Iwasaki

Composable Memory Transactions With Eager Version Management
Rodrigo Medeiros Duarte, Andre Raulher Du Bois, Mauricio Lima Pilla, and Gerson Geraldo Cavalheiro

Nested Atomic Sections With Thread Escape: Compilation
Frederic Dahrowski, Frederic Loulergue, and Thomas Pinsard

Runtime Checking C Programs
Reed Milewicz, Rajesh Vanka, James Tuck, Daniel Quinlan, and Peter Pirkelbauer

A Modelling Language For The Effective Design Of Java Annotations
Irene Córdoba and Juan de Lara
**TUE 16:40 – 17:10**

Coffee Break

**HALL AUDITORIUM**

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**TUE 17:10 – 18:50**

**Room 2.4**

(SWA-2) The Semantic Web and Applications

*Session Chair:* Mauro Dragoni, Fondazione Bruno Kessler, FBK-IRST, Italy

**TUE 17:10 – 18:50**

**Room 2.5**

(COSYS) Cooperative Systems

*Session Chair:* Rachid Anane, Coventry University, UK

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**TUE 17:10 – 18:50**

**Room 2.3**

(DS) Data Streams

*Session Chair:* Joao Gama, LIAAD-INESC TEC, University of Porto, Portugal

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**TUE 17:10 – 18:50**

**Room 2.4**

(RDF Chain Query Optimization in a Distributed Environment)

Alexander Hogenboom, Ewout Nieuwenhuijsen, Milan Jansen, Flavius Prasinicar, and Damir Vandić

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**TUE 17:10 – 18:50**

**Room 2.5**

Processing Billions of RDF Triples on a Single Machine using Streaming and Sorting

Francesco Coreglio, Marco Rospocher, Michele Mostarda, and Marco Amadori

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**TUE 17:10 – 18:50**

**Room 2.6**

pFOIL:DL: Learning (Fuzzy) EL Concept Descriptions from Crisp OWL Data Using a Probabilistic Ensemble Estimation

Umberto Straccia and Matteo Mucci

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**TUE 17:10 – 18:50**

**Room 2.7**

Horn-Rule Based Compression Technique for RDF Data

Gayathri V and Sreenivasa Kumar P

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**TUE 17:10 – 18:50**

**Room 2.8**

A Supervised Learning Approach To Detect Subsumption Relations Between Tags In Folksonomies

Alex Rego, Leandro Marinho, and Carlos Pires

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**TUE 17:10 – 18:50**

**Room 2.9**

Meta-Strategy for Cooperative Tasks with Learning of Environments in Multi-Agent Continuous Tasks

Ayumi Sugiyama and Toshiharu Sugawara

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**TUE 17:10 – 18:50**

**Room 3.1**

Predictability in Human-Agent Cooperation: Adapting to Humans’ Personalities

Sebastian Ahrnh, Benjamin Breitung, Johannes Fährdrich, and Sahin Albayrak

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**TUE 17:10 – 18:50**

**Room 3.2**

A Dynamic-Adaptive Architecture For 3D Collaborative Virtual Environments Based On Graphic Clusters

Diego Dias, Marcelo Guimarães, Torsten Kuhlen, and Luís Trelivin

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**TUE 17:10 – 18:50**

**Room 3.3**

Cooperative Middleware Platform As A Service For Internet Of Things Applications

Leonardo Albertam Amaral, Ramão Tiago Tiburski, Everton de Matos, and Fabiano Hessel

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**TUE 17:10 – 18:50**

**Room 3.4**

SNCStream: A Social Network-based Data Stream Clustering Algorithm

Jean Paul Barddal, Heitor Murilo Gomes, and Fabricio Enembreck

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**TUE 17:10 – 18:50**

**Room 3.5**

Deep Learning in Partially-labeled Data Streams

Jesse Read, Fernando Perez-Cruz, and Albert Rifet

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**TUE 17:10 – 18:50**

**Room 3.6**

Forgetting Methods for Incremental Matrix Factorization in Recommender Systems

Paweł Matuszyk, João Vinagre, Myra Spiliopoulou, Alípio Mário Jorge, and João Gama

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**TUE 17:10 – 18:50**

**Room 3.7**

Pairwise Combination of Classifiers for Ensemble Learning on Data Streams

Heitor Murilo Gomes, Jean Paul Barddal, and Fabricio Enembreck

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**TUE 17:10 – 18:50**

**Room 3.8**

Exploring decision drivers on god class detection in three controlled experiments

José Amancio Macedo Santos and Manoel Gomes de Mendonça

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**TUE 17:10 – 18:50**

**Room 3.9**

Automated Software Winnowing

Gregory Malecha, Ashish Ghehni, and Natarajan Shankar

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**TUE 17:10 – 18:50**

**Room 4.1**

Examining the Effectiveness of Using Concolic Analysis to Detect Code Clones

Daniel Krutz, Samuel Malachowsky, and Emad Shihab

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**TUE 17:10 – 18:50**

**Room 4.2**

COSMIC Functional Measurement of Mobile Applications and Code Size Estimation

Loris D’Avanzo, Filomena Ferrucci, Carmine Gravino, and Pasquale Salza

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**TUE 17:10 – 18:50**

**Room 4.3**

ACFS: A Completely Fair Scheduler for Asymmetric Single-ISA Multicores

Juan Carlos Saéz, Adrian Pouza, Fernando Castro, Daniel Chaver, and Manuel Prieto-Matas

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**TUE 17:10 – 18:50**

**Room 4.4**

M-CLOCK: Migration Optimized Page Replacement Algorithm for Hybrid DRAM and PCM Memory Architecture

Minho Lee, Dong Hyun Kang, Junghoon Kim, and Young Ik Eom

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**TUE 17:10 – 18:50**

**Room 4.5**

Improving Random Write Performance In Heterogeneous Erasure-Coded Drive Arrays By Offloading Code Block Requests

Nikolaus Jeremic, Helge Parzyjegla, and Gero Mühl
Towards Fast Profiling Of Storage Devices Regarding Access Sequentiality
Francieli Zanon Boito, Rodrigo Virote Kassick, Philippe O. A. Navaux, and Yves Denneulin

On Running Data-Intensive Algorithms with Intelligent SSD and Host CPU: A Collaborative Approach
Yong-Yeon Jo, SungWoo Cho, Sang-Wook Kim, Duck-Ho Bae, and Hyunok Oh

TUE 17:10 – 18:50  Room 2.6  
(SOAP-2) Service-Oriented Architecture and Programming
Session Chair: Marcello Maria Bersani, Polytechnic of Milan, Italy

Model-Checking Verification of Publish-Subscribe Architectures in Web Service Contexts
Gregorio Diaz, Maria Emilia Cambronero, Hermenegilda Macia, and Valentin Valero

A Data Quality-aware Cloud Service based on Metaheuristic and Machine Learning Provisioning Algorithms
Dinâs C. Nascimento, Carlos Eduardo Pires, and Demetrio Mestre

Formal modeling self-adaptive service-oriented applications
Elvina Riccobene and Patrizia Scandurra

Characterizing the Performance of Web Service Frameworks under Security Attacks
Rui Oliveira, Nuno Laranjeiro, and Marco Vieira

Wednesday April 15, 2015

Wed 8:30 – 10:10  Room 2.4  
(SWA-3) The Semantic Web and Applications
Session Chair: Hyoil Han, Marshall University, USA

(IILE-1) Intelligent and Interactive Learning Environments
Session Chair: Seiji Isotani, University of Sao Paulo, Brazil

Towards an Ontology Pattern Language for Harmonizing Software Process related ISO Standards
Fabiano Ruy, Ricardo Falbo, Monalessa Barcellos, and Giancarlo Guizardi

Semantic Analysis of Focused Multi-Document Summarization (FMDs) of Text
Quinsulon Israel, Hyoil Han, and II-Yeel Song

Wed 8:30 – 10:10  Room 2.3  
(DTTA-1) Database Theory, Technology and Applications
Session Chair: Junping Sun, Nova Southeastern University, USA

HB+tree: Use Hadoop and HBase even your data isn’t that big
Athanasios Kaplanis, Marios Kendea, Spyros Sioutas, Christos Makris, and Giannis Tzimas

Adaptive Sorted Neighborhood Blocking for Entity Matching with MapReduce
Demetrio Mestre, Carlos Eduardo Pires, and Dinãs Nascimento

Performance Prediction for Set Similarity Joins
Christian Faileiro Sidney, Diego Sarmento Mendes, Leonardo Andrade Ribeiro, and Theo Harder
Combine-and-Conquer: Improving the Diversity in Similarity Search Through Influence Sampling
Lucio Santos, Willian Oliveira, Luiz Carvalho, Monica Ferreira, Agma Traina, and Caetano Traina Jr.

WED 8:30 – 10:10 Room 1.2
(SE-4) Software Engineering
Session Chair: Byungjeong Lee, University of Seoul, Korea

WED 8:30 – 10:10 Room 2.7
(OS-2) Operating Systems
Session Chair: Rivalino Matias, Federal University of Uberlandia, Brazil

DesignSpace -- An Infrastructure for Multi-User/Multi-Tool Engineering
Andreas Demuth, Markus Riedl-Ehrenleitner, Alexander Nöhrer, Peter Hehenberger, Klaus Zeman, and Alexander Egyed

SLC A Visual Cohesion Metric to Predict the Usability of Graphical User Interfaces
Khalid Alemerien and Kenneth Magel

Developers Assignment for Analyzing Pull Requests
Manoel Limeira de Lima Júnior, Daricélio Moreira Soares, Alexandre Plastino, and Leonardo Murta

Acceptance Factors of Pull Requests in Open-Source Projects
Daricélio Moreira Soares, Manoel Limeira de Lima Júnior, Leonardo Murta, and Alexandre Plastino

A Method To Support Search String Building In Systematic Literature Reviews Through Visual Text Mining
Germano Mergel, Milene Silveira, and Tiago da Silva

WED 10:10 – 10:40
Coffee Break
HALL AUDITORIUM

WED 10:10 – 13:10
Poster Session I
CLOISTER

An Experimental Comparison Analysis Of Kernel-Level Memory Allocators
Tais Borges Ferreira, Rivalino Matias Jr., Autran Macedo, and Bruno Evangelista

Partial Coscheduling Of Virtual Machines Based On Memory Access Patterns
Anselm Busse, Jan H. Schönher, Matthias Dienes, Philippe O. A. Navaux, and Hans-Ulrich Heiß

Dual Region Write Buffering: Making Large-Scale Nonvolatile Buffer using Small Capacitor in SSD
Dongwook Kim and Sooyong Kang

SSD caching to overcome small write problem of disk-based RAID in enterprise environments
Eunjae Lee, Yongseok Oh, and Donghe Lee

Exposing Non-Volatile Memory Cache For Adaptive Storage Access
Shuichi Oikawa

WED 13:20 – 15:00
Lunch Break
CONFERENCE VENUE

WED 15:00 – 16:50 Room 2.4
(IILE-2) Intelligent and Interactive Learning Environments
Session Chair: Seiji Isotani, University of Sao Paulo, Brazil

An Approach to Early Evaluation of Informational Privacy Requirements
Balbir Barn, Giuseppe Primiero and Ravinder Barn

Engineering Trust- and Reputation-based Security Controls for Future Internet Systems
Kristian Beckers, Maritza Heisel, Francisco Moyano, and Carmen Fernandez-Gago

TRL - A Traceability Representation Language
Arthur Marques, Franklin Ramalho, and Wilkerson L. Antrade

VoiceToModel: An Approach to Generate Requirements Models from Speech Recognition Mechanisms
Fábio Soares, João Araújo, and Fernando Wanderley

Posters of the following Tracks: BIO, CIVIA, CM, COSYS, CSP, DADS, DM, DS, EE, EMBS, HCI, IAR, IILE, IRMAS, MCA, MMV
(See page 23 for detailed list of Posters)
A Survey Analysis On Goal Orientation Changes In An Information Systems Distance Course: A Brazilian Case Study
Cheops Malta, Ranilson Paiva, Alan da Silva, Ig Bittencourt, and Ananias Queiroga

Beyond Fun: An Interactive And Educational 3D Traffic Rules Game Controlled By Non-Traditional Devices
Maria Andréia F. Rodrigues, Daniel V. Macedo, Yvens R. Serpa, and Ygor R. Serpa

Towards Automatic Prediction of Student Performance in STEM Undergraduate Degree Programs
Laci Mary Barbosa Manhães, Sergio Samuel Serra da Cruz, and Geraldo Zimbrão

Improving Pedagogical Recommendations By Classifying Students According To Their Interactional Behavior In A Gamified Learning Environment
Ranilson Paiva, Ig Bittencourt, Alan da Silva, Seiji Isotani, and Patricia Jaques

FAT: A real-time (F)orum (A)ssessment (T)ool to assist tutors with discussion forums assessment
Bernardo Pereira Nunes, Matthew Tyler-Jones, Gilda Helena B. de Campos, Sean W. M. Siqueira, and Marco Antonio Casanova

WED 15:00 – 16:50 Room 2.5
(MCA-2) Mobile Computing and Applications
Session Chair: Alvin Chan, The Hong Kong Polytechnic University, Hong Kong

A Context Simulator As Testing Support For Mobile Apps
Vaninha Vieira, Konstantin Holl, and Michael Hassel

A Scheduler For Mobile Cloud Based On Weighted Metrics And Dynamic Context Evaluation
Francisco Airon Silva, Paulo Maciel, Gileno Filho, and Rubens Matos

To Cloud Or Not To Cloud: A Context-Aware Deployment Perspective Of Augmented Reality Mobile Applications
Nayyah Zia Naqvi, Karel Moens, Arun Ramakrishnan, Davy Preuveneers, Danny Hughes, and Yolande Berbers

Determining the Location of Buildings given a Single Picture, Environment Maps and Inaccurate GPS Coordinates
Jonas C. Sampaio, Raphael S. Evangelista, and Leandro A. F. Fernandes

On Device Anomaly Detection For Resource-Limited Systems
Maroua Ben Attia, Chamseddine Talhi, Abdelwahab Hamou-Lhadj, Babak Kharovlhar, Vincent Turpaud, and Mario Couture

WED 15:00 – 16:50 Room 2.3
(DTTA-2) Database Theory, Technology and Applications
Session Chair: Junping Sun, Nova Southeastern University, USA

Parallel Similarity Search Based On The Dimensions Value Cardinalities Of Image Descriptor Vectors
Dimitrios Rafailidis and Yannis Manolopoulos

Bt-Join: A Join Operator for Asymmetric Storage Device
Neusa L. Evangelista, José de Aguiar M. Filho, Angelo Brayner, and Namom Alencar

An ETL Optimization Framework Using Partitioning and Parallelization
Xiu Feng Li and Nadeem Itikhar

A Framework for Investigating the Performance of Sum Aggregations over Encrypted Data Warehouses
Claudivan Cruz Lopes and Valeria Cesário Times

Personalized Recommendation of SOLAP queries: Theoretical framework and Experimental Evaluation
Saída Aissi, Mohamed Salah Gouider, Tarek Sboui, and lamjed Ben said

WED 15:00 – 16:50 Room 1.2
(SE-5) Software Engineering
Session Chair: Eunjee Song, Baylor University, USA

Predicting Severity of Bug Report by Mining Bug Repository with Concept Profile
Tao Zhang, Geunseok Yang, Byungjeong Lee, and Alvin T.S. Chan

Parallel Reachability Testing Based on Hadoop MapReduce
Xiaofang Qi, Yuefan Li, and Mingming Zhou

Test Coverage and Impact Analysis for Detecting Refactoring Faults: A Study on the Extract Method Refactoring
Everton Alves, Tiago Massoni, and Patricia Machado

AB=BA: Execution Equivalence as a New Type of Testing Oracle
Alexander Elvasov, Vishnu Prasetya, Jurrian Hage, Urko Rueda, Tanja Vos, and Nelly Condori Fernandez

Combining Static And Dynamic Data flow Analysis: A Hybrid Approach For Detecting Data Leaks In Java Applications
Misael Mongiovì, Giovanni Giannone, Andrea Fornaia, Giuseppe Pappalardo, and Emiliano Tramontana
Profiling Energy Profilers
Erik Jagroep, Jan Martijn E. M. van der Werf, Slinger Jansen, Miguel Ferreira, and Joost Visser

Solar Irradiance Forecasting Using Multi-Layer Cloud Tracking And Numerical Weather Prediction
Jin Xu, Shinjae Yoo, Dantong Yu, Dong Huang, John Heiser, and Paul Kalb

Harnessing The Unknown In Advanced Metering Infrastructure Traffic
Valentin Tudor, Magnus Almgren, and Marina Papatriantafilou

Smartflow: A Solution For Autonomic Management And Control Of Communication Networks For Smart Grids
Yona Lopes, Natalia Fernandes, Carlos Bastos, and Débora Muchaluat-Saade

Defending Against Load Monitoring In Smart Metering Data Through Noise Addition
Pedro Barbosa, Andrey Brito, and Hyggo Almeida

By-design Vulnerabilities in the ANSI C12.22 Protocol Specification
Julian Rrushi, Hassan Parhangi, Radina Nikolic, Clay Howey, Kelly Carmichael, and Ali Palizban
A New Approach to Biometric Recognition Based on Hand Geometry
Márcia V. P. do Nascimento, Leonardo V. Batista, and N. L. Cavalcanti Jr

Shape Description Based on Bag of Salience Points
Glauco V. Pedrosa, Agma J. M. Traina, and Celia A. Z. Barcelos

OR-PCA with Dynamic Feature Selection for Robust Background Subtraction
Sajid Javed, Andrews Sobral, Thierry Bouwmans, and Soon Ki Jung

3DLBP and HAOG fusion for Face Recognition Utilizing Kinect as a 3D Scanner
João Baptista Cardia Neto and Aparecido Nilceu Marana

A Shortest Path Algorithm for 2D Seismic Horizon Tracking
Eliana L. Goldner, Cristina N. Vasconcelos, Pedro Mario Silva, and Marcelo Gattass

Statistical, Forecasting And Metaheuristic Techniques For Network Anomaly Detection
Gilberto Fernandes, Eduardo Pena, Luiz Carvalho, Joel Rodrigues, and Mario Proença

A Source-location Privacy Protection Strategy via Pseudo Normal Distribution-based Phantom Routing in WSNs
Jun Huang, Meisong Sun, Shutong Zhu, Yi Sun, Cong-cong Xing, and Qiang Duan

RSSI-based Localization of a Wireless Sensor Node with a Flying Robot
Frank Bohdanowicz, Hannes Frey, Rafael Funke, Dominik Mosen, Florentin Neumann, and Ivan Stoimenovic

Channel and Power Allocation Algorithm to Optimize the Performance of Large WLANs
Marcelo Riedi, Giovanna G. Basilio, Marcelo E. Pellenz, Manoel C. Penna, Edgard Jamhour, Richard D. Souza, and Hermes I. Del Monego

A Grammatical Approach to Data-centric Case Management in a Distributed Collaborative Environment
Eric Badouel, loic Helouet, Christophe Morvan, and Georges Edouard Kouamou

A Calculus for Attribute-based Communication
Yehia Abd Alrahman, Rocco De Nicola, Michele Loreti, Francesco Tiezzi, and Roberto Vigo

Data-Centric Authorization and Integrity Control in a Linda Tuplespace
Anders Fongen

Protelis: Practical Aggregate Programming
Danilo Pianini, Mirko Virolì and Jacob Beal
### THU 11:40 – 13:20 Room 2.6

**A Systematic Literature Review On The Description Of Software Architectures For Systems Of Systems**
Milena Guesi, Valdemar V. G. Neto, Thiago Bionchi, Katia R. Felizardo, Flavio Oquendo, and Elisa Y. Nakagawa

**A Meta-Process to Construct SoS Software Architectures**
Marcelo Gonçalves, Flavio Oquendo, and Elisa Nakagawa

**OntoAD: a Formal Ontology for Architectural Descriptions**
Milena Guesi, Dilvan A. Moreira, Gabriel Abdalla, Flavio Oquendo, and Elisa Y. Nakagawa

**A Multi-Scale Modeling Approach For Software Architecture Deployment**
Amal Gassara, Ismael Boutaissi Rodriguez, and Mohamed Jmaiel

**A Quantitative, Evidence-Based Approach For Recommending Software Modules**
Thaís Pereira and Gledson Elias

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### THU 13:20 – 15:00

Lunch Break

CONFERENCE VENUE

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### THU 15:00 – 16:40 Room 2.3

**A Universal Topic Framework (UniZ) and Its Application in Online Search**
Youngchul Cha, Keng-hao Chang, Hari Bommaganti, Ye Chen, Tak Yan, Bin Bi, and Junghoo Cho

**Column-specific Context Extraction for Web Tables**
Katrin Braunschweig, Maike Thiele, Julian Eberius, and Wolfgang Lehner

**Towards a Feature-Rich Data Set for Personalized Access to Long-Tail Content**
Christin Seifert, Jörg Schlöttker, and Michael Granitzer

**BranchGuide: An Indexing Technique for Efficient, Lossless Processing of Branching Path Queries**
Talles Viana and Gledson Elias

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### THU 15:00 – 16:40 Room 2.4

**Transcript-Based Reannotation For Microarray Probesets**
Eduardo Valente and Miguel Rocha

**Discovering Weighted Motifs In Gene Co-Expression Networks**
Sarvenaz Choobdar, Pedro Ribeiro, and Fernando Silva

**Facing The Genome Data Deluge: Efficiently Identifying Genetic Variants With In-Memory Database Technology**
Cindy Fähnrich, Matthias-P. Schapranow, and Hasso Plattner

**All-In-Focus Imaging Technique Used To Improve 3D Retinal Fundus Image Reconstruction**
Danilo Motta, Luciana de Matos, Amanda Cianciatto de Souza, Rafael Marcato, Afonso Puiva, and Luis Alberto Vieira Carvalho

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### THU 15:00 – 16:40 Room 2.5

**Performance Evaluation Of Heterogeneous Wireless Networks Considering Competing Objectives And Viewpoints**
Jason B. Ernst, Stefan C. Kremer, and Joel J.P.C Rodrigues

**Vehicular Content Centric Network (VCCN): A Survey and Research Challenges**
Safdar Hussain Bouk, Syed Hassan Ahmed, and Dongkyun Kim

**A Taxonomy Of Reliable Request-Response Protocols**
Naghmeh Ivaki, Nuno Laranjeiro, and Filipe Araujo

**Workload Characterization Model For Optimal Resource Allocation In Cloud Middleware**
Shruti Kunde and Tridib Mukherjee

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### THU 15:00 – 16:40 Room 2.6

**PBS Finder: a Tool to Assist RNA Binding Proteins Studies**
Diogo Teixeira, Andreia Cruz, Sandra Bráz, Alexandra Moreira, João Belvas, and Rui Camacho

**Performance Evaluation Of Heterogeneous Wireless Networks Considering Competing Objectives And Viewpoints**
Jason B. Ernst, Stefan C. Kremer, and Joel J.P.C Rodrigues

**Vehicular Content Centric Network (VCCN): A Survey and Research Challenges**
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**A Taxonomy Of Reliable Request-Response Protocols**
Naghmeh Ivaki, Nuno Laranjeiro, and Filipe Araujo

**Workload Characterization Model For Optimal Resource Allocation In Cloud Middleware**
Shruti Kunde and Tridib Mukherjee

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**Final Program Page 17 SAC 2015, April 13 – 17,**
**Runtime Enforcement for Component-Based Systems**
Hadil Charafeddine, Khalil El-Harake, Ylèes Falcone and Mohamad Jaber

**Symmetry reduced state classes for Time Petri nets**
Pierre-Alain Bordil, Bernard Berthomieu, Silvano Dal Zilio, and François Vernadat

**LocFaults: A new Flow-driven and Constraint-based Error Localization Approach**
Mohammed Bekkouche, Hélène Collavizza and Michel Rueher

**Extending mCRL2 with ready simulation and iocos input-output conformance simulation**
Carlos Gregorio-Rodriguez, Luis Llana, and Rafael Martinez-Torres

**Constructive extensibility of trustworthy component-based systems**
José Diégelo, Augusto Sampaio, and Marcel Oliveira

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**THU 15:00 – 16:40 Room 2.6**

**(SATTA-2) Software Architecture: Theory, Technology, and Applications**
Session Chair: Milena Guesi Margarido, ICMC-USP, Brazil

**(MUSEPAT-1) Multicore Software Engineering, Performance, Applications, and Tools**
Session Chair: Jeremy S. Bradbury, University of Ontario Institute of Technology, Canada

A Decision-Making Tool To Support Architectural Designs Based On Quality Attributes
Italo Silva, Patrick Brito, Baldino Fonseca, Evandro Costa, and André Silva

Requirements, Design And Evaluation Of A Privacy Reference Architecture For Web Applications And Services
Tania Basso, Regina Moraes, Mario Jino, and Marco Vieira

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**Architecting Cloud Tools Using Software Product Line Techniques: An Exploratory Study**
Leonardo Tizei, Leonardo Azevedo, Maximilien de Bayser, and Renato Cerqueira

**Boosting Locality In Multi-Version Partial Data Replication**
João A. Silva, João M. Lourenço, and Hervé Paulino

A Scalable Multi-Producer Multi-Consumer Wait-Free Ring Buffer
Andrew Barrington, Steven Feldman, and Damian Dechev

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**THU 16:40 – 17:10**

**Coffee Break**

**THU 17:10 – 18:50 Room 2.4**

**(BIO-2) Computational Biology and Bioinformatics**
Session Chair: Dan Tulpan, National Research Council Canada, Canada

**(IIF) Intelligent Information Fusion**
Session Chair: Juan M. Corchado, University of Salamanca, Spain

MyHealth: A Cross-Domain Platform For Healthcare
Maribel Yasmina Santos, Cristiano Pendão, Bruno Ferreira, Luis Gonçalves, Guilherme Moreira, Adriano Moreira, and João Alvaro Carvalho

Inference Of Disease-Specific Gene Interaction Network Using A Bayesian Network Learned By Genetic Algorithm
Daye Jeong, Yunku Yeu, Jaegyoon Ahn, Youngmi Yoon, and Sanghyun Park

Using Graph-Based Models in a Persuasive Social Recommendation System
César L. Blum Silveira, Luiz Gonzaga, Kleinner Farias, Fabio de Javier Palanca, Stella Heras, Javier Jorge, and Vicente Julian

Smell Classification of Wines by the Learning Vector Quantisation Method
Sigeru Omatu, Mitsuaki Yano, and Yoshinori Ikeda

Ontology Definition and Cognitive Analysis in Occupational Health and Security (OHS) Environments
Nayat Sanchez-Pi, Luis Marti, Ana Cristina Bicharra Garcia, and Jose Manuel Molina
**THU 17:10 – 18:50 Room 2.5**

(DADS-2) Dependable and Adaptive Distributed Systems  
**Session Chair**: Karl M. Goeschka, UAS Technikum Vienna, Austria

Modeling Dependable Systems With Continuous Time Bayesian Networks  
Martin Grüßl

Evaluation Of An Adaptive Framework For Resilient Monte Carlo Executions  
Antonio Juan Rubio-Montero, Manuel Aurelio Rodríguez-Pascual, and Rafael Mayo-García

Optimal Planning For Architecture-Based Self-Adaptation Via Model Checking Of Stochastic Games  
Javier Camara, David Garlan, Bradley Schmerl, and Ashutosh Pandey

**THU 17:10 – 18:50 Room 2.3**

(IAR-3) Information Access and Retrieval  
**Session Chair**: Fabrizio Sebastiani, Qatar Computing Research Institute – Qatar Foundation, and National Research Council, Pisa, Italy

Leveraging temporal expressions to filter vital documents related to an entity  
Rafik Abbes, Karen Pinel-Sauvagnat, Nathalie Hernandez, and Mohand Boughanem

On the Impact of Entity Linking in Microblog Real-Time Filtering  
Giacomo Berardi, Diego Ceccarelli, Andrea Esuli, and Diego Marchegiani

Real-time Recommendations for User-Item Streams  
Andreas Lommatzsch

**THU 17:10 – 18:50 Room 2.2**

(SVT-3) Software Verification and Testing  
**Session Chair**: Ylies Falcone, University of Grenoble, France

Programs from Proofs of Predicated Dataflow Analyses  
Marie-Christine Jakobs and Heike Wehrheim

Polyhedra to the rescue of array interpolants  
Francesco Alberti and David Monniaux

Fast as a Shadow, Expressive as a Tree: Hybrid Memory Monitoring for C  
Arvid Jakobsson, Nikolai Kosmatov, and Julien Signoles

Concurrent Streams in Markov Chain Usage Models for Statistical Testing of Complex Systems  
Daniel Homm, Jürgen Eckert, and Reinhard German

**THU 17:10 – 18:50 Room 2.7**

(SP-2) Software Platforms  
**Session Chair**: Jinman Jung, Hannam University, Korea

Fairness-oriented Resource Optimization for WRAN Self-coexistence  
MD Nashid Anjum, Yanxiao Zhao, Yu Luo, and Lina Pu

GI_Sch: A Novel Scheduler for a Heterogeneous Telescope Network  
M.C. Lopez-Casado, C.J. Pérez-del-Pulgar, Juan Cabello, V.F. Muñoz, Oscar Lara Gil, A.J. Castro-Tirado, Jan Strobl, Eduardo Maureira, José Maza, Sergey Karpov, and F.M. Sanchez

Performance Analysis For A Service Delivery Platform In Software Defined Network  
Qiang Duan, Mengxi Zeng, Jun Huang, and Cong-cong Xing

**THU 17:10 – 18:50 Room 2.6**

(MUSEPAT-2) Multicore Software Engineering, Performance, Applications, and Tools  
**Session Chair**: João Lourenço, Universidade Nova de Lisboa, Portugal

Database Engines On Multicores Scale: A Practical Approach  
João Soares and Nuno Preguiça

NGrid: A Proximity Data Structure for Fluids Animation with GPU computing  
Mark Joselli, José Ricardo da Silva Junior, and Esteban Clua

C and OpenCL Generation from MATLAB  
João Biapo, Luís Reis, and João M. P. Cardoso

Compiler-Enhanced Memory Bandwidth Usage Reduction in OpenACC  
Ebad Salehi, Ahmad Lashgar, and Amirali Baniasadi

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**Friday April 17, 2015**

**FRI 09:30 – 11:10 Room 2.4**

(IRMAS-1) Intelligent Robotics and Multi-Agent Systems  
**Session Chair**: Rui Paulo Rocha, University of Coimbra, Portugal

TRiStar: An i* Extension for Teleo-Reactive Systems Requirements Specifications  
José Miguel Morales, Elena Navarro, Pedro Sánchez, and Diego Alonso
Optimization of the Kicking Accuracy in a Soccer Robot
Ricardo Dias, João Silva, José Luís Azevedo, Bernardo Cunha, António J. R. Neves, and Nuno Lau

Distributed Task Servicing using Multiple Robots with Human-in-the-loop under Limited Communication Range
Parikshit Maini and P. B. Sujit

Robust Resource Allocation in Security Games and Ensemble Modeling of Adversary Behavior
Arjun Tambe and Thanh Nguyen

Friday 9:30 – 11:10 Room 2.5
(WT-1) Web Technologies
Session Chair: Davide Rossi, University of Bologna, Italy

Automated Generation of Visual Web Tests from DOM-based Test Games
Maurizio Leotta, Andrea Stocco, Filippo Ricca, and Paolo Tonella

Leveraging Task-Based Data To Support Functional Testing Of Web Applications
Flavio Jesus, Leandro Vasconcelos, and Laercio Baldochi

Web Page Segmentation Evaluation
Andrés Sanoja and Stéphane Gançarski

Generating XML Data for XPath Queries
Dusan Rychnovsky and Irena Holubova

Handling Flash-Crowd Events To Improve The Performance Of Web Applications
Ubiratam de Paula Junior, Lúcia M. A. Drummond, Daniel de Oliveira, Yuri Frota, and Valmir C. Barbosa

Friday 9:30 – 11:10 Room 2.3
(DM-1) Data Mining
Session Chair: Stefan Kramer, Johannes Gutenberg University - Mainz, Germany

Keith Henderson, Brian Gallagher, and Tina Eliassi-Rad

Locality-Preserving Li-Graph and Its Application in Clustering
Shuchu Han, Hao Huang, Hong Qin, and Dantong Yu

Sequence Mining Under Multiple Constraints
Nicolas Bechet, Peggy Cellier, Thierry Charnois, and Bruno Crémielleux

Key Correlation Mining By Simultaneous Monotone And Anti-Monotone Constraints Checking
Squad Bouasker and Sadok Ben Yahia

FOSHU: Efficient Mining of On-Shelf High Utility Itemsets with Both Negative and Positive Unit Profit
Philippe Fournier-Viger and Souleymane Zida

Friday 9:30 – 11:10 Room 1.2
(EMBS-1) Embedded Systems: New Perspectives for Hardware, System Software, and Applications
Session Chair: Matteo Morelli, Scuola Superiore S. Anna, Italy

Persistence-Based Branch Misprediction Bounds for WCET Analysis
Wolfgang Puffstairs

Reliability-Aware Striping With Minimized Performance Overheads For Flash-Based Storage Devices
Ming-Chang Yang, Yu-Ming Chang, Po-Chun Huang, Yuan-Hao Chang, Yue-Jane Lee, and Tei-Wei Kuo

Static energy reduction by performance linked cache capacity management in Tiled CMPS
Hemangee Kapoor, Shirshendu Das, and Shounak Chakraborty

Dynamic Associativity Management Using Utility Based Way-Sharing
Shirshendu Das and Hemangee K. Kapoor

A Time-Composable Operating System For The Patmos Processor
Marco Ziccardi, Martin Schoeberl, and Tulio Vardanega

Friday 9:30 – 11:10 Room 2.7
(SEC-1) Computer Security
Session Chair: Gianpaolo Bella, Università di Catania, Italy

Design, Implementation And Evaluation Of A Novel Anti-Virus Parasitic Malware
Byungho Min and Vijay Varadharajan

Oblivious Outsourcing Of Garbled Circuit Generation
Florian Kerschbaum

Amusa: Middleware For Efficient Access Control Management Of Multi-Tenant Saas Applications
Maarten Decat, Jasper Bogaerts, Bert Lagaisse, and Wouter Joosen

LogSec: Adaptive Protection for the Wild Wild Web
Bastian Braun, Korbinian Pauli, Joachim Posegga, and Joachim Posegga

CryptoPaper: Digital Information Security for Physical Documents
Pengcheng Wang, Xue Yu, Shuai Chen, Padmaja Duggisetty, Shuo Guo, and Tilman Wolf

Friday 11:10 – 11:40
Coffee Break

Hall Auditorium
**FRI 11:40 – 13:20  Room 2.4**

**(IRMAS-2) Intelligent Robotics and Multi-Agent Systems**

**Session Chair:** Rui Paulo Rocha, University of Coimbra, Portugal  

**Force Model of a Robotic Particle Chain for 3D Displays**
Matteo Lasagni and Kay Römer  

**Distributed Target Identification in Robotic Swarms**
Paolo Steguggno, Caterina Massidda, and Heinrich H. Bülthoff  

**On the Similarities Between Control Based and Behavior Based Visual Servoing**
Benjamin Fonooni  

**Visual Similarity Analysis in Loop Closure through Data Dimensionality Reduction via Diffusion Maps**
Leandro Moreira, Claudia Justel, and Paulo Rosa  

**FRI 11:40 – 13:20  Room 2.5**

**(WT-2) Web Technologies**

**Session Chair:** Davide Rossi, University of Bologna, Italy  

**Bing-SF-IDF+: A Hybrid Semantics-Driven News Recommender**
Michel Capelle, Marnix Moerland, Frederik Hogenboom, Flavius Frasincar, and Damir Vandic  

**Efficient Approximate Thompson Sampling For Search Query Recommendation**
Chu-Cheng Hsieh, James Neufeld, Tracy King, and Junghoo Cho  

**Multi-Component Similarity Method For Web Product Duplicate Detection**
Ronald van Bezu, Sjoerd Borst, Rick Rijkse, Jim Verhagen, Damir Vandic, and Flavius Frasincar  

**Locating Domain-Specific Contents And Experts On Social Bookmarking Communities**
Simon Kassing, Jasper Oosterman, Alessandro Bozzon, and Geert-Jan Houben  

**Security Assessment Of Clickjacking Risks In Web Applications’ Metrics Based Approach**
Hossain Shahrirar and Hisham Haddad  

**FRI 11:40 – 13:20  Room 2.3**

**(DM-2) Data Mining**

**Session Chair:** Hasan Jamil, University of Idaho, United States  

**Alternating Model Trees**
Eibe Frank, Michael Mayo, and Stefan Kramer  

**On The Spectrum Between Binary Relevance And Classifier Chains In Multi-Label Classification**
Sophie Burkhardt and Stefan Kramer  

**Approximate Block Coordinate Descent For Large Scale Hierarchical Classification**
Anveshi Chaturveda and Huzeifa Rangwala  

**Multi-View Learning With Dependent Views**
Ulrich Brefeld, TU Darmstadt, Germany  

**Semi-Supervised Clustering Using Multi-Assistant-Prototypes To Represent Each Cluster**
Walter Jose da Silva, Maria Camila Nardini Barioni, Sandra de Amo, and Humberto Luiz Razente  

**FRI 11:40 – 13:20  Room 2.7**

**(SEC-2) Computer Security**

**Session Chair:** Giampaolo Bella, Università di Catania, Italy  

**Tuple-Based Access Control: A Provenance-Based Information Flow Control For Relational Data**
Ronmauld Thion, François Lesue, and Meriam Talbi  

**Secess: Keeping Your Session Tucked Away In Your Browser**
Philippe De Ryck, Lieven Desmet, Frank Piessens, and Wouter Joosen  

**Automated Analysis of RBAC Policies with Temporal Constraints and Static Role Hierarchies**
Silvio Ranise, Anh Truong, and Luca Viganò  

**SmartAuth: Dynamic Context Fingerprinting for Continuous User Authentication**
Davy Preuveneers and Wouter Joosen  

**FRI 11:40 – 13:20  Room 1.2**


**Session Chair:** Wolfgang Puffitsch, Technical University of Denmark, Denmark  

**A Multi-DAG Model for Real-Time Parallel Applications with Conditional Execution**
José Carlos Fonseca, Vincent Nélis, Gurulingesh Naravari, and Luís Miguel Pinho  

**Compilation Of Synchronous Observers As Code Contracts**
Arnaud Dieumegard, Pierre-Loic Garoche, Temesghen Kahsai, Alice Taillier, and Xavier Thirioux  

**TRES: A Modular Representation of Schedulers, Tasks, and Messages to Control Simulations in Simulink**
Fabio Cremona, Matteo Morelli, and Marco Di Natale  

**Automated Generation of Robotics Applications from Simulink and SysML Models**
Matteo Morelli
Cost-Efficient And Attack-Resilient Approaches For State Estimation In Power Grids
Kaiqi Xiong and Peng Ning

**FRIDAY 13:20 – 15:00**

Lunch Break

**CONFERENCE VENUE**

**FRIDAY 15:00 – 16:40**

Room 2.4

(HCI-1) Smart Human Computer Interaction
Session Chair: Soon Ki Jung, Kyungpook National University, Korea

Benchmarking Motion Sensing Devices for Rehabilitative Gaming
Gary Ushaw, Richard Davison, Janet Eyre, and Graham Morgan

Design Framework Enhancing Developer Experience In Collaborative Coding Environment
Jarmo Palviainen, Terhi Kilamo, Johannes Koskinen, Janne Lautamaki, Tommi Mikkonen, and Antti Nieminen

Evaluation of Web Accessibility on the Maps Domain
Jonathas Leontino Medina, Maria Istela Cagnin, and Debora Maria Barroso Paiva

An anonymous ID-based remote mutual authentication with key agreement protocol on ECC using smart cards
A. Goutham Reddy, Gil-Je Lee, and Kee-Young Yoo

Room 2.5

(MMV-1) Multimedia and Visualization
Session Chair: César Teixeira, Federal University of São Carlos, Brazil

Personalized VIDEO Summarization Using SIFT
Kaveh Darabi and Gheorghita Ghinea

Shot-HR: A Video Shot Representation Method Based on Visual Features
Tamires Barbieri, Tiago Trojanho, Moacir Ponti-Jr, and Rudinei Goularte

Automatic Multi-Camera Remix From Single Video
Sujoy Mate, Igor D.D. Curcio, Antti Eronen, and Arto Lehtiniemi

Controlling The Focus And Input Events In Multimedia Applications
Luiz Fernando Soares, Marcio Moreno, and Alan Lívio Vasconcelos

**FRI 15:00 – 16:40**

Room 2.3

(DFM-3) Data Mining
Session Chair: Stefan Kramer, Johannes Gutenberg University - Mainz, Germany

On The Discovery Of Fake Binary Ratings
Murat Okkalioglu, Mehmet Koc, and Huseyin Polat

Accelerating Recommender Systems using GPUs
André Rodrigues, Alípio Jorge, and Inês Dutra

Bias-Aware Lexicon-Based Sentiment Analysis
Mohsin Iqbal, Asim Karim, and Faisal Kamiran

A Joint Model For Topic-Sentiment Modeling From Text
Mohamed Dermouche, Leila Khouas, Julien Velcin, and Sabine Louchcher

Computationally-efficient classification of HEp-2 cell patterns in IIF images
Luís Fernando Planella Gonzalez, Duncan Dubugras Alcoba Ruiz, and Márcio Sarroglia Pinho

**FRI 15:00 – 16:40**

Room 1.2

(CSP) Constraint Solving and Programming
Session Chair: Roberto Amadini, University of Bologna, Italy

SUNNY-CP: a Sequential CP Portfolio Solver
Roberto Amadini, Maurizio Gabbrilli, and Jacopo Mauro

Towards Automatic Poetry Generation Using Constraint Handling Rules
Ali El Bolock and Slim Abdennadher

On The Use And Effect Of Graph Decomposition In Qualitative Spatial And Temporal Reasoning
Michael Sioutis, Yakoub Salhi, and Jean-Francois Condotta

BDD Construction for All Solutions SAT and Efficient Caching Mechanism
Takahisa Toda and Koji Tsuda

**FRI 15:00 – 16:40**

Room 2.7

(TRECK) Trust, Reputation, Evidence and other Collaboration Know-How
Session Chair: Ronald Petrie, Saarland University, Germany

Trust-Based Collection Of Information In Distributed Reputation Networks
Dimitra Gkorou, Johan Pouwelie, and Dick Epema

An Algorithm For Distributed Certificate Chain Discovery In Open Environments
Samane Abdi and John Herbert
A Security Configuration Assessment For Android Devices
Daniel Vecchiato, Marco Vieira, and Eliane Martins

Bi-Directional Trust Index Computation In Resource Marketplace
Avinash Sharma, Tridib Mukherjee, Partha Dutta, and Vinay Hegde

A Reputation System Supporting Unlinkable, Yet Authorized Expert Ratings
Andreas Kokoschka, Ronald Petric, and Christoph Sorge

**FRIDAY, APRIL 13**

**10:00 - 12:00**

**Room 2.4**

**HALL AUDITORIUM**

**POSTERS LISTING**

**WED 10:10 - 13:10**

**Poster Session I**

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**(BIO) Computational Biology and Bioinformatics Track**

P-SaMi: a Data-flow Pattern to Perform Massively-Parallel Molecular Docking Experiments using a Fully-flexible Receptor Model
Patricia Hübner, Duncan Ruiz, João Eduardo Ferreira, and Osmar Norberto de Souza

**(CIVIA) Computational Intelligence and Video & Image Analysis Track**

Compact And Discriminative Approach For Encoding Spatial-Relationship Of Visual Words
Glauco V. Pedrosa and Agma J. M. Traina

OpenACC-based GPU Acceleration of an Optical Flow Algorithm
Nelson Martin, Jorge Collado, Guillermo Botella, Carlos Garcia, and Manuel Prieto-Matias

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

A Domain Specific Language for Spatial Simulation Scenarios(DSL3S): Introduction and Tool Support
Luís de Sousa and Alberto Rodrigues da Silva

Monitoring And Visualizing Adaptation Of Autonomic Systems At Runtime
Dhaminda B. Abeywickrama, Nikola Serbedzija, and Michele Loreti

**(COSYS) Cooperative Systems Track**

Rescheduling and Checkpointing as Strategies to Run Synchronous Parallel Programs on P2P Desktop Grids
Rodrigo Righi, Vinicius Facco, Gustavo Rostirolla, Cristiano Costa, Kleimner Farias, Antonio Alberti, and Alexandre Veith

Efficient Approach For Reusing And Sharing Train Driving Plans Using Case-Based Reasoning
André Borges, Osmar Dordal, Denise Satô, Fabricio Enzenbreck, Bráulio Ávila, and Edson Scalabrin

Mobile Collaboration : A Collaborative Editing Service In The Cloud
Guetmi Nadir, Mechaoui Moulay Driss, Imine Abdessamad, and Bellatreche Ladjel

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

Crucial Components In Probabilistic Inference Pipelines
Dimitar Shfterionov and Gerda Janssens
### Poster Session II

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<td><strong>Meta-Programming With Well-Typed Code Analysis</strong></td>
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<td><strong>Deriving The Behavior Of Context-Sensitive Systems From Contextual Goal Models</strong></td>
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A Parallel Genetic Algorithms Framework Based on Hadoop MapReduce
Filomena Ferrucci, Tahar Kechadi, Pasquale Salza, and Federica Sarro

(SOAP) Service-Oriented Architecture and Programming Track
A Service-Oriented Architecture for Billing Resources in IaaS Cloud Platforms
Nayane Ponte, Fernando Trinta, Ricardo Viana, Rossana Andrade, Vinicius Garcia, and Rodrigo Assad

(SONAMA) Social Network and Media Analysis Track
Multi-Stage Seed Selection For Viral Marketing
Anastasia Mochalova and Alexandros Nanopoulos

Web Accessibility In Social Networking Services: Blind Users Perspective
Janaína Rolan Loureiro, Maria Istela Cagnin, and Debora Maria Barroso Paiva

(SP) Software Platforms Track
Application-Level Task Execution Issues In Mobile Cloud Computing
Abida Shahzad, Hyunho Ji, and Jiman Hong

The Implications of Disk-based RAID and Virtualization for Write-intensive Services
Pekka Pääkkönen and Daniel Pakkala

(SWA) The Semantic Web and Applications Track
A Supervised Machine Learning Approach For Taxonomic Relation Recognition Through Non-Linear Enumerative Structures
Jean-Philippe Fauconnier, Mouna Kamel, and Bernard Rothenburger

(TRECK) Trust, Reputation, Evidence and other Collaboration Know-how Track
A Modeling Approach For Credit Card Fraud Detection In Electronic Payment Services
Gabriel Preti, Adriano Pereira, and Roberto Hirata

(WCN) Wireless Communications and Networking Track
Interference Aware Channel Assignment For Structured Wireless Sensor Networks
Edgard Jamhour, Marcelo Pellenz, Manoel Penna, Richard Souza, and Glauber Brante

(WT) Web Technologies Track
Tai-Lun Tseng, Shih-Hao Hung, and Chia-Heng Yu

Serena: Scalable Middleware For Real-Time Web Applications
Kennedy Kambona, Elisa Gonzalez Boix, and Wolfgang De Meuter

Catalogue: Graph Representation Of File Relations For A Globally Distributed Environment
Yamato Miyashita, Hiroyo Ishikawa, Fumio Teraoka, and Kunitake Kaneko

RE-CMS: A Reverse Engineering Toolkit for the Migration to CMS-based Web Applications
Feliu Trias, Valeria de Castro, Marcos Lopez-Sanz, and Esperanza Marcos

Student Research Competition Program

Student Research Abstract: An Architecture Of Recommender System For Scientific Paper
Computational Intelligence and Video & Image Analysis (CIVIA) Track
Arthur Max Cavalcante Rocha

Student Research Abstract: Improve General Contextual SLIM Recommendation Algorithms By Factorizing Contexts
Data Mining (DM) Track
Yong Zheng

Student Research Abstract: A Fast Support Vector Data Description System For Anomaly Detection Using Big Data
Data Mining (DM) Track
Rekha A G

Student Research Abstract: Color Image Quantization Using Interactive Genetic Algorithm
Applications of Evolutionary Computing (EC) Track
Seunghyun Jo

Student Research Abstract: A Framework For Enterprise Agility
Enterprise Engineering (EE) Track
Joshua Chibuike Nwokeji

Embedded Systems (EMBS) Track
Muhammad Farhan

Student Research Abstract: A Methodology To Enrich Student-Teacher Interaction In Elearning
Smart Human Computer Interaction (HCI) Track
Jörg Schlüterer
**Student Research Abstract: Multi-Document Text Summarization For Competitor Intelligence: A Methodology Based On Topic Identification And Artificial Bee Colony Optimization**
Information Access and Retrieval (IAR) Track
Swapnajit Chakraborti

**Student Research Abstract: Experience In Item Based Recommender System**
Information Access and Retrieval (IAR) Track
Ankit Chaudhary

**Student Research Abstract: Smart Learning Environments For Social Learning**
Intelligent and Interactive Learning Environments (IILE) Track
Enrica Pesare

**Student Research Abstract: A New Layer of Security to Credit Card Payments with Mobile Device GPS**
Mobile Computing and Applications (MCA) Track
Jussi Laakkonen

**Student Research Abstract: Reconstruction Of Runtime Software Architecture For Object-Oriented Systems**
Software Engineering (SE) Track
Hwi Ahn

**Student Research Abstract: Formalising the SECD Machine with Nominal Isabelle**
Software Verification and Testing (SVT) Track
Gergely Buday

**Student Research Abstract: Multi-Criteria Based Vertical Handover Decision In Heterogeneous Wireless Network**
Wireless Communications and Networking (WCN) Track
Murad Khan
Venue

Conference Venue
Universidad de Salamanca
Fonseca 2, 37007,
Salamanca, Spain
(http://goo.gl/jaFja0)

April 14, 2015
Tuesday at 8:30pm
The Historical Building
of the University of Salamanca
Patio de Escuelas s/n, 37008,
Salamanca, Spain
(http://goo.gl/maps/KJTR4)

Banquet

April 16, 2015
Thursday at 9:30pm
Alameda Palace
Paseo de la Estación, 1, 37004
Salamanca, Spain

Welcome Reception

April 14, 2015
Tuesday at 8:30pm
The Historical Building
of the University of Salamanca
Patio de Escuelas s/n, 37008,
Salamanca, Spain
(http://goo.gl/maps/KJTR4)

SAC 2016 INVITATION

SAC 2016 will be held in Pisa, Tuscany, Italy, a historical town whose “leaning tower” is one of the famous attractions in Europe in March, 2016. It is hosted by University of Pisa. Please check the registration desk for handouts and a poster or visit SAC 2016 website at http://www.acm.org/conferences/sac/sac2016/