

APPLIED COMPUTING 2013

The 28th Annual ACM Symposium on Applied Computing

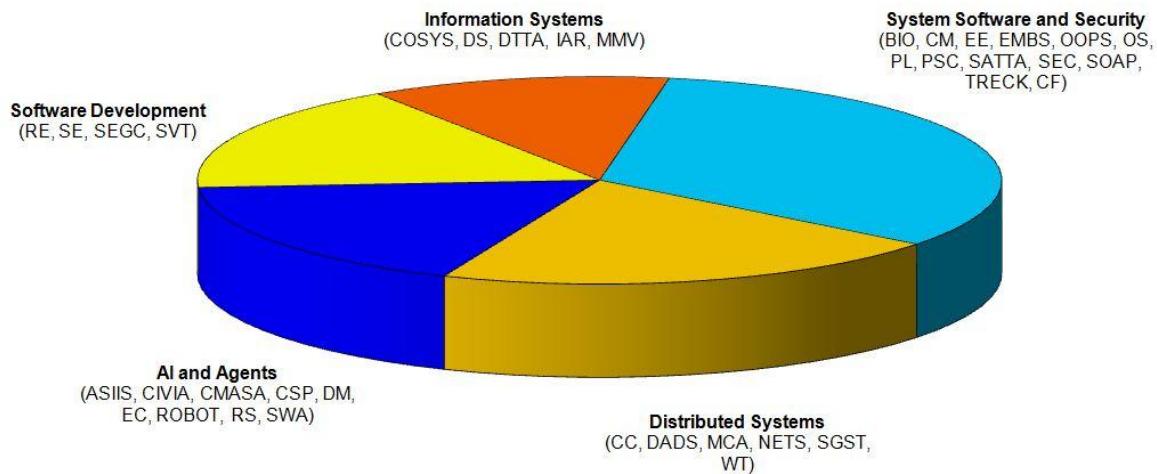
PROCEEDINGS OF THE 2013 ACM
SYMPOSIUM ON APPLIED COMPUTING

Coimbra, Portugal
March 18-22, 2013

Organizing Committee

Nuno M.F. Ferreira
Hisham M. Haddad
Jiman Hong
Chih-Cheng Hung
José Carlos Maldonado

Mathew J. Palakal
Rui P. Rocha
Dongwan Shin
Sung Y. Shin
Denis Wolf



Hosted by
Institute of Engineering of the Polytechnic Institute of Coimbra
(ISEC-IPC)

***** SAC 2013 at Glance *****

Monday 3/18/2013	Tuesday 3/19/2013	Wednesday 3/20/2013	Thursday 3/21/2013	Friday 3/22/2013
<p align="center">AM Tutorials (9:00am – 12:30pm)</p> <p align="center">Coffee Break (10:30 – 11:00am)</p>	<p align="center">Keynote Session (9:00 – 10:40am)</p> <p align="center">Coffee Break (10:40 – 11:10am)</p> <p align="center">AM Breakout Sessions (11:10 – 12:50pm)</p>	<p align="center">AM Breakout Sessions (9:00 – 10:40am)</p> <p align="center">Coffee Break (10:40 – 11:10am)</p> <p align="center">AM Breakout Sessions (11:10 – 12:50pm)</p>	<p align="center">Keynote Session (9:00 – 10:40am)</p> <p align="center">Coffee Break (10:40 – 11:10am)</p> <p align="center">AM Breakout Sessions (11:10 – 12:50pm)</p> <p align="center">AM Posters Session (9:40am – 12:40pm)</p>	<p align="center">AM Breakout Sessions (9:00 – 10:40am)</p> <p align="center">Coffee Break (10:40 – 11:10am)</p> <p align="center">AM Breakout Sessions (11:10 – 12:50pm)</p>
<p align="center">Tutorials Social Luncheon for <u>Lunch Ticket Holders</u> (12:30 – 2:30pm) Conference venue</p>	<p align="center">SAC Luncheon For all Registered Attendees (12:50 – 2:10pm) Conference venue</p>	<p align="center">SAC Luncheon For all Registered Attendees (12:50 – 2:10pm) Conference venue</p>	<p align="center">SAC Luncheon For all Registered Attendees (12:50 – 2:10pm) Conference venue</p>	<p align="center">SAC Luncheon For all Registered Attendees (12:50 – 2:10pm) Conference venue</p>
<p align="center">PM Tutorials (2:30 – 6:00pm)</p> <p align="center">Coffee Break (4:00 – 4:30pm)</p>	<p align="center">PM Breakout Sessions (2:10 – 6:00pm)</p> <p align="center">Coffee Break (3:50 – 4:20pm)</p> <p align="center">SRC Posters Session (2:40 – 5:40pm)</p>	<p align="center">PM Breakout Sessions (2:10 – 6:00pm)</p> <p align="center">Coffee Break (3:50 – 4:20pm)</p> <p align="center">SRC Oral Presentations (2:30 – 4:00pm)</p>	<p align="center">PM Breakout Sessions (2:10 – 6:00pm)</p> <p align="center">Coffee Break (3:50 – 4:20pm)</p> <p align="center">PM Posters Session (2:40 – 5:40pm)</p>	<p align="center">Conference Ends at 2:30pm</p> <p align="center">Thank you for your participation and hope to see you next year in Gyeongju, Korea</p>
	<p align="center">SIGAPP Annual Business Meeting (6:00 – 7:00pm)</p> <p align="center">SAC Reception (8:30 – 10:30pm) At Hotel Tryp Coimbra</p>	<p align="center">Future SAC Organization Meeting (6:00 – 7:00pm)</p>	<p align="center">Track Chairs Business Meeting (6:00 – 7:0pm)</p> <p align="center">SAC Banquet Departure from designated hotels starts at 7:45pm</p>	

******* Technical Program Session Schedule *******

Tuesday March 19, 2013				
Room	9:00 - 10:40am	11:10 – 12:50pm	2:10 - 3:50pm	4:20 - 6:00pm
G0-A1	Keynote Address	EC-1 (5)	EC-2 (1)+ROBOT (3)	CMASA (4)
G0-A2		CC-1 (5)	CC-2 (4)	SGST (5)
G1-99		DS (4)	MMV-1 (4)	MMV-2 (3)
G1-100		SE-1 (5)	SE-2 (5)	SE-3 (4)
G1-117		SEC-1 (5)	SEC-2 (5)	SEC-3 (3 + 1 Forensics)

Wednesday March 20, 2013				
Room	9:00 - 10:40am	11:10 – 12:50pm	2:10 - 3:50pm	4:20 - 6:00pm
G0-A1	DM-1 (4)	DM-2 (4)	CIVIA-1 (4)	CIVIA-2 (2) + ASIIS (2)
G0-A2	NETS-1 (5)	NETS-2 (5)	DADS-1 (5)	DADS-2 (5)
G1-99	IAR-1 (5)	IAR-2 (5)	DTTA-1 (5)	DTTA-2 (2) + COSYS (3)
G1-100	SEGC (4)	SE-4 (4)	SE-5 (4)	PSC (3)
G1-117	EE-1 (5)	EE-2 (5)	EE-3 (2) + BIO (3)	OOPS (4)

Thursday March 21, 2013				
Room	9:00 - 10:40am	11:10 – 12:50pm	2:10 - 3:50pm	4:20 - 6:00pm
G0-A1	Keynote Address	SWA-1 (4)	SWA-2 (4)	RS (5)
G0-A2		WT-1 (5)	WT-2 (4)	CSP (3)
G1-99		SATTA-1 (4)	SATTA-2 (3)	TRECK (3) + Demo
G1-100		SVT-1 (4)	SVT-2 (4)	PL (5)
G1-117		CM (5)	OS-1 (5)	OS-2 (5)

Friday March 22, 2013				
Room	9:00 - 10:40am	11:10 – 12:50pm		
G0-A1	SOAP-1(4)	SOAP-2 (4)	Room G0-A1: AI & Agents Room G0-A2: Distributed Systems Room G1-99: Information Systems Room G1-100: Software Development Room G1-117: System Soft. and Security Notes: Please note that the number inside the parentheses is the number of papers.	
G0-A2	MCA-1 (5)	MCA-2 (5)		
G1-99	RE-1 (5)	RE-2 (4)		
G1-100	EMBS-1 (5)	EMBS-2 (5)		

SAC 2013

Introduction

SAC 2013 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 2013 features two keynote speakers on Tuesday and Thursday, from 9:00 to 10:40. The technical program of the symposium consists of 37 tracks on different research topics, which run from Monday March 18 through Friday March 22, 2013. Regular oral presentation sessions start at 9:00 and end at 18:00 in five parallel sessions. Two poster tracks also run on Thursday March 21, from 9:40 to 12:40 and from 15:50 to 17:40. In addition, the Student Research Competition (SRC) program, sponsored by Microsoft Research, is a newly added to SAC. SRC posters display session runs on Tuesday from 14:40 to 17:40 and SRC Presentations session runs on Wednesday from 14:30 to 15:40.

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 2013 is provided by Polytechnic Institute of Coimbra (IPC). Additional support was provided by the Institute of Systems and Robotics, Faculty of Sciences and Technology of Univ. of Coimbra (ISR-FCTUC) and Caixa Geral de Depositos. 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.



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Symposium Chairs Message

Sung Y. Shin

South Dakota State University, USA

José Carlos Maldonado

ICMC – University of São Paulo, Brazil

On behalf of the Organizing Committee, we welcome you to the 28th Annual ACM Symposium on Applied Computing (SAC 2013) hosted by Polytechnic Institute of Coimbra. This international forum has been dedicated to computer scientists, engineers and practitioners for the purpose of presenting their findings and research outputs in various areas of computer applications. The organizing committee is grateful for your participation in this exiting

international event. We hope that this conference proves interesting and beneficial for 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 application areas, and applied research. This conference is dedicated to the study of applied research of real-world problems. This event provides an opportunity to discuss and exchange new ideas in the wide spectrum of application areas. We all recognize the importance of keeping up with the latest developments in our current areas of expertise.

SAC 2013 offers Tutorials, Technical Tracks, Posters, and Student Research Abstracts. The success of the conference can be attributed to the substantial contribution of talented Track Chairs and Co-Chairs. Each track maintains a program committee and a group 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 SAC 2013 a high quality conference. We also thank our invited keynote speakers, Dr. Malu Castellanos, Hewlett-Packard Labs, USA and Professor J. A. Tenreiro Machado, Institute of Engineering of Polytechnic of Porto, Portugal for sharing their knowledge and research work with SAC attendees. Most of all, special thanks to the authors and presenters for sharing their experience, and to all attendees for joining us in Coimbra, Portugal this year.

The local organizing committee has always been a key contributor to the success of the SAC. Our gratitude goes to the Conference Vice-Chair Dr. Rui P. Rocha of ISR – University of Coimbra and the Local Arrangement Chair Dr. Nuno M.F. Ferreira of the Polytechnic Institute of Coimbra. We also extend our thanks to the Publication Chair, Dr. Dogwan Shin, New Mexico Tech for his tremendous effort in putting together the conference proceedings, Posters Chair Dr. Mathew J. Palakal, Indiana University Purdue University for his hard work on the Posters Program. Special thanks go to our Program Chairs, Dr. Chih-Cheng Hung Southern Polytechnic State University Marietta, Georgia and Dr. Jiman Hong, Soongsil University, Korea for coordinating and bringing together an excellent Technical Program.

Again, we welcome you to SAC 2013 and the historical city of Coimbra, Portugal. We hope you enjoy the conference and your stay in Coimbra. Next year, we invite you to participate in SAC 2014 to be held in Gyeongju, Korea. The conference will be hosted by Seoul National University, Soongsil University, Gyeongbuk National University, and Dongguk University.

Program Chairs Message

Chih-Cheng Hung

Southern Polytechnic State University, Marietta, USA

Jiman Hong

Soongsil University, Seoul, Korea

Welcome to the 28th International Symposium on Applied Computing (SAC 2013). For the past 27 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.

The open Call for Track Proposals and after prescreening the proposals, 36 Tracks were finally accepted for SAC 2013. The prescreening and selections were made based on the success of those Tracks in the previous SACs as well as targeting new and emerging areas. The Call for Papers for these Tracks attracted 1063 final paper submissions from 58 different countries. The submitted papers underwent the blind review process and 255 papers were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2013 is 24% for the overall track. In addition to the accepted full papers, 73 papers 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, is a new addition to SAC 2013. The SRC program is designed to provide graduate students the opportunity to meet and exchange ideas with researchers and practitioners in their areas of interest. 38 submissions received and finally 5 papers were accepted for the SRC program.

The Technical Program of SAC 2013 is made possible through the hard work of many people from the scientific community who have volunteered and committed many hours to make it a success. Much credit goes to all Track Chairs for making SAC 2013 Technical Sessions a huge success. Some of the popular Tracks had an unprecedented submissions and having three blind reviews for each paper was certainly

a major challenge. Once again this year, we follow the previous years' tradition in organizing various tracks into five different themes. The proceedings and the technical presentations are focused around these themes to form a series of related track sessions.

On behalf of the entire SAC 2013 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, 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. Rui P. Rocha from University of Coimbra, Portugal and Dr. Nuno M.F. Ferreira from Polytechnic Institute of Coimbra, Portugal.

We wish you all a pleasant stay in Coimbra, hope you have a great time at SAC 2013, 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 29th International Symposium on Applied Computing (SAC 2014) will be held in the historic city of Gyeongju, Korea, known as the Museum without Walls. We hope to see you all at SAC 2014.

SAC 2013 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 2013 are listed below:

(AIA) AI and Agents: Tracks: ASIIS, CIVIA, CMASA, CSP, DM, EC, ROBOT, RS, SWA

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

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

(SD) Software Development: Tracks: SE, SEGC, SVT, RE

(SSS) System Software and Security: Tracks: BIO, CM, EE, EMBS, OOPS, OS, PL, PSC, SATTA, SEC, SOAP, TRECK

Keynote Speakers

Tuesday March 19, 2013 9:00 - 10:40AM

Dr. Malu Castellanos, Senior researcher
Hewlett-Packard Labs, 1501 Page Mill Road
Palo Alto, CA 94304, USA

Taming Big Data with Live Analytics

Abstract

During the last decade we have witnessed a huge growth in data, up to 2.5 quintillion bytes of data created every day so far. This data comes from a variety of sources such as postings in social media sites, digital pictures and videos, traffic information from loop sensors, GPS signals from cell phones, stock exchange prices, purchase transaction records, to name a few. Big data never sleeps, it is a continually growing stream of digital activity pulsating through wires and air across the world. But big data is more than just a matter of volume, it is an opportunity to gain actionable insights from new and emerging types of data and content, left untapped by traditional business intelligence, to help companies make better business decisions and become more agile, effective and competitive. In this talk I will present some scenarios to motivate the need for a new kind of analytics platform, Live Analytics, capable of dealing with the new challenges that big data impose along the dimensions of volume, velocity and variety to deliver insights and predictive analytics within actionable time windows (i.e., "at the speed of business"). Examples of such scenarios include situational awareness, sentiment analysis, traffic impact prediction and activity monitoring in healthcare. Solutions built on top of Live Analytics need to integrate information of diverse data types from an increasing number of sources, handle explosive growth in data volumes, deal with rapidly updated content, and deliver shorter cycle times to quality decisions as well as a higher degree of automation. I will describe our perspective of the challenges that we have faced in building such solutions and the technologies built into the Live Analytics platform to support these novel requirements.

Speaker's Bio

Professor Malu Castellanos is a senior researcher and technical lead in the Information Analytics Laboratory at Hewlett-Packard Laboratories in Palo Alto, CA, USA. Since 1997 she has been applying information management and analytics technologies to develop intelligent solutions for different kinds of business related problems and novel techniques for different aspects of business intelligence. She received a B.S. in

Computer Engineering at the National University of Mexico and a Ph.D. in Computer Science from the Polytechnic University of Catalunya. Prior to joining Hewlett-Packard she was on the faculty at the Information Systems Department of the Polytechnic University of Catalunya. She has 12 granted patents, 17 pending and more than 60 publications in international conferences, journals and book chapters. She has actively participated in numerous Program Committees (including VLDB, SIGMOD and ICDE), journal review boards and advisory boards and has held different leadership roles in the organization of several IEEE and ACM international conferences such as being General Chair of IEEE ICDE 2008 and PC Chair of EDBT 2012 Industry and Applications Track. She initiated and has been organizing the workshop series Enabling Real-Time Business Intelligence (BIRTE) in conjunction with VLDB since 2006 and Business Process Intelligence (BPI) in conjunction with BPM (from 2005 until 2010). She currently serves as a member of the Executive Committee of IEEE Technical Committee of Data Engineering. Her interests are information management technologies in general, and in particular, real-time business intelligence, text analytics, and data management platforms.

Thursday March 21, 2013 9:00 - 10:40AM

Professor J. A. Tenreiro Machado
Institute of Engineering of Polytechnic of Porto
Dept. of Electrical Engineering,
Rua Dr. Antonio Bernardino de Almeida, 431
4200-072 Porto, Portugal

***Fractional calculus: Fundamentals,
computational implementation and applications***

Abstract

Fractional Calculus (FC) started in 1695 when L'Hôpital wrote a letter to Leibniz asking for the meaning of $D^n y$ for $n = 1/2$. Starting with the ideas of Leibniz many important mathematicians developed the theoretical concepts. Olivier Heaviside applied FC in the electrical engineering, but, the visionary and important contributions were forgotten. Only during the eighties FC emerged associated with phenomena such as fractal and chaos and, consequently, in the modeling of dynamical systems. This lecture introduces the FC fundamental mathematical concepts, and reviews the main computational approaches for implementing fractional operators. In the last years Fractional Calculus (FC) become a 'new' tool for the modeling and control of dynamical systems. Based on the FC mathematical concepts, this lecture presents several applications in the areas of modeling and

control, namely fractional PID, fractional electromagnetism, and DNA decoding.

Speaker's Bio

Professor J. A. Tenreiro Machado was born in 1957. He graduated with the Engineering (1980), Ph.D. (1989) and Habilitation (1995) degrees in Electrical and Computer Engineering at the University of Porto, Portugal. During 1980-1998 he worked as a Professor at the Department of Electrical and Computer Engineering of the University of Porto. Since 1998 he has been a Coordinator Professor at the Institute of Engineering of the Polytechnic Institute of Porto, Portugal, Department of Electrical Engineering. His primary research areas include robotics, nonlinear dynamics, modeling, control, fractional-order systems, and evolutionary computing. He is co-author of more than 30 articles published in scientific journals. He has had an intense editorial activity, publishing 7 books, editing 15 special issues, mainly in nonlinear dynamics and fractional calculus, serving the editorial board of renowned scientific journals.

Other Activities

SIGAPP Annual Business Meeting: Tuesday March 19, from 18:00 to 19:00 in room G0-A2. Open to everyone.

SIGAPP Reception: Tuesday March 19, from 20:30 to 22:30 in Hotel Tryp Coimbra. Open for everyone.

Future SAC Organization Meeting: Wednesday March 20, from 18:00 to 19:00 in room G0-A2. Open for everyone.

Track Chairs Business Meeting: Thursday March 21, from 18:00 to 19:00 in room G0-A2. Open for the organizing committee and Track Chairs.

SAC Banquet: Thursday March 21. Departure at 19:45 from designated hotels. Open for Banquet Ticket holders. Must have ticket to board the bus.

SAC Best Papers Award: Thursday March 21. 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 2:40pm in the Polivalente area and Oral Presentations on Wednesday at 2:30pm in room G2-126. Certificates and awards will be given to the winner during the Banquet.

Tuesday March 19, 2013

Tue 9:00 – 10:40 Auditório
Keynote Address
Dr. Malu Castellanos
See page 4 for details.

10:40 – 11:10 POLIVALENTE
Coffee Break

TUE 11:10 – 12:50 G0-A1
(EC) Evolutionary Computation
Session Chair: Federico Divina, Pablo de Olavide University, Spain

Evolutionary Optimization of Wetlands Design
Marco Gaudesi, Andrea Marion, Tommaso Musner,
Giovanni Squillero, and Alberto Tonda

Disguised Malware Script Detection System using Hybrid Genetic Algorithm
Jinhyun Kim and Byung-Ro Moon

Automatic Generation of Evolutionary Operators: A Study with Mutation Strategies for the Differential Evolution
Vinicius V. de Melo and Grazieli L.C. Carosio

Using Polynomial Reductions to Test the Suitability of Metaheuristics for Solving NP-Complete Problems
Pablo Rabanal and Ismael Rodríguez

A Hybrid Compact Genetic Algorithm Applied to the Multi-Level Capacitated Lot Sizing Problem
Claudio F.M. Toledo, Marcio da Silva Arantes, Renato R.R. Oliveira,
and Alexandre C.B. Delbem

TUE 11:10 – 12:50 G0-A2
(CC-1) Cloud Computing
Session Chair: Rajiv Ramnath, Ohio State University, USA

Modeling I/O Interference for Data Intensive Distributed Applications
Sven Groot, Kazuo Goda, Daisaku Yokoyama, Miyuki Nakano, and Masaru Kitsuregawa

Input Data Organization for Batch Processing in Time Window based Computations
Leonardo Aniello, Leonardo Querzoni, and Roberto Baldoni

GCplace: Geo-Cloud based Correlation aware Data Replica Placement
Zhen Ye, Shanping Li, and Xiaozhen Zhou

High-Resolution Spatial Interpolation on Cloud Platforms

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
Maciej Zaremba, Sami Bhiri, Tomas Vitvar, and Manfred Hauswirth

TUE 11:10 – 12:50 G1-99
(DS) Data Streams
Session Chair: Pedro Pereira Rodrigues, University of Porto, Portugal

Continuous Query Processing with Concurrency Control: Reading Updatable Resources Consistently
Masafumi Oyamada, Hideyuki Kawashima, and Hiroyuki Kitagawa

Novelty Detection Algorithm for Data Streams Multi-Class Problems
Elaine R. Faria, João Gama, and André C.P.L.F. Carvalho

Efficient Data Stream Classification via Probabilistic Adaptive Windows
Albert Bifet, Jesse Read, Bernhard Pfahringer, and Geoff Holmes

STONE: A Stream-Based DDoS Defense Framework
Mar Callau-Zori, Vincenzo Gulisano, Zhang Fu, Ricardo Jiménez-Peris, Marina Papatriantafidou, and Marta Patiño-Martínez

TUE 11:10 – 12:50 G1-100
(SE-1) Software Engineering
Session Chair: W. Eric Wong, UT-Dallas, USA

WAVE-CIA: A Novel CIA Approach based on Call Graph Mining
Bixin Li, Qiandong Zhang, Xiaobing Sun, and Hareton Leung

Representing Dynamic Pluggable Software Units
Fernando Barros

A Novel Watermarking Method for Java Programs
Mohammad Alitavoli, Mahdi Joafshani, and Aida Erfanian

An Empirical Study on Developer Interactions in StackOverflow
Shaowei Wang, David Lo, and Lingxiao Jiang

A Study of COTS Integration Projects: Product Characteristics, Organization, and Life Cycle Models
Katerina Megas, William B. Frakes, Julián Urbano, abriella Belli, and Reghu Anguswamy

TUE 11:10 – 12:50 G1-117

(SEC-1) Computer Security

Session Chair: Graham Steel, INRIA Paris-Rocquencourt, France

Exploiting Visual Appearance to Cluster and Detect Rogue Software

Christian J. Dietrich, Christian Rossow, and Norbert Pohlmann

Lightweight Energy Consumption based Intrusion Detection System for Wireless Sensor Networks

Michael Riecker, Sebastian Biedermann, and Matthias Hollick

EARs in the Wild: Large-Scale Analysis of Execution after Redirect Vulnerabilities

Pierre Payet, Adam Doupe, Christopher Kruegel, and Giovanni Vigna

Secure Roaming and Infrastructure Sharing for Multi-Operator WMNs

André Egners and Ulrike Meyer

Mobile-Sandbox: Having a Deeper Look into Android Applications

Michael Spreitzenbarth, Felix Freiling, Florian Echtler, Thomas Schreck, and Johannes Hoffmann

12:50 – 2:10 POLIVALENTE

Lunch Break

TUE 2:40 – 5:40 POLIVALENTE

SRC Posters Exhibition

See page 22 for details.

TUE 2:10 – 3:50 G0-A1

(ROBOT) Intelligent Robotic systems

Session Chair: Fernando S. Osorio, University of Sao Paulo, Brazil

Leader-Follower Formation Control of Multiple Nonholonomic Robots based on Backstepping

Zhaoxia Peng, Guoguang Wen, and Ahmed Rahmani

A Kalman Filter based Approach to Probabilistic Gas Distribution Mapping

Jose Luis Blanco, Javier G. Monroy, Javier Gonzalez-Jimenez, and Achim Lilienthal

An Investigation into the Development of Service-Oriented Robotic Systems

Lucas Bueno R. Oliveira, Fernando S. Osório, and Elisa Yumi Nakagawa

TUE 2:10 – 3:50 G0-A2

(CC-2) Cloud Computing

Session Chair: Rajiv Ramnath, Ohio State University, USA

log2cloud: Log-Based Prediction of Cost-Performance Trade-Offs for Cloud Deployments

Diego Perez-Palacin, Radu Calinescu, and José Merseguer

A Progress and Profile-Driven Cloud-VM for Resource-Efficiency and Fairness in e-Science Environments

José Simão and Luís Veiga

Building an On-Demand Virtual Computing Market in Non-Commercial Communities

Matthias Steinbauer

Hospitality of Cloud Platforms

Ashish Agrawal and Prabhakar T.V.

TUE 2:10 – 3:50 G1-99

(MMV-1) Multimedia and Visualization

Session Chair: Takayuki Itoh, Ochanomizu University, Japan

Hierarchical Visual Filtering, Pragmatic and Epistemic Actions for Database Visualization

Jose F. Rodrigues Jr., Carlos E. Cirilo, Antonio F. Prado, and Luciana A.M. Zaina

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

Juliano Franz, Anderson Maciel, and Luciana Nedel

Video Shot Representation based on Histograms

Tamires Tessarolli de Souza and Rudinei Goularte

Interactive Coffee Table for Exploration of Personal Photos and Videos

Diogo Pedrosa, Rodrigo Laiola Guimarães, Maria da Graça Pimentel, Dick C.A. Bulterman, and Pablo Cesar,

TUE 2:10 – 3:50 G1-100

(SE-2) Software Engineering

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

Test-based SPL Extraction: An Exploratory Study

Alcemir Santos, Felipe Gaia, Eduardo Figueiredo, Pedro Santos Neto, and João Araújo

A Model to Detect Problems on Scrum-Based Software Development Projects

Mirko Perkusich, Hyggo Oliveira de Almeida, and Angelo Perkusich

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

Dennis Westermann, Jens Happe, and Roozbeh Farahbod

Failure-Detection Capability Analysis of Implementing Parallelism in Adaptive Random Testing Algorithms

Rubing Huang, Xiaodong Xie, Jinfu Chen, and Yansheng Lu

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

Afef Jmal Maâlej, Moez Krichen, and Mohamed Jmaïel

TUE 2:10 – 3:50

G1-117

(SEC-2) Computer Security

Session Chair: Graham Steel, INRIA Paris-Rocquencourt,
France

**Malicious Takeover of Voting Systems: Arbitrary Code
Execution on Optical Scan Voting Terminals**

Russell J. Jancewicz, Aggelos Kiayias, Laurent D. Michel, Alexander
C. Russell, and Alexander A. Shvartsman

**Verifying Multicast-Based Security Protocols using the
Inductive Method**

Jean E. Martina and Lawrence C. Paulson

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

André Ricardo A. Grégio, Vitor Monte Afonso, Victor
Furuse Martins, Dario Simões Fernandes, Paulo Lício de Geus, and
Mario Jino

An Updated Threat Model for Security Ceremonies

Marcelo Carlomagno Carlos, Jean Everson Martina, Geraint Price,
and Ricardo Felipe Custódio

Slicing Droids: Program Slicing for Smali Code

Johannes Hoffmann, Martin Ussath, Thorsten Holz, and
Michael Spreitzenbarth

3:50 – 4:20

POLIVALENTE

Coffee Break

TUE 4:20 – 6:00

G0-A1

**(CMASA) Cooperative Multi-Agent
Systems and Applications**

Session Chair: Rui P. Rocha, ISR - University of Coimbra,
Portugal

An Intelligent Building that Listens to Your Needs

Der-Yeuan Yu, Ettore Ferranti, and Hadeli Hadeli

**A Collective Robotic Architecture in Search and Rescue
Scenarios**

Micael S. Couceiro, David Portugal, and Rui P. Rocha

**Performance based Task Assignment in Multi-Robot
Patrolling**

Charles Pippin, Henrik Christensen, and Lora Weiss

**Towards Solving an Obstacle Problem by the
Cooperation of UAVs and UGVs**

Shigeo Nakamura, Hiroyuki Nakagawa, Yasuyuki Tahara, and
Akihiko Ohsuga

TUE 4:20 – 6:00

G0-A2

**(SGST) Smart Grids and Smart
technologies**

Session Chair: Dongwan Shin, New Mexico Tech, USA

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

Tassos Dimitriou and Ghassan Karame

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

Jonas Wäfler and Poul E. Heegaard

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

Ognjen Vuković and György Dán

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

Dejan Ilić, Stamatios Karnouskos, Per Goncalves Da Silva, and
Malte Jacobi

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

Nihan Çiçek and Hakan Deliç

TUE 4:20 – 6:00

G1-99

(MMV-2) Multimedia and Visualization

Session Chair: Rudinei Goularte, Universidade de São Paulo-
USP, Brazil

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

Rafael Brandão, Paulo França, Adriano Medeiros, Felipe Portella,
and Renato Cerqueira

**Adaptive Video-Aware FEC-Based Mechanism with
Unequal Error Protection Scheme**

Roger Immich, Eduardo Cerqueira, and Marilia Curado

**CrowdVis: A Framework for Real Time Crowd
Visualization**

Henry Braun, Vinicius Jurinic Cassol, Rafael Hocevar, Fernando
Pinho Marson, and Soraia Raupp Musse

TUE 4:20 – 6:00

G1-100

(SE-3) Software Engineering

Session Chair: John Kim, Utica College, USA

**Automatic Recognition of Design Motifs using
Semantic Conditions**

Awny Alnusair, Tian Zhao, and Gongjun Yan

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

Humberto Marques-Neto, Gladston J. Aparecido, and Marco
Tulio Valente

Multi-Objective Test Case Prioritization for GUI Applications

Wei Sun, Zebao Gao, Weiran Yang, Chunrong Fang, and Zhenyu Chen

A Systematic Review on Mining Techniques for Crosscutting Concerns

Rafael S. Durelli, Daniel S.M. Santibáñez, Nicolas Anquetil, Márcio E. Delamaro, and Valter Vieira de Camargo

TUE 4:20 – 6:00

G1-117

**(SEC-3) Computer Security
(CF) Computer Forensics**

Session Chair: Graham Steel, INRIA Paris-Rocquencourt, France

Bring Your Own Device, Securely

Alessandro Armando, Gabriele Costa, Luca Verderame, and Alessio Merlo

Run-Time Control Flow Authentication: An Assessment on Contemporary X86 Platforms

Erdem Aktas and Kanad Ghose

Supporting Visual Security Cues for WebView-Based Android Apps

Dongwan Shin, Huiping Yao, and Une Rosi

A Framework for Semantic Annotation of Digital Evidence

Bruno W.P. Hoelz and Célia G. Ralha

Wednesday March 20, 2013

WED 9:00 – 10:40

G0-A1

(DM-1) Data Mining

Session Chair: Hasan Jamil, University of Idaho, USA

Out-of-Bag Discriminative Graph Mining

Andreas Maunz, David Vorgrimmmler, and Christoph Helma

A Supervised Machine Learning Classification Algorithm for Research Articles

Leonidas Akritidis and Panayiotis Bozanis

Discovering Influential Nodes from Trust Network

Sabbir Ahmed and C.I. Ezeife

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

Andreas Hapfelmeier, Jana Schmidt, and Stefan Kramer

WED 9:00 – 10:40

G0-A2

(NETS-1) Networking

Session Chair: Mario Freire, University of Beira Interior, Portugal

Service-Centric Networking Extensions

Torsten Braun, Andreas Mauthe, and Vasilios Siris

A Semi-Supervised Graph-Based Algorithm for Detecting Outliers in Online-Social-Networks

Reza Hassanzadeh and Richi Nayak

Bounded Gossip: A Gossip Protocol for Large-Scale Datacenters

Miguel Branco, João Leitão, and Luís Rodrigues

DoS-Resilient Virtual Networks through Multipath Embedding and Opportunistic Recovery

Rodrigo R. Oliveira, Leonardo R. Bays, Daniel S. Marcon, Miguel C. Neves,

Luciana S. Buriol, Luciano P. Gasparly, and Marinho P. Barcellos

A Novel Demand-Aware Fairness Metric for IEEE 802.11 Wireless Networks

Dmitriy Kuptsov, Boris Nechaev, Andrey Lukyanenko, and Andrei Gurtov

WED 9:00 – 10:40

G1-99

(IAR-1) Information Access and Retrieval

Session Chair: Gloria Bordogna, CNR, Italy

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

Luis M. de Campos, Juan M. Fernández-Luna, Juan F. Huete, and Eduardo Vicente-López

Discovering Unexpected Information on the Basis of Popularity/Unpopularity Analysis of Coordinate Objects and their Relationships

Kosetsu Tsukuda, Hiroaki Ohshima, Mitsuo Yamamoto, Hirotohi Iwasaki, and Katsumi Tanaka

Reducing Information Redundancy in Search Results

Yannis Plegas and Sofia Stamou

Predicting Query Reformulation Type from User Behavior

Kazutoshi Umemoto, Satoshi Nakamura, Takehiro Yamamoto, and Katsumi Tanaka

Determining Language Variant in Microblog Messages

Gustavo Laboreiro, Matko Bošnjak, Luís Sarmiento, Eduarda Mendes Rodrigues, and Eugénio Oliveira

WED 9:00 – 10:40 G1-100

(SEGC) Software Engineering Aspects of Green Computing

Session Chairs: Somayah Malakuti, University of Twente, Netherlands, and Wolfgang Lohmann, Empa, Federal Laboratories for Materials Science and Technology, Switzerland

Energy Consumption Estimation of Virtual Machines
Ingolf Waßmann, Daniel Versick, and Djamshid Tavangarian

Energy-Driven Consolidation in Digital Home
Rémi Druilhe, Matthieu Anne, Jacques Poulou, Laurence Duchien, and Lionel Seinturier

Energy Efficiency Management in Computational Grids through Energy-Aware Scheduling
Silvana Teodoro, Andriele Busatto do Carmo, and Luiz Gustavo Fernandes

Meta-Learning based Architectural and Algorithmic Optimization for Achieving Green-Ness in Predictive Workload Analytics
Nidhi Singh, and Shrisha Rao

WED 9:00 – 10:40 G1-117

(EE-1) Enterprise Engineering

Session Chair: Artur Caetano, IST, Technical University of Lisbon, Portugal

A Framework for the Intelligent Delivery and User Adequate Visualization of Process Information
Markus Hipp, Bernd Michelberger, Bela Mutschler, and Manfred Reichert

Towards Data-Aware Constraints in Declare
Marco Montali, Federico Chesani, Paola Mello, and Fabrizio Maggi

Assessing the Best-Order for Business Process Model Refactoring
María Fernández-Ropero, Ricardo Pérez-Castillo, José A. Cruz-Lemus, and Mario Piattini

Start Time and Duration Distribution Estimation in Semi-Structured Processes
Andreas Wombacher and Maria-Eugenia Iacob

IT Evaluation in Business Groups: A Maturity Model
Florian Hamel, Thomas Ph. Herz, Falk Uebernickel, and Walter Brenner

10:40 – 11:10 POLIVALENTE
Coffee Break

WED 11:10 – 12:50 G0-A1

(DM-2) Data Mining

Session Chair: Raymond Wong, University of New South Wales, Australia

Model Selection based Product Kernel Learning for Regression on Graphs
Madeleine Seeland, Stefan Kramer, and Bernhard Pfahringer

An Algorithm for Discovering Clusters of Different Densities or Shapes in Noisy Data Sets
Fereshte Khani, Mohammad Javad Hosseini, Ahmad Ali Abin, and Hamid Beigy

Comparing Relational and Non-Relational Algorithms for Clustering Propositional Data
Robson Motta, Bruno M. Nogueira, Alipio M. Jorge, Alneu de Andrade Lopes, Solange O. Rezende, and Maria Cristina Ferreira de Oliveira

Speeding up Graph Clustering via MDTree-Based Compression
Paolo Serafino

WED 11:10 – 12:50 G0-A2

(NETS-2) Networking

Session Chair: Mario Freire, University of Beira Interior, Portugal

A Delivery Method Considering Communication Loads for Sensor Data Stream with Different Collection Cycles
Tomoya Kawakami, Yoshimasa Ishi, Tomoki Yoshihisa, and Yuuichi Teranishi

A Decentralized Utility-Based Grid Scheduling Algorithm
João Vasques and Luís Veiga

On the Load Balancing of Virtual Networks in Distributed Clouds
Glauco Estácio Gonçalves, Patricia Takako Endo, André Almeida Palhares, Marcelo Anderson Santos, Judith Kelner, and Djamel Sadok

A Flow-Based Optimization Model for Throughput-Oriented Relay Node Placement in Wireless Sensor Networks
Eduardo Feo Flushing and Gianni A. Di Caro

ABOI: A Novel Strategy to Mitigate the Blocking due to Outdated Information in OCS/OBS Network
Igo Moura, Felipe Mazullo, José Maranhão, and André Soares

WED 11:10 – 12:50 G1-99

(IAR-2) Information Access and Retrieval

Session Chair: Gabriella Pasi, University Milano Bicocca, Italy

gSVD++: Supporting Implicit Feedback on Recommender Systems with Metadata Awareness
Marcelo Garcia Manzano

Effectiveness of State-of-the-Art Features for Microblog Search

Firas Damak, Karen Pinel-Sauvagnat, Guillaume Cabanac, and Mohand Boughanem

Lattice Navigation for Collaborative Filtering by Means of (Fuzzy) Formal Concept Analysis
Sabrina Senatore and Gabriella Pasi

Text Clustering using One-Mode Projection of Document-Word Bipartite Graphs
Ajitesh Srivastava, Axel J. Soto, and Evangelos Milios

When Entities Meet Query Recommender Systems: Semantic Search Shortcuts
Diego Ceccarelli, Sergiu Gordea, Claudio Lucchese, Franco Maria Nardini, and Raffaele Perego

WED 11:10 – 12:50 G1-100

(SE-4) Software Engineering
Session Chair: John Kim, Utica College, USA

A Hybrid Bug Triage Algorithm for Developer Recommendation

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

Executing and Debugging UML Models: An fUML Extension

Yoann Laurent, Reda Bendraou, and Marie-Pierre Gervais

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

Kenneth W.K. Lo, Will W.W. Tang, Grace Ngai, Alvin T.S. Chan, Hong Va Leong, and Stephen C.F. Chan

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

Márcio P. Basgalupp, Rodrigo C. Barros, Tiago S. da Silva, and André C.P.L.F. de Carvalho

WED 11:10 – 12:50 G1-117

(EE-2) Enterprise Engineering
Session Chair: Rogério Carvalho, IFF, Brazil

Amending C-net Discovery Algorithms
Marc Solé and Josep Carmona

Dynamic Instance Queuing in Process-Aware Information Systems

Johannes Pflug and Stefanie Rinderle-Ma

Enterprise Integration using Event Actor based Event Transformations

Simon Tragatschnig and Uwe Zdun

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

Sigrid Schefer-Wenzl and Mark Strembeck

Data Flow Abstractions and Adaptations through Updatable Process Views
Jens Kolb and Manfred Reichert

12:50 – 2:10 POLIVALENTE

Lunch Break

WED 2:30 – 4:00 G2-126

SRC Oral Presentations

See page 22 for details.

WED 2:10 – 2:50 G0-A1

(CIVIA-1) Computational Intelligence Video & Image Analysis

Session Chair: Agostinho Rosa, Technical University of Lisbon, Portugal

A Multiple Feature Vector Framework for Forest Species Recognition

Paulo R. Cavalin, Jefferson Martins, Marcelo N. Kapp, and Luiz E.S. Oliveira

Towards Skeleton Biometric Identification using the Microsoft Kinect Sensor

Ricardo M. Araujo, Gustavo Graña, and Virginia Andersson

Indoor Localization using SLAM in Parallel with a Natural Marker Detector

Lucas Teixeira, Alberto B. Raposo, and Marcelo Gattass

Convexity Local Contour Sequences for Gesture Recognition

Pablo V.A. Barros, Nestor T.M. Junior, Juvenal M.M. Bisneto, Bruno J.T. Fernandes, Byron L.D. Bezerra, and Sérgio M.M. Fernandes

WED 2:10 – 3:50 G0-A2

(DADS-1) Dependable and Adaptive Distributed System

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

Improving Context Interpretation by using Fuzzy Policies: The Case of Adaptive Video Streaming

Lucas Provensi, Frank Eliassen, Roman Vitenberg, and Romain Rouvoy

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

Mouna Allani, Benoît Garbinato, and Peter Pietzuch

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

Rolando Martins, Luis Lopes, Fernando Silva, and Priya Narasimhan

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

Narasimha Raghavan Veeraragavan, Leonardo Montecchi, Nicola Nostro, Andrea Bondavalli, Roman Vitenberg, and Hein Meling

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

Minyoung Kim, Je-Min Kim, Mark-Oliver Stehr, Ashish Gehani, Dawood Tariq, and Jin-Soo Kim

WED 2:10 – 3:50 G1-99

(DTTA-1) Database Theory, Technology, and Applications

Session Chair: Junping Sun, Nova Southeastern University, USA

Driver Input Selection for Main-Memory Multi-Way Joins

Emmanouil Valsomatzis and Anastasios Gounaris

Adaptive Memory-Aware Chunk Sizing Techniques for Data-Intensive

Queries over Web Services

Anastasia Theodouli and Anastasios Gounaris

Efficient XML Duplicate Detection using an Adaptive Two-Level Optimization

Luis Leitão and Pável Calado

Abstract Program Slicing of Database Query Languages

Raju Halder and Agostino Cortesi

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

Anupam Bhattacharjee and Hasan M. Jamil

WED 2:10 – 3:50 G1-100

(SE-5) Software Engineering

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

Quantified Extreme Scenario based Design Approach

Asmaa Abdallah, Riham Hassan, and Mostafa Abdel Azim

Evaluating the Conventional Wisdom in Clone Removal: A Genealogy-Based Empirical Study

Minhaz F. Zibran, Ripon K. Saha, Chanchal K. Roy, and Kevin A. Schneider

OSDC: Adapting ODC for Developing More Secure Software

Umme Hunny, Mohammad Zulkernine, and Komminist Weldemariam

A Model-Based Framework for Flexible Safety-Critical Software Development – A Design Study

Jesper Pedersen Notander, Per Runeson, and Martin Höst

WED 2:10 – 3:50

G1-117

(EE-3) Enterprise Engineering

Session Chair: Maria-Eugenia Iacob, University of Twente, Netherlands

(BIO) Bioinformatics

Session Chair: Dan Tulpan, NRC, Information and Communications Technologies, Canada

Data-Aware Process Mining: Discovering Decisions in Processes using Alignments

Massimiliano de Leoni and Wil M.P. van der Aalst

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

Rafael Accorsi, Thomas Stocker, and Günter Müller

A Conceptual Approach to Gene Expression Analysis Enhanced by Visual Analytics

Cassio Melo, Constantinos Orphanides, Kenneth McLeod, Marie-Aude Aupaure,

Simon Andrews, and Albert Burger

Cross-Lattice Behavior of General ACO Folding for Proteins in the HP Model

Mimma Nardelli, Luciano Tedesco, and Alessio Bechini

BenchDW: A Generic Framework for Biological Data Warehouse Benchmarking

Thomas Triplet and Gregory Butler

3:50 – 4:20

POLIVALENTE

Coffee Break

WED 4:20 – 6:00

G0-A1

(CIVIA-2) Computational Intelligence Video & Image Analysis

Session Chair: Yin-Fu Huang, National Yunlin University of Science and Technology, Taiwan

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

Session Chair: Richard Chbeir, Pau University (UPPA), France

An Evolutionary Spline Fitting Algorithm for Identifying Filamentous Cyanobacteria

Jeremy Porter and Dirk V. Arnold

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

Renata C.B. Madeo, Clodoaldo A.M. Lima, and Sarajane M. Peres

**Spatial Interpolation: An Analytical Comparison
Between Kriging and RBF Networks**
Vinicius Sousa Fazio and Mauro Roisenberg

**Faster Construction of Ball-Partitioning-Based Metric
Access Methods**

Jéssica A. de Souza, Humberto L. Razente, and Maria Camila
N. Barioni

WED 4:20 – 6:00 G0-A2

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

Session Chair: Rui Oliveira, Universidade do Minho, Portugal

MoSQL: An Elastic Storage Engine for MySQL
Alexander Tomic, Daniele Sciascia, and Fernando Pedone

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

Yu Jia, Ivan Brondino, Ricardo Jiménez Peris,
Marta Patiño-Martinez, and
Dianfu Ma,

**Adaptive Monitoring of Web-Based Applications: A
Performance Study**

João Paulo Magalhães and Luís Moura Silva

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

José Pedro Oliveira and José Pereira

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

Christian Inzinger, Waldemar Hummer, Benjamin Satzger,
Philipp Leitner, and Schahram Dustdar

WED 4:20 – 6:00 G1-99

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

Session Chair: Junping Sun, Nova Southeastern University,
USA

(COSYS) Cooperative Systems

Session Chair: Rachid Anane, Coventry University, UK

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

Ścibor Sobieski and Bartosz Zieliński

**Extracting Differences Between Regular Tree
Grammars**

Kazuma Horie and Nobutaka Suzuki

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

Rafael Leonardo Vivian, Elisa Hatsue Moriya Huzita, and
Gislaine Camila Lapasini Leal,

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

Leila Abidi, Christophe Cérin, Jean-Christophe Dubacq, and
Mohamed Jemni

**Distributed Dynamic Data Driven Prediction based
on Reinforcement Learning Approach**
Szu-Yin Lin, Kuo-Ming Chao, Chi-Chun Lo, and
Nick Godwin

WED 4:20 – 6:00 G1-100

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

Session Chair: Emiliano Tramontana, University of Catania,
Italy

**Practical use of Static Composition of Refactoring
Operations**

Julien Cohen and Akram Ajouli

**Fine-Grained Annotations for Pointcuts with a Finer
Granularity**

Walter Cazzola and Edoardo Vacchi

**Exploiting Points-to Maps for De-/Serialization Code
Generation**

Selim Ciraci and Oreste Villa

WED 4:20 – 6:00 G1-117

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

Session Chair: Davide Ancona, University of Genova, Italy

**Implementing Java-Like Languages in Xtext with
Xsemantics**

Lorenzo Bettini

The Ruby Type Checker

Brianna M. Ren, John Toman, T. Stephen Strickland, and
Jeffrey S. Foster

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

Stijn de Gouw, Frank S. de Boer, Peter Y.H. Wong, and
Einar Broch Johnsen

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

Stefan Hong and Yuh-Jzer Joung

Thursday March 21, 2013

**Tue 9:00 – 10:40 Auditório
Keynote Address**

Professor J. A. Tenreiro Machado
See page 5 for details.

THU 9:40 – 12:40 POLIVALENTE

Poster Session I

Posters of the following Tracks: *ASIS, CIVIA, CMASA, CSP, DM, EC, ROBOT, RS, SWA, CC, DADS, MCA, NETS, SGST, WT*
(See page 19 for detailed list of Posters)

THU 11:10 – 12:50 G0-A1

(SWA-1) Semantic Web and Its Applications

Session Chair: Anabela Simões, Institute of Engineering of the Polytechnic Institute of Coimbra, Portugal

Computing Semantic Relatedness using Word Frequency and Layout Information of Wikipedia
Patrick Chan, Yoshinori Hijikata, and Shogo Nishida

Improved Text Annotation with Wikipedia Entities
Christos Makris, Yannis Plegas, and Evangelos Theodoridis

Semantic News Recommendation using WordNet and Bing Similarities

Michel Capelle, Frederik Hogenboom, Alexander Hogenboom, and Flavius Frasinca

Environmental Service Discovery based on Semantically Annotated OGC Service Descriptions
Iker Larizgoitia, Ioan Toma, Arturo Beltran, Alejandro Llaves, and Patrick Maué

THU 11:10 – 12:50 G0-A2

(WT-1) Web Technologies

Session Chair: Angelo Di Iorio, University of Bologna, Italy

The Impact of User-Browser Interaction on Web Performance

Raúl Peña-Ortiz, José A. Gil, Julio Sahuquillo, and Ana Pont

Exploiting Emoticons in Sentiment Analysis

Alexander Hogenboom, Daniella Bal, Flavius Frasinca, Malissa Bal, Franciska de Jong, and Uzay Kaymak

Extending the Web to Support Personal Network Services

John Lyle, Claes Nilsson, Anders Isberg, and Shamal Faily

Model Words-Driven Approaches for Duplicate Detection on the Web

Marnix de Bakker, Flavius Frasinca, Damir Vandic, and Uzay Kaymak

Detecting Tip Spam in Location-Based Social Networks

Helen Costa, Fabricio Benevenuto, and Luiz H.C. Merschmann

THU 11:10 – 12:50 G1-99

(SATTA-1) Software Architecture: Theory, Technology, and Applications

Session Chair: Antonio Bucchiarone, Bruno Kessler Foundation of Trento, Italy

The BRICS Component Model: A Model-Based Development Paradigm for Complex Robotics Software Systems

Herman Bruyninckx, Nico Hochgeschwender, Luca Gherardi, Markus Klotzbücher, Gerhard Kraetzschmar, Davide Brugali, Azamat Shakhimardanov, Jan Paulus, Michael Reckhaus, Hugo Garcia, Davide Faconti, and Peter Soetens

Smart Cities Software Architectures: A Survey

Wellington M. da Silva, Gustavo H.R.P. Tomas, Kelvin L. Dias, Alexandre Alvaro, Ricardo A. Afonso, and Vinicius C. Garcia

A Generic Framework for Deriving Architecture Modeling Methods for Large-Scale Software-Intensive Systems

Zhiqiang Fan, Tao Yue, and Li Zhang

Derivation of Domain-Specific Architectural Knowledge Views from Governance and Security Compliance Metadata

Huy Tran, Ioanna Lytra, and Uwe Zdun

THU 11:10 – 12:50 G1-100

(SVT-1) Software Verification and Testing

Session Chair: Jun Pang, University of Luxembourg, Luxembourg

Accelerated Robustness Testing of State-Based Components using Reverse Execution

Patrick Heckeler, Bastian Schlich, Thomas Kropf, G.R. Cardoso, H. Eichelberger, J. Ruf, S. Huster, S. Burg, W. Rosenstiel, and Hanno Eichelberger

Using Cross-Entropy for Satisfiability

Hana Chockler, Alexander Ivrii, Arie Matsliah, Simone Fulvio Rollini, and Natasha Sharygina

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

Liqian Chen, Renjian Li, Xueguang Wu, and Ji Wang

The Search for the Laws of Automatic Random Testing

Carlo A. Furia, Bertrand Meyer, Manuel Oriol, Andrey Tikhomirov, and Yi Wei

THU 11:10 – 12:50 G1-117

(CM) Coordination Models, Languages and Applications

Session Chair: Mirko Viroli, Università di Bologna, Italy

Internet of Things: A Process Calculus Approach

Ivan Lanese, Luca Bedogni, and Marco Di Felice

Reliable Supervisory Coordination of Stochastic Communicating Processes with Data

J. Markovski

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

Visara Urovi, Alex C. Olivieri, Stefano Bromuri, Nicoletta Fornara, and Michael I. Scumacher

Specifying and Analysing Reputation Systems with a Coordination Language

Alessandro Celestini, Rocco De Nicola, and Francesco Tiezzi

Combining Self-Organisation, Context-Awareness and Semantic Reasoning: The Case of Resource Discovery in Opportunistic Networks

Graeme Stevenson, Juan Ye, Simon Dobson, Danilo Pianini, Sara Montagna, and Mirko Viroli

12:50 – 2:10 POLIVALENTE
Lunch Break

THU 2:10 – 3:50 G0-A1

(SWA-2) Semantic Web and Its Applications

Session Chair: Iker Larizgoitia, STI Innsbruck, Austria

A Software Measurement Task Ontology

Monalessa Perini Barcellos and Ricardo de Almeida Falbo

Enhancing Scientific Information Systems with Semantic Annotations

Éric Leclercq and Marinette Savonnet

Ontology Acquisition from Web Service Descriptions

Shahab Mokarizadeh, Peep Kungas, and Mihhail Matskin

Rank Prediction for Semantically Annotated Resources

Pasquale Minervini, Nicola Fanizzi, Claudia d'Amato, and Floriana Esposito

THU 2:10 – 3:50 G0-A2

(WT-2) Web Technologies

Session Chair: João Araújo, Universidade Nova de Lisboa, Portugal

Discovering Local Attractions from Geo-Tagged Photos

Ombretta Gaggi

Supporting Entailment Constraints in the Context of Collaborative Web Applications

Patrick Gaubatz and Uwe Zdun

Feature-Based Object Identification for Web Automation

Christoph Herzog, Iraklis Kordomatis, Wolfgang Holzinger, Ruslan R. Fayzrakhmanov, and Bernhard Krüpl-Sypien

Service Farming: An Ad-Hoc and QoS-Aware Web Service Composition Approach

Wenbin Li, Youakim Badr, and Frédérique Biennier

THU 2:10 – 3:50 G1-99

(SATTA-2) Software Architecture: Theory, Technology, and Applications

Session Chair: Tao Yue, Simula Research Laboratory, Norway

Modeling Dynamic Adaptations using Augmented Feature Models

Jean-Baptiste Lézoray, Maria-Teresa Segarra, Antoine Beugnard, and Jean-Marie Gilliot

An Infrastructure for the Life Cycle Management of Multi Product Lines

Gerald Holl, Paul Grünbacher, Christoph Elsner, and Michael Vierhauser

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

Piyush Diwan, Patricia Carey, Eric Franz, Yixue Li, Thomas Bitterman, David E. Hudak, and Rajiv Ramnath

THU 2:10 – 3:50 G1-100

(SVT-2) Software Verification and Testing

Session Chair: Mohammad Reza Mousavi, Eindhoven University of Technology and Halmstad University, Sweden

Test Case Generation from Natural Language Requirements based on SCR Specifications

Gustavo Carvalho, Diogo Falcão, Flávia Barros, Augusto Sampaio, Alexandre Mota, Leonardo Motta, and Mark Blackburn

Mutation Testing Strategies using Mutant Classification

Mike Papadakis and Yves Le Traon

Common Specification Language for Static and Dynamic Analysis of C Programs

Mickaël Delahaye, Nikolai Kosmatov, and Julien Signoles

An Interactive Extension Mechanism for Reusing Verified Programs

Sosuke Moriguchi and Takuo Watanabe

THU 2:10 – 3:50 G1-117

(OS-1) Operating Systems

Session Chair: Tei-Wei Kuo, National Taiwan University, Taiwan

Measuring Similarity of Windows Applications using Static and Dynamic Birthmarks

Dongjin Kim, Yongman Han, Seong-je Cho, Haeyoung Yoo, Jinwoon Woo, Yunmook Nah, Minkyu Park, and Lawrence Chung

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

Shuichi Oikawa

Design Analysis for Real-Time Video Transcoding on Cloud Systems

Seungcheol Ko, Seongsoo Park, and Hwansoo Han

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

Luca Abeni and Nicola Manica

Onion and Pizza: New Disk Partitioning Schemes for Virtualization Systems

Dongwoo Kang, Namsu Lee, Sewoog Kim, Jongmoo Choi, Donghee Lee, and Sam H. Noh

**THU 2:40 – 5:40 POLIVALENTE
Poster Session II**

Posters of the following Tracks: *COSYS, DS, DTTA, IAR, MMV, SE, SEGC, SVT, RE, BIO, CM, EE, EMBS, OOPS, OS, PL, SATTA, SEC, SOAP, TRECK*
(See page 20 for detailed list of Posters)

**3:50 – 4:20 POLIVALENTE
Coffee Break**

THU 4:20 – 6:00 G0-A1

(RS) Recommender Systems: Theory and Applications

Session Chair: Prasenjit Mitra, Pennsylvania State University, USA

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

Wei Zeng and Li Chen

Inferring User Utility for Query Revision Recommendation

Henry Blanco and Francesco Ricci

Recommending Insurance Riders

Lior Rokach, Guy Shani, Bracha Shapira, Eyal Chapnik, and Gali Siboni

Constructing and Comparing User Mobility Profiles for Location-Based Services

Xihui Chen, Jun Pang, and Ran Xue

Mining Frequent Itemsets Over Tuple-Evolving Data Streams

Chongsheng Zhang, Mirjana Mazuran, Hamid Mousavi, Yuan Hao, Carlo Zaniolo, and Florent Masseglia

THU 4:20 – 6:00 G0-A2

(CSP) Constraint Solving and Programming

Session Chair: Barry O'Sullivan, University College Cork, Ireland

Many-to-Many Interchangeable Sets of Values in CSPs

Chavalit Likitvivanavong, National University of Singapore, Singapore

Roland H.C. Yap, National University of Singapore, Singapore

Risk-Neutral Bounded Max-Sum for Distributed Constraint Optimization

Javier Larrosa, Universitat Politècnica de Catalunya, Spain
Emma Rollon, Universitat Politècnica de Catalunya, Spain

Dynamic Virtual Arc Consistency

Hiep Nguyen, INRA - BIA Toulouse, France
Thomas Schiex, INRA - BIA Toulouse, France
Christian Bessiere, LIRMM - Montpellier, France

THU 4:20 – 6:00 G1-99

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

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

Credible Recommendation Exchange Mechanism for P2P Reputation Systems

Eleni Koutrouli and Aphrodite Tsalgatidou

Composite Trust-Based Public Key Management in Mobile Ad Hoc Networks

Jin-Hee Cho, Kevin S. Chan, and Ing-Ray Chen

Estimating Domain-Based User Influence in Social Networks

Mario Cataldi, Nupur Mittal, and Marie-Aude Aufaure

THU 4:20 – 6:00 G1-100

(PL) Programming Languages

Session Chair: Barrett Bryant, University of North Texas, USA

New Exception Interfaces for Java-Like Languages

Thiago B.L. Silva and Fernando Castor

Formal Semantics and Expressiveness of a Web Service Composition Language

Marcelo Guerra Hahn, Regina Motz, Martin A. Musicante, and Alberto Pardo

Reliable Scalable Symbolic Computation: The Design of SymGridPar2

Patrick Maier, Rob Stewart, and Phil Trinder

End-to-End Latency Computation in a Multi-Periodic Design

Rémy Wyss, Frédéric Boniol, Julien Forget, and Claire Pagetti

@Java: Annotations in Freedom

Walter Cazzola and Edoardo Vacchi

THU 4:20 – 6:00 G1-117

(OS-2) Operating Systems

Session Chair: Hwansoo Han, Sungkyunkwan University, Korea

A Dynamically Reconfigurable Operating System for Manycore Systems

Chaeseok Im, Minkyu Jeong, Jaedon Lee, and Seungwon Lee

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

Anselm Busse, Jan H. Schönherr, Matthias Diener, Gero Mühl, and Jan Richling

An Efficient Similarity Comparison based on Core API Calls

Minwoo Jang, Joongjin Kook, Samin Ryu, Kahyun Lee, Sung Shin, Ahreum Kim, Youngsu Park, and Eig Hyun Cho

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

Rivalino Matias Jr., Geocy Dyany Oliveira, and Lucio Borges de Araujo

Software Plagiarism Detection via Static API Call Frequency Birthmark

Dong-Kyu Chae, Jiwoon Ha, Sang-Chul Lee, Sang-Wook Kim, and Gyun Woo,

Friday March 22, 2013

FRI 9:00 – 10:40 G0-A1

(SOAP-1) Service-Oriented Architectures and Programming

Session Chair: Ivan Lanese, Università di Bologna, Italy

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

Alexander Cameron, Markus Stumpter, Nanda Nandagopal, Wolfgang Mayer, and Todd Mansell

On the Reconfiguration of Software Connectors

Nuno Oliveira and Luís S. Barbosa

Apprehensive QoS Monitoring of Service Choreographies

C. Bartolini, A. Bertolino, G. De Angelis, A. Ciancone, and R. Mirandola

An Integrated Framework for QoS-Based Adaptation and Exception Resolution in WS-BPEL Scenarios

Dionisis Margaris, Costas Vassilakis, and Panagiotis Georgiadis

FRI 9:00 – 10:40 G0-A2

(MCA-1) Mobile Computing and Applications

Session Chair: Alvin Chan, Hong Kong Polytechnic University, Hong Kong, China

Google Play is not a Long Tail Market: An Empirical Analysis of App Adoption on the Google Play App Market

Nan Zhong and Florian Michahelles

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

Li-Yu Tang, Pi-Cheng Hsiu, Jiun-Long Huang, and Ming-Syan Chen

iPrevention: Towards a Novel Real-Time Smartphone-Based Fall Prevention System

A.K.M. Jahangir Alam Majumder, Farzana Rahman, Ishmat Zerín, William Ebel Jr., and Sheikh Iqbal Ahamed

Predictive Indoor Navigation using Commercial Smart-Phones

Balajee Kannan, Felipe Meneguzzi, M. Bernardine Dias, Katia Sycara, Chet Gnegy, Evan Glasgow, and Piotr Yordanov

Cross-Platform Model-Driven Development of Mobile Applications with MD2

Henning Heitkötter, Tim A. Majchrzak, and Herbert Kuchen

FRI 9:00 – 10:40 G1-99

(RE-1) Requirement Engineering

Session Chair: Ricardo Machado Universidade do Minho, Portugal

Selecting among Alternatives using Dependencies: An NFR Approach

Rutvij Mehta, Tomás Ruiz-López, Lawrence Chung, and Manuel Noguera

On the use of Metamodeling for Relating Requirements and Architectural Design Decisions

Diego Dermeval, Jaelson Castro, Carla Silva, João Pimentel, Ig Ibert Bittencourt, Patrick Brito, Endhe Elias, Thyago Tenório, and Alan Pedro

Advanced Modularity for Building SPL Feature Models: A Model-Driven Approach

João Araújo, Miguel Goulão, Ana Moreira, Inês Simão, Vasco Amaral, and Elisa Baniassad

Aspect Interaction Chart – A UML Approach for Modularizing Aspect Interaction Conflicts

Shubhanan Bakre, Atef Bader, and Tzilla Elrad

A Requirements Catalog for Mobile Learning Environments

Nemésio Freitas Duarte Filho and Ellen Francine Barbosa

FRI 9:00 – 10:40 G1-100

(EMBS-1) Embedded Systems

Session Chair: Alessio Bechini, University of Pisa, Italy

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

Sanghyuk Jung and Yong Ho Song

Virtualization for Safety-Critical, Deeply-Embedded Devices

Felix Bruns, Dirk Kuschner, and Attila Bilgic

Energy-Aware Real-Time Task Synchronization in Multi-Core Embedded Systems

Lin-Fong Fan, Ting-Hao Tsai, Ya-Shu Chen, and Shian-Shing Shyu

Sensor Streams Middleware for Easy Configuration and Processing in Hybrid Sensor Networks

Pedro Furtado and José Cecilio

Improving the Performance of Message Parsers for Embedded Systems

Jigar Solanki, Laurent Réveillère, Yérom-David Bromberg, Bertrand Le Gal, and Tégawendé F. Bissyandé

**10:40 – 11:10 POLIVALENTE
Coffee Break**

FRI 11:10 – 12:50 G0-A1

(SOAP-2) Service-Oriented Architectures and Programming

Session Chair: Manuel Mazzara, University of Newcastle, UK

Efficient Data-Intensive Event-Driven Interaction in SOA

Quirino Zagarese, Gerardo Canfora, Eugenio Zimeo, Iyad Alshabani, Laurent Pellegrino, and Françoise Baude

Disciplined Structured Communications with Consistent Runtime Adaptation

Cinzia Di Giusto and Jorge A. Pérez

A Flexible Approach for Considering Interdependent Security Objectives in Service Composition

Fatih Karatas and Dogan Kesdogan

Monitoring SOA-Based Applications with Business Provenance

Sergio Manuel Serra da Cruz, Raimundo Macário Costa, Mary Manhães, and Jorge Zavaleta

FRI 11:10 – 12:50 G0-A2

(MCA-2) Mobile Computing and Apps

Session Chair: Alvin Chan, Hong Kong Polytechnic University, Hong Kong, China

LOCCAM – Loosely Coupled Context Acquisition Middleware

Marcio E.F. Maia, Andre Fonteles, Benedito Neto, Romulo Gadelha, Windson Viana, and Rossana Andrade

Eliminating the XML Overhead in Embedded XML Languages

Sven Groppe, Björn Schütt, and Stefan Werner

Broadcast Cancellation in Search Mechanisms

Rui Lima, Carlos Baquero, and Hugo Miranda

Sensor-Field Modeling based on In-Network Data Prediction: An Efficient Strategy for Answering Complex Queries in Wireless Sensor Networks

Jose Everardo Bessa Maia and Angelo Brayner

Distributed and Efficient Algorithm for Self-Reconfiguration of MEMS Microrobots

Hicham Lakhlef, Hakim Mabed, and Julien Bourgeois

FRI 11:10 – 12:50 G1-99

(RE-2) Requirement Engineering

Session Chair: João Araújo, Universidade Nova de Lisboa, Portugal

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

C. Palomares, C. Quer, X. Franch, S. Renault, and C. Guerlain

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

Celal Ziftci and Ingolf Krüger

Dynamic Decision Tree for Legacy Use-Case Recovery

Philippe Dugerdil and David Sennhauser

Common Criteria CompliAnt Software Development (CC-CASD)

Kristian Beckers, Stephan Faßbender, Denis Hatebur, Maritta Heisel, and Isabelle Côté

FRI 11:10 – 12:50 G1-100

(EMBS-2) Embedded Systems

Session Chair: Cosimo Antonio Prete, University of Pisa, Italy

An Instruction-Level Fine-Grained Recovery Approach for Soft Errors

Jianjun Xu, Qingping Tan, Lanfang Tan, and Huiping Zhou

Throughput-Constrained Voltage and Frequency Scaling for Real-Time Heterogeneous Multiprocessors

Pengcheng Huang, Orlando Moreira, Kees Goossens, and Anca Molnos

nuKernel: MicroKernel for Multi-Core DSP SoCs with Load Sharing and Priority Interrupts

Chi-Sheng Shih and Hsin-Yu Lai

An FPGA-Based Multi-Core Approach for Pipelining Computing Stages

Ali Azarian, João M.P. Cardoso, Stephan Werner, and Jürgen Becker

MLC-Flash-Friendly Logging and Recovery for Databases

Hua-Wei Fang, Mi-Yen Yeh, and Tei-Wei Kuo

POSTERS LISTING

**THU 9:40 - 12:40 POLIVALENTE
Poster Session I**

(ASIIS) Advances in Spatial and Image-Based Information Systems Track

Building a Scalable Spatial OLAP System

Oliver Baltzer, Andrew Rau-Chaplin, and Norbert Zeh

(CIVIA) Computational Intelligence Video & Image Analysis Track

A Data Reduction and Organization Approach for Efficient Image Annotation

Priscila T.M. Saito, Pedro J. de Rezende, Alexandre X. Falcão, Celso T.N. Suzuki, and Jancarlo F. Gomes

(CMASA) Cooperative Multi-Agent Systems and Applications Track

Towards a Domain Specific Modeling Language for Agent-Based Models In Land use Science

Cédric Grueau and João Araujo

(CSP) Constraint Solving and Programming Track

Solving Equations on Words through Boolean Satisfiability

Michaël Larouche, Alexandre Blondin Massé, Sébastien Gaboury, and Sylvain Hallé

(DM) Data Mining Track

TNS: Mining Top-K Non-Redundant Sequential Rules

Philippe Fournier-Viger and Vincent S. Tseng

Learning Non-Linear Classifiers with a Sparsity Constraint using L1 Regularization

Mathieu Blondel, Kazuhiro Seki, and Kuniaki Uehara

Empowering Automatic Data-Center Management with Machine Learning

Josep Ll Berral, Ricard Gavaldà, and Jordi Torres

Stream Mining of Frequent Sets with Limited Memory

Juan J. Cameron, Alfredo Cuzzocrea, and Carson K. Leung

(EC) Evolutionary Computation Track

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

Estevão Costa, Fábio Fabris, Alexandre Rodrigues Loureiros, Hannu Ahonen, Flávio Miguel Varejão, and Rodrigo Ferro

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

Ladjel Bellatreche, Rima Bouchakri, Alfredo Cuzzocrea, and Sofian Maabout

(ROBOT) Intelligent Robotics Systems Track

A Feasibility Analysis on using Bathymetry for Navigation of Autonomous Underwater Vehicles

Bharath Kalyan and Mandar Chitre

Towards a Software Tool for Ultrasound Guided Robotic Hip Resurfacing Surgery

P.J.S. Gonçalves, P.M.B. Torres, and J.M.M. Martins

Real Time Autonomous Navigation and Obstacle Avoidance using a Semi-Global Stereo Method

Caio César Teodoro Mendes and Denis Fernando Wolf

(RS) Recommender Systems: Theory and Applications Track

Learning Hybrid Recommender Models for Heterogeneous Semantic Data

Andreas Lommatzsch, Benjamin Kille, and Sahin Albayrak

Enhancing Social Matrix Factorization with Privacy

Shahab Mokarizadeh, Nima Dokoohaki, Ramona Bunea, and Mihhail Matskin

Users Segmentations for Recommendation

Lin Chen, Richi Nayak, Sangeetha Kutty, and Yue Xu

(SWA) The Semantic Web and Its Applications Track

A Mediator for Statistical Linked Data

Livia Ruback, Sofia Manso, Percy E. Rivera Salas, Marcia Pesce, Sérgio Ortiga, and Marco A. Casanova

(CC) Cloud Computing Track

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

Hiroaki Shikano, Machiko Asaie, Junji Yamamoto, Tatsuya Saito, Shunsuke Ota, and Keitaro Uehara

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

Kiril Schröder and Wolfgang Nebel

SCAling : SLA-Driven Cloud Auto-Scaling

Yousri Kouki and Thomas Ledoux

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

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

Ana Nunes and José Pereira

**Towards a Ranking Framework for Software
Components**

Dhyanesh Chaudhari, Mohammad Zulkernine, and
Komminist Weldemariam

**(MCA) Mobile Computing and Applications
Track**

**Participatory Sensing based Traffic Condition
Monitoring using Horn Detection**

Rohan Banerjee, Aniruddha Sinha, and Arindam Saha

**Towards a Total Recall: An Activity Tracking and
Recall Mechanism for Mobile Devices**

Sangho Yi, Jaehyuck Shin, Yoonkyong Lee, and Hyun-Jin Choi

**Radio Resource Management in Coordinated
Antenna System Deployments**

Vinay Bheemesh, Parag Kulkarni, Fengming Cao, and
Zhong Fan

(NETS) Networking Track

**isBF: Scalable In-Packet Bloom Filter based
Multicast**

Ilya Nikolaevskiy, Andrey Lukyanenko, Tatiana Polishchuk,
Valentin Polishchuk, and Andrei Gurtov

**A Backward-Compatible Protocol for Inter-Routing
over Heterogeneous Overlay Networks**

Giang Ngo Hoang, Luigi Liquori, Vincenzo Ciancaglini,
Petar Maksimovic, and Hung Nguyen Chan,

**(SGST) Smart Grids and Smart Technologies
Track**

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

Hwantae Kim, Wonkyun Park, and Hwangnam Kim

**Modeling Fundamentals for Smart Grid Enabled
Ecodistricts**

Murat Ahat, Soufian Ben Amor, and Alain Bui

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

Sebastian Meiling, Till Steinbach, Thomas C. Schmidt, and
Matthias Wählisch

(WT) Web Technologies Track

**Designing a 3D Widget Library for WebG.L Enabled
Browsers**

Anna-Liisa Mattila and Tommi Mikkonen

Process-Aware Web Programming with Jolie

Fabrizio Montesi

**THU 2:40 - 5:40 POLIVALENTE
Poster Session II**

(COSYS) Cooperative Systems Track

**HawkEye: A Tool for Collaborative Business Process
Modelling and Verification**

Riccardo Cognini, Damiano Falcioni, Andrea Polini,
Alberto Polzonetti, and Barbara Re

(DS) Data Streams Track

Random Rules from Data Streams

Ezilda Almeida, Petr Kosina, and João Gama

**An Adaptive Regression Tree for Non-Stationary
Data Streams**

Ameneh Gholipour, Mohammad Javad Hosseini, and
Hamid Beigy

**(DTTA) Database Theory, Technology and
Applications Track**

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

Giuseppe Burtini, Scott Fazackerley, and Ramon Lawrence

Filtering XFD Toward Interoperability

Joshua Amavi and Mirian Halfeld Ferrari

(IAR) Information Access and Retrieval Track

Feature Selections for Authorship Attribution

Jacques Savoy

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

Rodrigo Campiolo, Luiz Arthur F. Santos, Daniel Macêdo Batista,
and Marco Aurélio Gerosa

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

Daniel Abril, Guillermo Navarro-Arribas, and Vicenç Torra

(MMV) Multimedia and Visualization Track

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

Aki Hayashi, Takayuki Itoh, and Satoshi Nakamura

**(SE) Software Engineering Track
Notation-Driven vs Metamodel-Driven**

**Development of Domain-Specific Modeling
Languages: An Empirical Study**

Laurent Wouters and Marie-Pierre Gervais

Estimating the Size of Data Mart Projects

Wagner Gonçalves Ferreira and Humberto Torres Marques-Neto

**(SEGC) Software Engineering Aspects of Green
Computing Track**

**Comparing Mobile Applications' Energy
Consumption**

Claas Wilke, Sebastian Richly, Sebastian Götz, Christian Piechnick,
Georg Püschel, and Uwe Abmann

A Design Method for Modular Energy-Aware Software
Steven te Brinke, Somayeh Malakuti, Christoph Bockisch, Lodewijk Bergmans, and Mehmet Akşit

Towards a Definition of Sustainability in and for Software Engineering
Birgit Penzenstadler

(RE) Requirements Engineering Track
The Role of NFRs when Transforming i* Requirements Models into OO-Method Models
Almir Buarque, Jaelson Castro, and Fernanda Alencar

Configuration Support for Feature Models with Soft Constraints
Jorge Barreiros and Ana Moreira

Modeling the Alignment between Business and IS/IT: A Requirements Engineering Perspective
Carlos Salgado, Ricardo J. Machado, and Rita Suzana

(BIO) Bioinformatics Track
A Data Warehouse as an Infrastructure to Mine Molecular Descriptors for Virtual Screening
Giovanni Xavier Perazzo, Ana T. Winck, and Karina S. Machado

(CM) Coordination Models, Languages and Applications Track
Constrained Global Types for Dynamic Checking of Protocol Conformance in Multi-Agent Systems
Davide Ancona, Matteo Barbieri, and Viviana Mascardi

Probabilistic Embedding: Experiments with Tuple-Based Probabilistic Languages
Stefano Mariani and Andrea Omicini

(EE) Enterprise Engineering Track
e3-RoME: A Value-Based Approach for Method Bundling
Sybren de Kinderen and Henderik A. Proper

Product-Based Business Processes Interoperability
Malik Khalfallah, Nicolas Figay, Mahmoud Barhamgi, and Parisa Ghodous

Evaluating a Process for Developing a Capability Maturity Model
Diogo Proença, Ricardo Vieira, Gonçalo Antunes, Miguel Mira da Silva, José Borbinha, Christoph Becker, and Hannes Kulovits

(EMBS) Embedded Systems Track
A Novel Approach for Interactive Debugging of Dynamic Dataflow Embedded Applications
Kevin Pouget, Miguel Santana, Patricia Lopez Cueva, and Jean-François Mehaut

Demand-Based Flash Translation Layer Considering Spatial Locality
Yongmyung Lee, Taedong Jung, and Ilhoon Shin

Kernel-Level Time Composability for Avionics Applications
Andrea Baldovin, Andrea Graziano, Enrico Mezzetti, and Tullio Vardanega

Communication Support at the OS Level to Enhance Design Space Exploration in Multiprocessed Embedded Systems
Alexandra Aguiar, Sergio Johann Filho, Felipe Magalhaes, and

Fabiano Hessel

(OOPS) Object Oriented Programming Languages and Systems Track
Concurrent Typed Intermediate Language
L. Miguel Lourenço, João Costa Seco, and Francisco Martins

(OS) Operating Systems Track
Computation Offloading for Real-Time Systems
Anas Toma and Jian-Jia Chen

A Tour Recommendation Service for Electric Vehicles based on a Hybrid Orienteering Model
Junghoon Lee, Sang-Wook Kim, and Gyung-Leen Park

Enhancing Security Enforcement on Unmodified Android
Cheol Jeon, Bongjae Kim, WooChur Kim, and Yookun Cho

Protecting Android Applications with Steganography-Based Software Watermarking
Joonhyouk Jang, Jinman Jung, Hyunho Ji, Jiman Hong, Dongkyun Kim, and Soon Ki Jung

(PL) Programming Languages Track
Online Identification of Frequently Executed Acyclic Paths by Leveraging Data Stream Algorithms
Gaurav Kumar and Subhajit Roy

A Preliminary Assessment of Haskell's Software Transactional Memory Constructs
Fernando Castor, Francisco Soares-Neto, and André L.M. Santos

LLLR Parsing
Boštjan Slivnik

(SATTA) Software Architecture: Theory, Technology, and Applications Track
A Model Driven Methodology for Enabling Autonomic Reconfiguration of Service Oriented Architecture
Emna Mezghani, Riadh Ben Halima, Ismael Bouassida Rodriguez, and Khalil Drira

(SOAP) Service-Oriented Architecture and Programming Track
User Centric Complex Event Processing based on Service Oriented Architectures
Feng Gao and Sami Bhiri

A Conceptual Framework for Collective Adaptive Systems
A. Bucchiarone, A. Marconi, C. Antares Mezzina, and M. Pistore

Towards an Approach for Modeling and Formalizing SOA Design Patterns with Event-B
Imen Tounsi, Mohamed Hadj Kacem, Ahmed Hadj Kacem, Khalil Drira, and Emna Mezghani

Heterogeneous Device Interaction using an IPv6 Enabled Service-Oriented Architecture for Building Automation Systems
Markus Jung, Jürgen Weidinger, Wolfgang Kastner, and Alex Olivieri

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

A Framework for Evaluating Trust of Service Providers in Cloud Marketplaces

Sheikh Mahbub Habib, Vijay Varadharajan, and Max Mühlhäuser

Student Research Competition Program

Student Research Abstract: A Reconstructing Shredded Document

Computational Intelligence and Video & Image Analysis (CIVIA) Track

Razvan Ranca, University of Edinburgh, UK

Student Research Abstract: INDICIA: A New Distributed Clustering Protocol

Data Streams (DS) Track

Mar Callau-Zori, Universidad Politécnica de Madrid, Spain

Student Research Abstract: Multi-ASIP Platform Synthesis for Real-Time Applications

Embedded Systems (EMBS) Track

Laura Micconi, Technical University of Denmark, Denmark

Student Research Abstract: A Novel Collaborative Intrusion Alert Correlation Model

Computer Security (SEC) Track

Huwaida Tagelsir Elshoush, Department of Computer Science, University of Khartoum, Sudan

Student Research Abstract: Trustworthy Remote Entities in the Smart Grid

Smart Grid and Smart Technologies (SGST) Track

Andrew J. Paverd, Department of Computer Science, University of Oxford, UK

Student Research Abstract: Trust Decomposition with Inter-Component Rating and Performance Certificates

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

Florian Volk, Techn. Universität Darmstadt, CASED, Germany

SAC 2014 INVITATION

SAC 2014 will be held in Gyeongju, Korea, known as the Museum without Walls in March, 2014. It is hosted by Seoul National University, Gyeongbuk National University, Soongsil University, and Dongguk University. Please check the registration desk for handouts. You can also visit the website at <http://www.acm.org/conferences/sac/sac2014/>.

