ACM SAC 2016

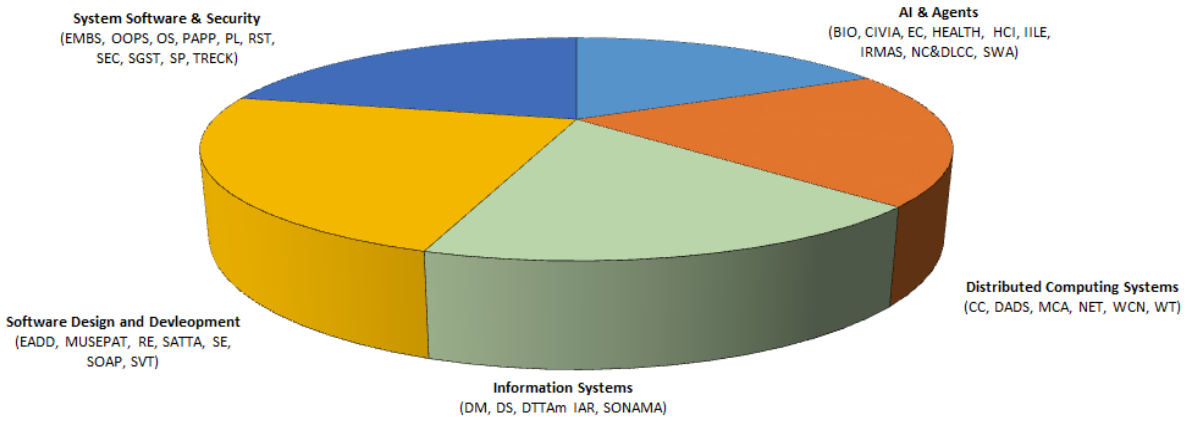
The 31st Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2016 ACM
SYMPOSIUM ON APPLIED COMPUTING

Pisa, Italy
April 4-8, 2016

Organizing Committee

Alessio Bechini
Giorgio Buttazzo
Hisham M. Haddad
Jiman Hong
Chih-Cheng Hung
John Kim
Maria Lencastre
Francesco Marcelloni
Sascha Ossowski
Ettore Ricciardi
Hossain Shahriar



Hosted by
University of Pisa and Scuola Superiore Sant'Anna

****** SAC 2016 at Glance ******

Monday 4/4/2016	Tuesday 4/5/2016	Wednesday 4/6/2016	Thursday 4/7/2016	Friday 4/8/2016
AM Tutorials (9:00am-12:30pm) **Coffee Break (10:30am-11:00pm)**	**Opening Remarks (9:00am-9:25am)** **Keynote Session Dr. John Mylopoulos (9:25am-10:40am)** **Coffee Break (10:40am-11:10am)** **AM Breakout Sessions (11:10am-12:50pm)**	**AM Breakout Sessions (9:00am-10:40am)** **Coffee Break (10:40am-11:10am)** **AM Breakout Sessions (11:10am-12:50pm)** **AM Posters Sessions (10:40am-12:50pm)**	**Opening Remarks (9:00am-9:25am)** **Keynote Session Dr. Marco Conti (9:25am-10:40am)** **Coffee Break (10:40am-11:10am)** **AM Breakout Sessions (11:10am-12:50pm)**	**AM Breakout Sessions (9:00am-10:40am)** **Coffee Break (10:40am-11:10am)** **AM Breakout Sessions (11:10am-12:50pm)**
Tutorials Social Luncheon for Lunch Ticket Holders (12:30pm-2:30pm) Conference venue	**SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) Conference venue**	**SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) Conference venue**	**SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) Conference venue**	**SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) Conference venue**
PM Tutorials (2:30pm-6:00pm) **Coffee Break (4:00pm-4:30pm)**	**PM Breakout Sessions (2:20pm-4:00pm)** **SRC Posters Exhibit (2:30pm-6:10pm)** **Coffee Break (4:00pm-4:30pm)** **PM Breakout Sessions (4:30pm-6:10pm)**	**PM Breakout Sessions (2:20pm-4:00pm)** **PM Posters Sessions (4:00pm-6:10pm)** **Coffee Break (4:00pm-4:30pm)** **PM Breakout Sessions (4:30pm-6:10pm)**	**PM Breakout Sessions (2:20pm-4:00pm)** **SRC Oral Presentations (2:30pm-4:30pm)** **Coffee Break (4:00pm-4:30pm)** **PM Breakout Sessions (4:30pm-6:10pm)**	**END of SAC** ***Thank you for your participation and we hope to see you all next year in Marrakech, Morocco***
	SIGAPP Annual Business Meeting (6:10pm-7:00pm) **SIGAPP Reception (8:00pm-10:30pm) at Cloister of Santa Maria del Carmine**	**Future SAC Organization Meeting (6:10pm-7:00pm)**	**Track Chairs Business Meeting (6:10pm-7:00pm)** **SAC Banquet (8:30pm-11:30pm) at Stazione Leopolda**	

SAC 2016

Introduction

SAC 2016 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 2016 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 April 4 through Friday April 8, 2016. Regular oral presentation sessions start at 9:00 and end at 18:10 in five parallel sessions. Two poster tracks also run on Wednesday April 6, from 10:40 to 12:50 and from 16:00 to 18:10. In addition, the Student Research Competition (SRC) program, sponsored by Microsoft Research. SRC posters display session runs on Tuesday from 14:30 to 18:10 and SRC Presentations session runs on Thursday from 14:30 to 16:30.

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 inter-disciplinary environment. SIGAPP membership fees are: $15.00 for ACM Non-members, $15.00 for ACM Professional Members, and $8.00 for ACM Student Members. For further information on SIGAPP, please contact Jiman Hong at jiman@ssu.ac.kr or visit the SIGAPP website at http://www.acm.org/sigapp.

Support

Local support for SAC 2016 is provided by University of Pisa and Scuola Superiore Sant'Anna. Their support has been essential to the success of the Symposium, and it is greatly appreciated. The SAC 2016 SRC Program is sponsored by Microsoft Research

Symposium Chair Message

Sascha Ossowski
University Rey Juan Carlos, Madrid, Spain

Giorgio Buttazzo
Scuola Superiore Sant'Anna, Pisa, Italy

Alessio Bechini
University of Pisa, Pisa, Italy

On behalf of the Organizing Committee, we welcome you to the 31st Annual ACM Symposium on Applied Computing (SAC 2016), jointly hosted by University of Pisa and Scuola Superiore S. Anna, both in Pisa, Italy. For more than three decades 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 on Applied Computing 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 2016 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 SAC 2016 a high quality conference. We also thank our invited keynote speakers, Dr. John Mylopoulos (University of Toronto, Canada, and University of Trento, Italy) and Dr. Marco Conti (Institute of Informatics and Telematics, Italian National Council for Research, Pisa, Italy) for sharing their knowledge and expertise with SAC 2016 attendees. Most of all, we would like to especially thank the authors and presenters for sharing their experience with the rest of us, and all attendees for joining us in Pisa, Italy this year.

The local organizing committee has been a major contributor to the success of the SAC 2016 conference. Our gratitude goes to the Local Arrangement Chair Dr. Ettore Ricciardi, ISTI-CNR, Pisa, Italy. We extend our thanks to the Publication Chair, Dr. John Kim, Utica College, Utica, New York, USA, for his tremendous effort in putting together the conference proceedings, to the Posters Chair, Dr. Chih-Cheng Hung, Kennesaw University, Marietta, Georgia, USA, for his hard work to make a successful Poster Program, and to the Tutorials Chair Dr. Francesco Marcelloni, University of Pisa, Pisa, Italy, for arranging an exciting set of Tutorials. A big "Thank you" also goes to Dr. Hossain Shahriar, Kennesaw University, Marietta, Georgia, USA, for organising the Student Research Competition, as well as to Dr. Hisham Haddad, Kennesaw University, Marietta, Georgia, USA, for simultaneously playing the roles of treasurer, registrar and webmaster (and many more). Special thanks to our Program Co-Chairs: Dr. Jiman Hong, Soongsil University, Seoul, Korea, and Dr. Maria Lencastre, University of Pernambuco, Recife, Pernambuco, Brazil for coordinating and bringing together an excellent Technical Program.

Again, we welcome you to SAC 2016 in the beautiful city of Pisa, Italy. We hope you enjoy the SAC 2016 conference and your stay in Italy. Next year, we invite you to participate in SAC 2017 to be held in Marrakech, Morocco. The conference will be hosted jointly by the University of Quebec at Montreal, Canada, University Cadi Ayyad of Marrakech, Morocco, the National School in Engineering (EMI) in Rabat, Morocco, and the National School of Applied Sciences (ENSA) in Kenitra, Morocco.

Program Chairs Message

Jiman Hong
Soongsil University, Seoul, Korea

Maria Lencastre
University of Pernambuco, Recife, Brazil

Welcome to the 31st International Symposium on Applied Computing (SAC 2016). For the past 30 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 2016.

The open Call for Track Proposals and after prescreening the proposals, 37 Tracks were finally accepted for SAC 2016. 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 1047 final paper submissions from 58 different countries. The submitted papers underwent the blind review process and 252 submissions were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2016 is 24% for the overall track. In addition to the accepted full papers, 111 submissions that received high enough review scores were accepted as poster papers for the Posters program. The Student Research Competition (SRC) program, sponsored by Microsoft Research, is designed to provide graduate students the opportunity to meet and exchange ideas with researchers and practitioners in their areas of interest. 47 submissions

received and finally 22 submissions were accepted for the SRC program.

The Technical Program of SAC 2016 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 2016 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 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 2016 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, technical 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. Giorgio Buttazzo from Scuola Superiore Sant'Anna, Pisa, Italy, Dr. Alessio Bechini from Scuola Superiore Sant'Anna, Pisa, Italy, Dr. Francesco Marcelloni from University of Pisa, Pisa, Italy, and Dr. Ettore Ricciardi from ISTI-CNR, Pisa, Italy.

We wish you all a pleasant stay in Pisa, hope you have a great time at SAC 2016, 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 32nd International Symposium on Applied Computing (SAC 2017) will be held in the historic city of Marrakech, Morocco. We hope to see you all at SAC 2017.

SAC 2016 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 2016 are listed below:

(AIA) AI and Agents: Tracks: BIO, CIVIA, EC, HCI, HEALTH, IILE, IRMAS, NC&DLCC, SWA

(DS) Distributed Systems: Tracks: CC, DADS, MCA, NET, WCN, WT

(IS) Information Systems: Tracks: DM, DS, DTTA, IAR, SONAMA

(SD) Software Development: Tracks: EADD, MUSEPAT, RE, SATTA, SE, SOAP, SVT

(SSS) System Software and Security: Tracks: EMBS, OOPS, OS, PAPP, PL, RST, SEC, SGST, SP, TRECK

Keynote Speakers

Tuesday April 5, 2016 9:25 - 10:40AM

Dr. John Mylopoulos
Department of Computer Science
University of Toronto
Ontario, Canada

The Requirements Problem in Software Engineering

Abstract

The requirements problem is the problem of deriving a specification consisting of functions and quality constraints that along with a set of domain assumptions satisfy a given set of requirements. We present several formulations of the requirements problem to account for changing requirements, adaptive software design and the next release problem. In each case, we discuss the tractability of algorithms that search spaces of alternatives to find Pareto-optimal solutions to the problem. This is joint work with many colleagues and students, including Roberto Sebastiani, Paolo Giorgini, Fatma Aydemir, Chi Mai Nguyen (UniTN), Neil Ernst (CMU), Alex Borgida (Rutgers) and Ivan Jureta (Namur).

Speaker's Bio

John Mylopoulos holds a professor emeritus position at the Universities of Toronto and Trento. He earned a PhD degree from Princeton University in 1970 and joined the faculty of the Department of Computer Science at the University of Toronto the same year. His research interests include conceptual modelling, requirements engineering, data semantics and knowledge management. Mylopoulos is a fellow of the Association for the Advancement of Artificial Intelligence (AAAI) and the Royal Society of Canada (Academy of Applied Sciences). He has served as programme/general chair of international conferences in Artificial Intelligence, Databases and Software Engineering, including IJCAI (1991), Requirements Engineering (1997, 2011), and VLDB (2004). Mylopoulos is currently leading a project titled "Lucretius: Foundations for Software Evolution",

funded by an advanced grant from the European Research Council.

Thursday April 7, 2016 9:25 - 10:40AM

Dr. Marco Conti
Research Director of the Italian National Research Council (CNR)
Director of the CNR Department of Engineering, ICT and Technologies for Energy and Transportation
Italy

From MANET to people-centric computing and communications

Abstract

In this talk, we first discuss the evolution of the multi-hop ad hoc networking paradigm from MANET to the emerging people-centric networking, where personal mobile devices link the cyber-world with the physical world. People-centric networking leads immediately to emerging localized communication and computing services that are tightly coupled with people and their devices (e.g., mobile data offloading, opportunistic computing, etc.). In the second part of the talk, we discuss how the human behavior (e.g., human social organization) and its cognitive constraints can affect computing and communications in the cyber-physical world. Specifically, we show how embedding models of human behavior into information dissemination protocols can optimize information diffusion.

Speaker's Bio

Dr. Marco Conti is a Research Director of the Italian National Research Council (CNR) and, currently, he is the Director of the CNR Department of Engineering, ICT and Technologies for Energy and Transportation. He has published in journals and conference proceedings more than 350 research papers related to design, modelling, and experimentation of computer networks, future Internet, social networks and pervasive computing systems. He co-authored the books: "Metropolitan Area Networks (MANs): Architectures, Protocols and Performance Evaluation" (Springer 1997) and "Online Social Networks: Human Cognitive Constraints in Facebook and Twitter Personal Graphs" (Elsevier, 2015), and he is co-editor of the books: "Mobile Ad hoc networking: the cutting edge technologies," (IEEE-Wiley 2013), "Mobile Ad Hoc Networking" (IEEE-Wiley 2004), and Mobile Ad Hoc Networks: from Theory to Reality (Nova Science Publishers 2007). He is Editor-in-Chief of Elsevier Computer Communications journal and Associate Editor-in-Chief of Elsevier Pervasive and Mobile Computing journal. He received the best paper award at several conferences, including IFIP TC6 Networking 2011 and IEEE WoWMoM 2013. He served as TPC chair for several major conferences -- including IFIP Networking 2002, IEEE WoWMoM 2005, IEEE PerCom 2006, and ACM MobiHoc 2006 -- and he was general chair (among many others) for IEEE WoWMoM 2006, IEEE MASS 2007 and IEEE PerCom 2010. He is the founder of successful conference and workshop series, such as ACM RealMAN, IEEE AOC, ACM MobiOpp, and IFIP/IEEE SustainIT.

Other Activities

SIGAPP Annual Business Meeting: Tuesday April 5, from 18:10 to 19:00 in Room Galilei. Open to everyone.

SIGAPP Reception: Tuesday April 5, from 20:00 to 22:30 at Cloister of Santa Maria del Carmine. Open to everyone.

Future SAC Organization Meeting: Wednesday April 6, from 18:10 to 19:00 in Room Galilei. Open to everyone.

Track Chairs Business Meeting: Thursday April 7, from 18:10 to 19:00 in Room Galilei. Open for the Organizing Committee and (potential) Track Chairs.

SAC Banquet: Thursday April 7, from 20:30 to 23:30 at Stazione Lepolda. Open for Banquet Ticket holders. See your tickets for full details.

SAC Best Papers/Best Posters Award: Thursday April 7. During the SAC Banquet SAC Program Chairs and Posters Chair will award one best paper for each of the five themes and best posters of this conference.

SRC Program: The Student Research Competition program includes Poster Display on Tuesday at 14:30 in the hallway and Oral Presentations on Thursday at 14:30 in Room Aula E. Medals and certificates will be given to the top three winners during the SAC Banquet.

Tuesday April 5, 2016

TUE 9:25 – 10:40 Auditorium
Keynote Address
Dr. John Mylopoulos
See page 5 for details.

TUE 10:40 – 11:10
Coffee Break

TUE 11:10 – 12:50 Galilei

(DM-1) Data Mining
Session Chair: Stefan Kramer, University of Mainz, Germany

PatchWork, a Scalable Density-Grid Clustering Algorithm
Frank Gouineau, Tom Landry and Thomas Triplet

A Robust Density-based Clustering Algorithm for Multi-Manifold Structure
Jianpeng Zhang, Mykola Pechenizkiy, Yulong Pei, Julia Efremova

On structure preserving sampling and approximate partitioning of graphs
Wouter van Heeswijk, George Fletcher, Mykola Pechenizkiy

Redundancy Reduction: Does It Help Associative Classifiers?
Luiza Antonie, Osmar Zaiane, Robert Holte

Language-Independent Multi-Document Text Summarization with Document-Specific Word Associations
Oskar Gross, Antoine Doucet, Hannu Toivonen

TUE 11:10 – 12:50 Aula B

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

Multimodal Human Attention Detection for Reading
Jiajia Li, Grace Ngai, Hong Va Leong, Stephen Chan

Accessibility Evaluation of Rich Internet Applications Interface Components for Mobile Screen Readers
Lucas Pedroso Carvalho, Lucas Pereira Ferreira, André Freire

A Comparative Evaluation of Interaction Models for the Design of Interactive Systems,
Anna Beatriz Marques, Simone D. J. Barbosa, Tayana Conte

Understanding Player Perceptions of RegnaTales, a Mobile Game for Teaching Social Problem Solving Skills
Yoon Phaik Ooi, Dion Hoe-Lian Goh, Elisa D. Mekler, Alexandre N. Tuch, Jillian Boon, Rebecca P. Ang, Daniel Fung, Jens Gaab

VCloud: Interactive Word Clouds for Knowledge Exploration in Large Unstructured Texts
Wallace Lira, Fernando Gama, Hivana Barbosa, Ronnie Alves, Cleidson de Souza

TUE 11:10 – 12:50 Aula C

(WT-1) Web Technologies
Session Chair: Laércio Augusto Baldochi Júnior - Federal University of Itajuba - Brazil

Who likes me more? Analysing entity-centric language-specific bias in multilingual Wikipedia
Yiwei Zhou, Elena Demidova, Alexandra I. Cristea

Job Recommendation in AskStory: Experiences, Methods, and Evaluation
Yeon-Chang Lee, Jiwon Hong, Sang-Wook Kim

Duplicate Detection in Web Shops using LSH to Reduce the Number of Computations
Iris van Dam, Gerhard van Ginkel, Wim Kuipers, Nikki Nijenhuis, Damir Vandic, Flavius Frasincar

Automatic Identification of Drop-down Menu Widgets using Mutation Observers and Visibility Changes
Willian Massami Watanabe, Renata Pontin de Mattos Fortes

TUE 11:10 – 12:50 Aula D

(SEC-1) Computer Security
Session Chair: Giampaolo Bella, Università di Catania, Italy

Slick: An Intrusion Detection System for Virtualized Storage Devices
Andrei Bacs, Cristiano Giuffrida, Bernhard Grill, Herbert Bos

Implementing a Secure Abstract Machine
Adriaan Larmuseau, Marco Patrignani, Dave Clarke

Enhancing Android Permission through Usage Control: A BYOD Use-Case
Fabio Martinelli, Paolo Mori, Andrea Saracino

Out-of-band Discovery and Evaluation for Tor Hidden Services
Kang Li, Peipeng Liu, Qingfeng Tan, Jinqiao Shi, Yue Gao, Xuebin Wang

Reading Between the Fields: Practical, Effective Intrusion Detection for Industrial Control Systems
Ömer Yüksel, Jerry den Hartog, Sandro Etalle

TUE 11:10 – 12:50 Aula E

(SVT-1) Software Verification and Testing

Session Chair: Mercedes G. Merayo, Universidad Complutense de Madrid, Spain
Gwen Salaün, Grenoble INP, France

Formal Modeling and Analysis of RAMP Transaction Systems
Si Liu, Peter Ölveczky, Muntasir Rahman, Jatin Ganhotra, Indranil Gupta, Jose Meseguer

Termination analysis of floating-point programs using parameterizable rational approximations
Fonenantsoa Maurica, Frédéric Mesnard, Étienne Payet

Predictive Runtime Enforcement
Srinivas Pinisetty, Viorel Preoteasa, Stavros Tripakis,Thierry Jéron, Yliès Falcone, Hervé Marchand

Session Types for Communicating Systems in Event-B
Carlos Olarte, Camilo Rueda

Invariant generation for linearizability proofs
Graeme Smith, John Derrick

TUE 12:50 – 14:20
Lunch Break

TUE 14:30 – 18:10
SRC Posters Exhibition
HALLWAY

See page 24 for details.

TUE 14:20 – 16:00 Galilei

(DM-2) Data Mining

Session Chair: Alfredo Cuzzocrea, University of Trieste, Italy

Interactive Generic Learning Method (IGLM): A New Approach to Interactive Short Text Classification
Ameni Bouaziz, Célia Pereira, Christel –Pallez, Frédéric Precioso

Efficient Algorithms for Mining Recent Weighted Frequent Itemsets in Temporal Transactional Databases
Jerry -Wei Lin, Wensheng Gan, Philippe –Viger, Tzung-Pei Hong

Trading Off Accuracy for Efficiency by Randomized Greedy Warping
Atif Raza, Jörg Wicker and Stefan Kramer

Mining Structured Petri Nets for the Visualization of Process Behavior
Javier De San Pedro and Jordi Cortadella

TUE 14:20 – 16:00 Aula B

(IRMAS) Intelligent Robotics and Multi-Agent Systems

Session Chair: Rui Rocha, University of Coimbra, Portugal

A Tale of Many Explanations: Towards An Explanation Generation System for Robots
Mohan Sridharan, Ben Meadows, Zenon Colaco

Towards Collective Manipulation Without Inter-Agent Communication
Siamak Ghorbani Faal, Shadi Tasdighi Kalat, Cagdas Denizel Onal

The Next Frontier: Combining Information Gain and Distance Cost for Decentralized Multi-Robot Exploration
Rafael Gonçalves Colares, Luiz Chaimowicz

Time-Adaptive Cross Entropy Planning
Lenz Belzner

Learning Relational Probabilistic Action Models for Online Planning with Decision Forests
Lenz Belzner, Alexander Neitz

TUE 14:20 – 16:00 Aula C

(WT-2) Web Technologies

Session Chair: Davide Rossi, University of Bologna, Italy

Rich Cloud-based Web Applications with CloudBrowser 2.0
Xiaozhong Pan, Godmar Back

Automatic Performance Space Exploration of Web Applications Using Genetic Algorithms
Tanwir Ahmad, Dragos Truscan

Object Injection Vulnerability Discovery Based on Latent Semantic Indexing
Hossain Shahriar, Hisham Haddad

Supporting Adaptation of Web Applications to the Mobile Environment with Automated Usability Evaluation
Luiz F. Gonçalves, Leandro Vasconcelos, Ethan Munson, Laercio Baldochi Junior

TUE 14:20 – 16:00 Aula D

(SEC-2) Computer Security
Session Chair: Sergio Maffeis, Imperial College, UK

Implementation-level Analysis of the JavaScript Helios Voting Client
Michael Backes, Christian Hammer, David Pfaff, Malte Skoruppa

Accurate Spear Phishing Campaign Attribution and Early Detection
Yufei Han, Yun Shen

MalFlow: Identification of C&C Servers through Host-based Data Flow Profiling
Tobias Wüchner, Martin Ochoa, Mojdeh Golagha, Gaurav Srivastava, Thomas Schreck, Alexander Pretschner

An Automated Approach for Testing the Security of Web Applications Against Chained Attacks
Alberto Calvi, Luca Viganò

Ensuring endpoint authenticity in WebRTC peer-to-peer communication
Willem De Groef, iMinds-Distrinet, Deepak Subramanian, Martin Johns, Frank Piessens, Lieven Desmet

TUE 14:20 – 16:00 Aula E

(SVT2) Software Verification and Testing
Session Chair: Mercedes G. Merayo, Universidad Complutense de Madrid, Spain
Gwen Salaün, Grenoble INP, France

Testing Access Control Policies against Intended Access Rights
Antonia Bertolino, Said Daoudagh, Francesca Lonetti, Eda Marchetti

Reducing Locating Sequences for Testing from Finite State Machines
Guy Vincent Jourdan, Hasan Ural, Husnu Yenigun

Performance Testing Modeling: an empirical evaluation of DSL and UML-based approaches
Maicon Bernardino, Elder M. Rodrigues, Avelino F. Zorzo

Some Classes of Finite State Machines with Polynomial Length of Distinguishing Test Cases
Husnu Yenigun, Nina Yevtushenko, Natalia Kushik

TUE 16:00 – 16:30
Coffee Break

TUE 16:30 – 18:10 Galilei

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

Structured Gotos are (Slightly) Harmful
Eli Sennesh, Yossi Gil

Embedding Goal-Directed Evaluation through Transformation
Peter Mills, Clinton Jeffery

Optimizing Record Data Structures in Racket
Tobias Pape, Vasily Kirilichev, Robert Hirschfeld

From Atomic Variables to Data-Centric Concurrency Control
Herve Paulino, Daniel Parreira, Nuno Delgado, Antonio Ravara, Ana Matos

TUE 16:30 – 18:10 Aula B

(CIVIA) Computational Intelligence and Video & Image Analysis
Session Chair: Agostinho Rosa, University of Lisbon, Portugal

Unveiling smoke in social images with the SmokeBlock approach
Mirela T. Cazzolato, Marcos Vinicius Naves Bedo, Alceu Ferraz Costa, Jessica Andressa de Souza, Caetano Traina Jr, Jose F Rodrigues-Jr, Agma J. M. Traina

Multiscale Convolutive Blind Source Separation in Wavelet Transform Domain
Jamel Hattay , Samir Belaid, Wady Naanaa,d Taoufik Aguili

An image analysis framework for effective classification of seed damages
Douglas Felipe Pereira, Priscila Tiemi Maeda Saito, Pedro Henrique Bugatti

A Graph Theory-based Online Keywords Model for Image Semantic Extraction
Jing Wang, Zhijie Xu

Beyond Data: Contextual Information Fusion for Cyber Security Analytics

Ahmed Aleroud, George Karabatis

TUE 16:30 – 18:10 Aula C

(NET) Networking

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

Available Bandwidth Measurement in Software Defined Networks
Péter Megyesi, Alessio Botta, Giuseppe Aceto, Antonio Pescapè, Sándor Molnár

Policy Based Security Architecture for Software Defined Networks
Kallol Krishna Karmakar, Vijay Varadharajan, Udaya Tupakula, Michael Hitchens

Prioritizing Deadline-Constrained Data Flows In Cloud Datacenter Networks
Maurice Khabbaz, Khaled Shaban, Chadi Assi, Long Qu

LoSeRO: A Locality Sensitive Routing Protocol in Opportunistic Networks
Gianpiero Costantino, Rajib Ranjan Maiti, Fabio Martinelli, Paolo Santi

Circuit-Switched Translucent Optical Networks Planning with User Level QoS
André Soares, Alexandre Fontinele, Gilvan M. Durães, William Giozza, José R. Amazonas

TUE 16:30 – 18:10 Aula D

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

Session Chair: Ronald Petrlic, Commissioner for Data Protection Baden-Württemberg, Germany

Defining Measurements for Analyzing Information Security Risk Reports in the Telecommunications Sector
Yves Le Bray, Nicolas Mayer, Jocelyn Aubert

Solving Sybil Attacks Using Evolutionary Game Theory
Farah Saab, Ayman Kayssi, Imad Elhajj, Ali Chehab

Feasibility Study of Context-Awareness Device Comfort Calculation Methods and Their Application to Comfort-Based Access Control
Jingjing Guo, Christian Damsgaard Jensen, Jianfeng Ma

TUE 16:30 – 18:10 Aula E

(SVT-3) Software Verification and Testing

Session Chair: Mercedes G. Merayo, Universidad Complutense de Madrid, Spain
Gwen Salaün, Grenoble INP, France

Dead Variable Analysis for Multi-Threaded Heap Manipulating Programs
Pavel Jancik, Jan Kofron

Time Optimal Reachability Analysis using Swarm Verification
Zhengkui Zhang, Brian Nielsen, Kim Guldstand Larsen

Verifying CUDA Programs using SMT-Based Context-Bounded Model Checking
Phillipe Pereira, Higo Albuquerque, Hendrio Marques, Isabela Silva, Celso Carvalho, Lucas Cordeiro, Vanessa Santos, Ricardo Ferreira,

How Bit-Vector Logic Can Help Improve the Verification of LTL Specifications over Infinite Domains
Luciano Baresi, Mohammad Mehdi Pourhashem Kallehbasti, Matteo Rossi

Wednesday April 6, 2016

WED 9:00 – 10:40 Galilei

(DS) Data Streams

Session Chair: Albert Bifet, Télécom ParisTech, France

Fast Adaptive Stacking of Ensembles
Isvani Frías-Blanco, Alberto Verdecia-Cabrera, Agustín Ortiz-Díaz, Andre Carvalho

Real Time Streaming Pattern Detection for eCommerce
William Braik, Floréal Morandat, Jean-Rémy Falleri, Xavier Blanc

Sampling Massive Streaming Call Graphs
Shazia Tabassum, Joao Gama

A Support Vector Based Approach For Classification Beyond the Learned Label Space in Data Streams
Poorya ZareMoodi, Sajjad Kamali Siahroudi, Hamid Beigy

Wavelet Transform Based Vehicle Detection from Sensors for Bridge Weigh-in-Motion
Juan Alegre-Sanahuja, Wei Lu, Atsuhiro Takasu

WED 9:00 – 10:40 Aula B

(SWA-1) Semantic Web and Applications

Session Chair: Hyoil Han, Marshall University, USA

Measuring Semantic Distance for Linked Open Data-enabled Recommender Systems
Guangyuan Piao, John G. Breslin

Leveraging the Schema in Latent Factor Models for Knowledge Graph Completion
Pasquale Minervini, Claudia d'Amato, Nicola Fanizzi, Floriana Esposito

Ontology Enrichment by Discovering Multi-Relational Association Rules from Ontological Knowledge Bases
Claudia d'Amato, Steffen Staab, Andrea G.B. Tettamanzi, Tran Duc Minh, Fabien Gandon

A 2-phase Frame-based Knowledge Extraction Framework
Francesco Corcoglioniti, Marco Rospocher, Alessio Palmero Aprosio

WED 9:00 – 10:40 Aula C

(MCA-1) Mobile Computing and Applications

Session Chair: Hong Va Leong, The Hong Kong Polytechnic University, Hong Kong

Toward Accurate Energy-Efficient Cellular Network: Switching Off Excessive Carriers based on Traffic Profiling
Bin Cao, Jing Fan, Mingxuan Yuan, Yanhua Li

Context-Aware Daily Activity Summarization with Adaptive Transmission
Chung-Kuang Chou, Chia-Chih Lin, Ming-Syan Chen

Insights into Rooted and Non-Rooted Android Mobile Devices with Behavior Analytics
Yun Shen, Nathan Evans, Azzedine Benameur

A Sensor Cloud Architecture for Healthcare Applications
Mohamed Jacem Guezguez, Slim Rekhis, Noureddine Boudriga

Mobile Platform Support for Remote Music Play
Hochul Lee, Jaehun Lee, Hyuck Han, Sooyong Kang

WED 9:00 – 10:40 Aula D

(PL-1) Programming Languages

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

Integrating Regular Expressions and SNOBOL Patterns into String Scanning: a Unifying Approach
Clinton Jeffery, Phillip Thomas, Sudarshan Gaikaiwari, John Goettsche

A Parsing Machine for Parsing Expression Grammars with Labeled Failures
Sérgio Medeiros , Fabio Mascarenhas

Stella: A Python-based Domain-Specific Language for Simulations
David Mohr, Darko Stefanovic

An Embedded Domain Specific Language for Distributed Memory Transactions in Java
Jeronimo Ramos, Andre Du Bois, Mauricio Pilla

Wodel:A Domain-Specific Language for Model Mutation
Pablo Gómez-Abajo, Esther Guerra, Juan de Lara

WED 9:00 – 10:40 Aula E

(MUSEPAT) Multicore Software Engineering, Performance, Applications, and Tools

Session Chair: Pavel Parizek, Charles University in Prague, Czech republic

An Operational Semantics of Cache Coherent Multicore Architectures
Shiji Bijo, Einar Broch Johnsen, Ka I Pun, S. Lizeth Tapia Tarifa

A GPU-Based Implementation for the Gamma Multiset Rewriting Paradigm
Rubens Almeida, Rui. Mello Junior, Gabriel. Paillard, Felipe França

SOMA: An OpenMP Toolchain For Multicore Partitioning
Emanuele Ruffaldi, Filippo Brizzi, Giacomo Dabisias, Giorgio Buttazzo

On Verifying C++ Programs with Probabilities
Jiří Barnat, Ivana Černá, Petr Ročkai, Vladimír Štill, Kristína Zákopčanová

A High-Level and Scalable Approach for Generating Scale-Free Graphs using Active Objects
Keyvan Azadbakht, Nikolaos Bezirgiannis, Frank S. de Boer, Sadegh Aliakbary

WED 10:40 – 11:10
Coffee Break

WED 10:40 – 12:50
Poster Session I
Hallway

Posters of the following Tracks: ***BIO, CC, CIVIA, ECC, DADS, DM, DS, EMBS, HCI, HEALTH, IAR, IRMAS, MCA, NC & DLCC***
(*See page 20 for detailed list of Posters*)

WED 11:10 – 12:50 Galilei

(SONAMA-1) Social Network and Media Analysis

Session Chair: Yoshinori Hijikata, Osaka University, Japan

A Community Detection Technique for Research Collaboration Networks based on Frequent Collaborators Cores
Miloš Savić, Mirjana Ivanović, Bojana Dimić Surla

Estimating Topical Volume in Social Media Streams
Praveen Bommannavar, Jimmy Lin, Anand Rajaraman

SimRank and Its Variants in Academic Literature Data: Measures and Evaluation
Masoud Reyhani Hamedani, Sang-Wook Kim

Pick the Right Team and Make a Blockbuster: a Social Analysis through Movie History
Wladston Viana, Ana Paula Couto da Silva, Mirella M. Moro

WED 11:10 – 12:50 Aula B

(SWA-2) Semantic Web and Applications

Session Chair: Claudia d'Amato, University of Bari, Italy

GoAAL: an Ontology for Goal-oriented Development of AAL Environments
Marco Cameranesi, Claudia Diamantini, Domenico Potena, Emanuele Storti

SECF: Improving SPARQL Querying Performance with Proactive Fetching and Caching
Wei Emma Zhang, Quan Z. Sheng, Kerry Taylor, Yongrui Qin, Lina Yao, Ali Shemshadi

Gold Standard based Evaluation of Ontology Learning Techniques
Hela Sfar Anja Habacha Chaibi, Amel Bouzeghoub, Henda Ben Ghezala

An Ontology Pattern Language for Service Modeling
Ricardo A. Falbo, Glaice K. Quirino, Julio C. Nardi, Monalessa P. Barcellos, Giancarlo Guizzardi, Nicola Guarino, Antonella Longo, Barbara Livieri

WED 11:10 – 12:50 Aula C

(MCA-2) Mobile Computing and Applications

Session Chair: Hong Va Leong, The Hong Kong Polytechnic University, Hong Kong

Real-Time Counting of Moving Objects in Complex Environments
Alfredo Cuzzocrea, Enzo Mumolo, Alessandro Moro

Virtual Running of Vehicle Trajectories for Automatic Map Generation
Jinkwan Park, Taeyong Kim, Bokuk Park, Hwan-Gue Cho

Automated Semantic Trajectory Annotation with Indoor Point-of-interest Visits in Urban Areas
Victor De Graaff, Rolf De By, Maurice Van Keulen

Navigating Visually Impaired Travelers in a Large Train Station Using Smartphone and Bluetooth Low Energy
Jee-Eun Kim, Masahiro Bessho, Shinsuke Kobayashi, Noboru Koshizuka, Ken Sakamura

Voronoi Maps: An Approach to Individual-Based Environmental Exposure Estimation
Wan D. Bae, Shayma Alkobaisi, Wade Meyers, Sada Narayanappa, Petr Vojtechovsky

WED 11:10 – 12:50 Aula D

(PL-2) Programming Languages

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

Integrating Lua into C for Embedding Lua Interpreters in a C Application
Akira Tanimura, Hideya Iwasaki

A Performant Scheme Interpreter in asm.js
Noah Van Es, Jens Nicolay , Quentin Stievenart, Theo D'Hondt,Coen De Roover

An Object Model for a Dynamic Mixin Based Language
Eden Burton, Emil Sekerinski

Using CSP for Coordinating Undo-Based Collaborative Applications
Asma Cherif, Abdessamad Imine

WED 11:10 – 12:50 Aula E

(RE) Requirement Engineering

Session Chair: Julio Leite, PUC-Rio, Brazil
Genaina Rodrigues, University of Brasília, Brazil

Understanding How Power Influences Business and Requirements Decisions in Software Ecosystems
George Valença, Carina Alves

Retrospective, Relevance, and Trends of SAC Requirements Engineering track
Jéssyka Vilela, Enyo Gonçalves, Ana Holanda, Bruno Figueiredo, Jaelson Castro

Usability of Requirements Techniques: A Systematic Literature Review
Denise Bombonatti, Catarina Gralha, Ana Moreira, João Araújo, Miguel Goulão

Eliciting Accessibility Requirements An Approach based on the NFR Framework
Romeu Oliveira, Lyrene Silva, Julio Leite, Ana Moreira

Collaborative Requirements Elicitation in a European Research Project
Guglielmo De Angelis, Alessio Ferrari, Stefania Gnesi, Andrea Polini

Impacts of Agile Requirements Documentation Debt on Software Projects: A Retrospective Study
Thiago Mendes, Henrique Soares, Mário Farias, Manoel Mendonça, Marcos Kalinowski, Rodrigo Spínola

WED 12:50 – 14:20

Lunch Break

WED 14:20 – 16:00 Galilei

(SONAMA-2) Social Network and Media Analysis

Session Chair: Alfredo Cuzzocrea, University of Trieste, Italy

The Anatomy of Online Deception: What Makes Automated Text Convincing?
Richard M. Everett, Jason R.C. Nurse, Arnau Erola

Personalized Time-Aware Outdoor Activity Recommendation System
Shakiba Rahimiaghdam, Pınar Karagöz, Alev Mutlu

From Discussion to Wisdom: Web Resource Recommendation for Hyperlinks in Stack Overflow
Jing Li, Zhenchang Xing, Deheng Ye, Xuejiao Zhao

Clique Covering of Large Real-World Networks
Alessio Conte, Roberto Grossi, Andrea Marino

WED 14:20 – 16:00 Aula B

(EC) Evolutionary Computing

Session Chair: Beatriz Pontes, University of Seville, Spain

(NC&DLCC) NeuroComputing & Deep Learning and Continuous-Time Computing

Session Chair: Egidio Falotico The BioRobotics Institute, Italy

Solving Many-objective Problems using Targeted Search Directions
Maha Elarbi, Slim Bechikh, Lamjed Ben Said, Chih-Cheng Hung

Active Learning Approaches for Learning Regular Expressions with Genetic Programming
Alberto Bartoli, Andrea De Lorenzo, Eric Medvet, Fabiano Tarlao

An improved Lambda-Linear Genetic Programming evaluated in solving the Santa Fe Ant Trail problem
Léo Sotto, Vinícius Melo, Márcio Basgalupp

Similarity Analysis of Neuronal Activation Patterns
Eugênio Saraiva, Herman Gomes

Learning to be Efficient: Algorithms for Training Low-Latency, Low Compute Deep Spiking Neural Networks
Daniel Neil, Michael Pfeiffer, Shih-Chii Liu

WED 14:20 – 16:00 Aula C

(WCN-1) Wireless Communications and Networking

Session Chair: Wei Wang, San Diego State University, USA.

Cooperative Localisation with Hybrid Inertial Navigation System/Pedestrian Dead Reckoning Tracking for GPS-denied Environments
Panagiotis Agis Oikonomou-Filandras, Kai-Kit Wong, Zhongbin Zheng, Yangyang Zhang

A scalable Multiagent Approach for Channel Assignment in Wireless Networks
Tania Lucia Monteiro, Marcelo Eduardo Pollenz, Edgard Jamhour, Manoel Camillo Penna, Fabricio Enembreck, Richard Demo Souza

Interest Forwarding in Vehicular Information Centric Networks: A Survey
Muhammad Azfar Yaqub, Syed Hassan Ahmed, Safdar Hussain Bouk, Dongkyun Kim

A Joint User Association and Load Balancing Scheme for Wireless LANs Supporting Multicast Transmission
Made Harta Dwijaksara, Wha Sook Jeon, Dong Geun Jeong

WED 14:20 – 16:00 Aula D

(SP) Software Platforms

Session Chair: Shaza Hanif, HCT Sharjah, United Arab Emirates

Optimized Multilayer Perceptron using Dynamic Learning Rate Based Microwave Tomography Breast Cancer Screening
Chulwoo Pack, Sung Shin, Hyungdo Choi, Soon Ik Jeon, John Kim

Experimental Approach: Two-stage Spectrum Sensing Using GNU Radio and USRP to Detect Primary User's Signal
Yanxiao Zhao, Jems Pradhan, Guodong Wang, Jun Huang

Evaluation of Smart Scheduling Technologies: Static versus Dynamic Approaches.
Shaza Hanif, Shahab Uddin

WED 14:20 – 16:00 Aula E

(SE-1) Software Engineering

Session Chair: Byungjeong Lee, University of Seoul, Korea

Toward Improving Ability to Repair Bugs Automatically --A Patch Candidate Location Mechanism Using Code Similarity.
Haruki Yokoyama, Yoshiki Higo, Keisuke Hotta, Takafumi Ohta, Kozo Okano, Shinji Kusumoto

A Methodology Towards the Adaptization of Legacy Systems using Agent-oriented Software Engineering
Francois Wavresky, Seok-Won Lee

Automated Memory Leak Fixing on Value-Flow Slices for C Programs
Hua Yan, Yulei Sui, Shiping Chen, Jingling Xue

A Meta-Learning Framework for Algorithm Recommendation in Software Fault Prediction
Silvia Dôres, Luciano Alves, Duncan D. Ruiz, Rodrigo C. Barros

A Systematic Mapping Study on Mining Software Repositories
Mário A. Farias, Renato Novais, Methanias Colaço Jr, Luís Carvalho, Manoel Mendonça, Rodrigo Oliveira Spínola

WED 16:00 – 16:30
Coffee Break

WED 16:00 – 18:10
Poster Session II
Hallway

Posters of the following Tracks: ***DTTA, EADD, MUSEPAT, NET, OOPS, OS, PAPP, PL, RE, RST, SATTA, SE, SGST, SONAMA, SP, SWA, WCN, WT***
(*See page 22 for detailed list of Posters*)

WED 16:30 – 18:10 Galilei

(SONAMA-3) Social Network and Media Analysis

Session Chair: Pinar Karagoz, Middle East Technical University, Turke

An Evaluation of Machine Translation for Multilingual Sentence-level Sentiment Analysis
Matheus Araújo, Julio Reis, Adriano Pereira, Fabrício Benevenuto

Opinion Retrieval in Twitter: Is Proximity Effective?
Anastasia Giachanou, Fabio Crestani

Inferring Semantic Interest Profiles from Twitter Followees
Christoph Besel, Jörg Schlötterer, Michael Granitzer

On the Combination of "Off-The-Shelf" Sentiment Analysis Methods
Pollyanna Gonçalves, Daniel Hasan Dalip, Helen Costa, Marcos A. Gonçalves, Fabrício Benevenuto

WED 16:30 – 18:10 Aula B

(IILE) Intelligent and Interactive Learning Environments

Session Chair: Seiji Isotani, University of São Paulo, Brazil

A Crowdsensing Approach for Mobile Learning in Acoustics and Noise Monitoring
Marco Zappatore, Antonella Longo, Mario Bochicchio, Daniele Zappatore, Alessandro Morrone, Gianluca De Mitri

An Interactive Approach for the Teaching of Virtual Memory Using Open Educational Resources
Carlos E. A. Cacho, Paulo S. L. Souza, Sarita M. Bruschi, Ellen F. Barbosa, Fernando Tiosso

Design and Usability of a Braille-based Mobile Audiogame Environment
Maria C. C. Araujo, Antonio Rodrigo Silva, Ticianne Darin, Everardo Castro, Rossana Andrade, Ernesto T. Lima, Jaime Sánchez, José Aires Filho, Windson Viana

Mobile Phone Text Messaging to Increase Student Participation: An Experience in a Blended Course
Edgar Marçal, Rossana Andrade, Windson Viana, Eduardo Junqueira, Rosemeiry Melo

WED 16:30 – 18:10 Aula C

(WCN-2) Wireless Communications and Networking

Session Chair: Dongkyun Kim, Kyungpook National University, Korea.

Analytical Study of Anycast Asynchronous MAC Protocols for Wireless Sensor Networks
Tales Heimfarth, Joao Carlos Giacomin, Joao Paulo de Araujo, Edison Pignaton de Freitas

E-ProbT: a new approach to mitigate the broadcast storm problem in VANETs
Daniel Lima, Joaquim Junior

On Best Drone Tour Plans for Data Collection in Wireless Sensor Network
Rone da Silva, Mario Nascimento

Comparative Study of Routing Strategies in Software Defined Networking

Sahrish Khan, Abdul Wahid, Sadaf Tanvir

WED 16:30 – 18:10 Aula D

(OS-1) Operating Systems
Session Chair: . Yung-Feng Lu, National Taichung University of Science and Technology, Taiwan

i-RAID: A Novel Redundant Storage Architecture for Improving Reliability, Performance, and Life-Span of Solid-State Disk Systems
Mingyang Wang,Yiming Hu

mmapcopy: Efficient Memory Footprint Reduction using Application Knowledge
Ingo Korb, Helena Kotthaus, Peter Marwedel

Improving I/O Performance of NVMe SSD on Virtual Machines
Jungkil Kim, Sungyong Ahn, Kwanghyun La, Wooseok Chang,

Testing Device Drivers against Hardware Failures in Real Environments
Satoru Takekoshi, Takahiro Shinagawa, Kazuhiko Kato

OS-Level Virtualization for Industrial Automation Systems: Are We There Yet?
Alexandru Moga, Thanikesavan Sivanthi, Carsten Franke

WED 16:30 – 18:10 Aula E

(SE-2) Software Engineering
Session Chair: Hermann Kaindl, TU Wien in Vienna, Austria

Simple Function Points for Effort Estimation: a Further Assessment
Filomena Ferrucci, Carmine Gravino, Luigi Lavazza

Evaluating and Comparing Complexity, Coupling and a New Proposed Set of Coupling Metrics in Cross-Project Vulnerability Prediction.
Sara Moshtari, Ashkan Sami

An Empirical Study on the Effect of Programming Languages on Productivity
Luigi Lavazza, Sandro Morasca, Davide Tosi

Integrated Analysis of Exception Flows and Handler Actions in Java Libraries: An Empirical Study
Demóstenes Sena, Roberta Coelho, Uira Kulesza

Checking Linearizability with Fine-Grained Traces
Zhenyue Long, Yu Zhang

Thursday April 7, 2016

THU 9:25 – 10:40 Auditorium
Keynote Address
Dr. Marco Conti
See page 6 for details.

THU 10:40 – 11:10
Coffee Break

THU 11:10 – 12:50 Galilei

(SE-3) Software Engineering
Session Chair: Matthew Patrick, University of Cambridge, UK

Is Code Cloning in Games Really Different?
Farouq Al-omari, Chanchal K. Roy

Similarity management of `cloned and owned' variants
Thomas Schmorleiz, Ralf Lämmel

Architectural Clones: Toward Tactical Code Reuse
Daniel E. Krutz, Mehdi Mirakhorli

Improving the Quality of Code Snippets in Stack Overflow
Mohammad Reza Tavakoli, Abbas Heydarnoori, Mohammad Ghafari

Software-specific Part-of-Speech Tagging: An Experimental Study on Stack Overflow
Deheng Ye, Zhenchang Xing, Jing Li, Nachiket Kapre

THU 11:10 – 12:50 Aula B

(DADS) Dependable and Adaptive Distributed Systems
Session Chair: Karl M. Goeschka, Vienna University of Technology, Austria

Stretching Multi-Ring Paxos
Samuel Benz, Leandro Pacheco de Sousa, Fernando Pedone

Planning the Transformation of Overlays
Young Yoon, Nathan Robinson, Vinod Muthusamy, Sheila McIlraith, Hans-Arno Jacobsen

NATCloud: Cloud-Assisted NAT-Traversal Service

Hanna Kavalionak, Amir H. Payberah, Alberto Montresor, Jim Dowling

Dynamic Adaptation of Geo-Replicated CRDTs
Carlos Bartolomeu, Manuel Bravo, Luis Rodrigues

Monitoring Service Level Workload and Adapting Highly Available Applications
Mehran Khan, Ferhat Khendek, Maria Toeroe

THU 11:10 – 12:50 Aula C

(CC-1) Cloud Computing

Session Chair: Fernando De la Prieta, University of Salamanca, Spain
S.D Madhu Kumar, National Institute of Technology Calicut, India

Monitoring of Cloud Computing Environments: Concepts, Solutions, Trends, and Future Directions
Guilherme Rodrigues, Rodrigo Calheiros, Vinícius Guimarães, Glederson Santos, Marcio Carvalho, Lisandro Granville, Liane Tarouco, Rajkumar Buyya

Supporting Media Workflows on an Advanced Cloud Object Store Platform
Maurizio Montagnuolo, Alberto Messina, Elliot Kolodner, Doron Chen, Eran Rom, Kalman Meth, Paula Ta-Shma

Elastic Provisioning for Cloud Databases with Uncertainty Management
Victor Farias, Flávio Sousa, José Maia, João Gomes, Javam Machado

Securing Integration of Cloud Services in Cross-Domain Distributed Environments
Bojan Suzic

Hadoop Energy Consumption Reduction with Hybrid HDFS
Ivanilton Polato, Denilson Barbosa, Abram Hindle, Fabio Kon

THU 11:10 – 12:50 Aula D

(OS-2) Operating Systems

Session Chair: Alexandru Moga, ABB Corporate Research, Switzerland

Analysis of Micro-architecture Resources Interference on Multicore NUMA Systems
Haecheon Kim, Seungmin Lim, Junkee Yoon, Seungjae Baek, Jongmoo Choi, Seongje Cho

Load-aware Scheduling for Heterogeneous Multi-core Systems
Mohannad Nabelsee, Anselm Busse, Helge Parzyjegla, Gero Mühl

Multicore CPU Reclaiming: Parallel or Sequential?
Luca Abeni, Giuseppe Lipari, Andrea Parri, Youcheng Sun

Collaborative Processing of Data-Intensive Algorithms with CPU, Intelligent SSD, and GPU
Yong-Yeon Jo, SungWoo Cho, Sang-Wook Kim, Hyunok Oh

Plate: Persistent Memory Management for Nonvolatile Main Memory
Toshihiro Yamauchi, Yuta Yamamoto, Kengo Nagai, Tsukasa Matono, Shinji Inamoto, Masaya Ichikawa, Masataka Goto, Hideo Taniguchi

THU 12:50 – 14:20

Lunch Break

THU 14:30 – 16:30 Aula E

SRC Oral Presentations

See page 24 for details.

THU 14:20 – 16:00 Galilei

(SE-4) Software Engineering

Session Chair: Luigi Lavazza, University of Insubria at Varese, Italy

Reverse Engineering: a European IPR perspective
Paolo Ciancarini, Daniel Russo, Alberto Sillitti, Giancarlo Succi

Automated Procedure Clustering for Reverse Engineering PL/SQL Programs
Metin Altinisik, Hasan Sözer

Model-based Replay Testing for Event-driven Software
Shakaiba Majeed, Minsoo Ryu

Software Testing in a Scientific Research Group
Matthew Patrick, James Elderfield, Richard O.J.H. Stutt, Andrew Rice, Christopher A. Gilligan

Students' and Professionals' Perceptions of Test-driven Development: A Focus Group Study
Giuseppe Scanniello, Simone Romano, Davide Fucci, Burak Turhan, Natalia Juristo

THU 14:20 – 16:00 Aula B

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

Session Chair: Junping Sun, Nova Southeastern University, United States

Improving SQL Query Performance on Embedded Devices using Pre-Compilation
Graeme Douglas, Ramon Lawrence

Take Me to SSD: A Hybrid Block-Selection Method on HDFS based on Storage Type

Minkyung Kim, Mincheol Shin, Sanghyun Park

Optimizing Hash Partitioning for Solid State Drives
Minchoel Shin, Hongchan Roh, Wonmook Jung, Sanghyun Park

Efficient Algorithms for Processing Preference Queries
Marcos Roberto Ribeiro, Fabiola Souza F. Pereira, Vinícius Vitor S. Dias

Data Producer Catalogs for the Web of Things: A Study on NoSQL Solutions
Alberto Trindade Tavares, Marcelo Iury S. Oliveira, Bernadette F. Lóscio

THU 14:20 – 16:00 Aula C

(CC-2) Cloud Computing

Session Chair: Fernando De la Prieta, University of Salamanca, Spain
S.D Madhu Kumar, National Institute of Technology Calicut, India

An Architecture for Providing Elasticity Based on Autonomic Computing Concepts
Emanuel Coutinho, Paulo Rego, Danielo Gomes, José Souza

Performance-aware server consolidation with adjustable interference levels
Luis Carlos Jersak, Tiago Coelho Ferreto

On the Usability of Shortest Remaining Time First Policy in Shared Hadoop Clusters
Nathanaël Cheriere, Pierre Bouillud, Shadi Ibrahim, Matthieu Simonin

Scalable and Manageable Customization of Workflows in Multi-Tenant SaaS Offerings
Majid Makki, Dimitri Van Landuyt, Stefan Walraven, Wouter Joosen

THU 14:20 – 16:00 Aula D

(EMBS-1) Embedded Systems

Session Chair: Yung-Feng Lu, National Taichung University of Science and Technology,

Balanced loop retiming to effectively architect STT-RAM-based hybrid cache for VLIW processors
Keni Qiu, Weigong Zhang, Xiaoqiang Wu, Xiaoyan Zhu, Jing Wang, Yuanchao Xu, Chun Jason Xue

Static Energy Efficient Cache Reconfiguration for Dynamic NUCA in Tiled CMPs
Shounak Chakraborty, Shirshendu Das, Hemangee K. Kapoor

A Low Power STT-RAM Based Register File for GPGPUs
Ehsan Atoofian

Co-Cap: Energy-efficient Cooperative CPU-GPU Frequency Capping for Mobile Games
Jurn-Gyu Park, Chen-Ying Hsieh, Nikil Dutt, Sung-Soo Lim

THU 16:00 – 16:30
Coffee Break

THU 16:30 – 18:10 Galilei

(SE-5) Software Engineering

Session Chair: Eunjee Song, Baylor University, USA

BPMiner: Mining Developers' Behavior Patterns from Screen-Captured Task Videos
Jing Li, Lingfeng Bao, Zhenchang Xing, Xinyu Wang, Bo Zhou

Optimization of Feature Interactions for Automotive Combustion Engines
Dominik Wagner, Hermann Kaindl, Sven Dominka, Michael Dübner

Integrating Feature-based Implementation Approaches using a Common Graph-based Representation
Benjamin Behringer, Steffen Rothkugel

Towards a Generic Framework for Automating Extensive Analysis of Android Applications
Li Li, Daoyuan Li, Alexandre Bartel, Tegawendé F. Bissyandé, Jacques Klein, Yves Le Traon

EMF-REST: Generation of RESTful APIs from Models
Hamza Ed-douibi, Javier Luis Cánovas Izquierdo, Abel Gómez, Massimo Tisi, Jordi Cabot

THU 16:30 – 18:10 Aula B

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

Session Chair: Junping Sun, Nova Southeastern University, United States

(EADD) Enterprise Application Development and Design

Session Chair: Tomas, Cerny, Czech Technical University, Czech Republic

ClusMAM: Fast and Effective Unsupervised Clustering of Large Complex Datasets using Metric Access Methods
Jessica Andressa de Souza, Mirela T. Cazzolato, Agma J. M. Traina

OLAP Analysis of Multidimensional Tweet Streams for Supporting Advanced Analytics
Alfredo Cuzzocrea,Carmen De Maio, Giuseppe Fenza, Vincenzo Loia, Mimmo Parente

Automated Development of Constraint-Driven Web Applications
Mario Luca Bernardi, Marta Cimitile, Fabrizio Maria Maggi

On Security Level Usage in Context-aware Role-based Access Control

Michal Trnka, Tomas Cerny

Dynamically Reconfigurable Trust Policies for Untrustworthy Third-party Components
Kiev Gama

THU 16:30 – 18:10 Aula C

(CC-3) Cloud Computing
Session Chair: Fernando De la Prieta, University of Salamanca, Spain
S.D Madhu Kumar, National Institute of Technology Calicut, India

A Certification Framework for Cloud-based Services
Marco Anisetti, Claudio Ardagna, Filippo Gaudenzi, Ernesto Damiani

NCaaS: Network Configuration as a Service in SDN-Driven Cloud Architectures
Maha Shamseddine, Imad Elhajj, Ali Chehab, Ayman Kayssi, Wassim Itani

Evaluating the Elasticity of Multimedia Applications in a Cloud Computing Environment Using Network Metrics
Emanuel Coutinho, Paulo Rego, José Souza

An Enhanced Biomorphic Model for Cloud Scaling
Gyorgi Stoykov, Anis Yazidi

THU 16:30 – 18:10 Aula D

(EMBS-2) Embedded Systems
Session Chair: Jen-Wei Hsieh, National Taiwan University of Science and Technology, Taiwan

ARTE: Arduino Real-Time Extension for Programming Multitasking Applications
Pasquale Buonocunto, Alessandro Biondi, Marco Pagani, Mauro Marinoni, Giorgio Buttazzo

Dynamic Associativity Enabled DNUCA to Improve Block Localisation in Tiled CMPs
Shirshendu Das, Hemangee K. Kapoor

FIDE - An FMI Integrated Development Environment
Fabio Cremona, Marten Lohstroh, Stavros Tripakis, Christopher Brooks, Edward A. Lee

Probabilistic Analysis of Bufferless Pipelines of Real-Time Tasks
Luca Abeni, Daniele Fontanelli, Luigi Palopoli, Bernardo Villalba Frias

Friday April 8, 2016

FRI 9:00 – 10:40 Aula B

(SGST) Smart Grid and Smart Technologies
Session Chair: Seong-je Cho, Dankook University, Korea

Sensor Network Based Solar Forecasting Using a Local Vector Autoregressive Ridge Framework
Jin Xu, Shinjae Yoo, John Heiser, Paul Kalb

Near Real-Time Electric Load Approximation in Low Voltage Cables of Smart Grids with Models@run.time
Thomas Hartmann, Assaad Moawad, Francois Fouquet, Yves Reckinger, Jacques Klein, Yves Le Traon

Tailor your curves after your costume: Supply-following demand in Smart Grids through the Adwords problem,
Giorgos Georgiadis, Iosif Salem, Marina Papatriantafilou

BayesForSG: A Bayesian Model for Forecasting Thermal Load in Smart Grids
Rohan Nanda, Saguna Saguna, Karan Mitra, Christer Åhlund

FRI 9:00 – 10:40 Aula C

(BIO) Computational Biology and Bioinformatics
Session Chair: Paola Lecca, University of Trento, Italy;
Dan Tulpan, National Research Council, Canada;
Juan M. C. Rodriguez, University of Salamanca, Spain

Parallel Approximate Steady-state Analysis of Large Probabilistic Boolean Networks
Andrzej Mizera, Jun Pang, Qixia Yuan

Discovering Disease-associated Drugs Using Web Crawl Data
Hyunjin Kim, Sanghyun Park,

IDO: Inferring Describable Disease-Gene Relationships Using Opinion Sentences
Jeongwoo Kim, Youngmi Yoon, Sanghyun Park

Discovering Discriminative Graph Patterns from Gene Expression Data
Fabio Fassetti, Simona E. Rombo, Cristina Serrao

A Framework for Virtual Screening
Vinicius Seus, Lande Silva Jr, Jorge Gomes, Pedro Almeida, Adriano Werhli, Karina Machado, Nubia Prates, Nilo Zanata

FRI 9:00 – 10:40 Aula D

(IAR-1) Information Access and Retrieval

Session Chair: Gabriella Pasi, University of Milano Bicocca, Italy

Feeling Lucky? Multi-armed Bandits for Ordering Judgements in Pooling- based Evaluation
David E. Losada, Javier Parapar, Alvaro Barreiro

How do Users Handle Inconsistent Information? The Effect of Search Expertise
Kazutoshi Umemoto, Takehiro Yamamoto, Katsumi Tanaka

Direct Measurement of Training Query Quality for Learning to Rank
Qingli Ma, Ben He, Jungang Xu

Proximity Relevance Model for Query Expansion
Liana Ermakova, Josiane Mothe, Elena Nikitina

FRI 9:00 – 10:40 Aula E

(SOAP) Service--Oriented Architecture and Programming

Session Chair: Hugo Torres Vieira, IMT Lucca, Italy

Improving QoS Delivered by WS-BPEL Scenario Adaptation through Service Execution Parallelization
Dionisis Margaris, Costas Vassilakis, Panagiotis Georgiadis

QoS-aware Adaptation for Complex Event Service
Feng Gao, Muhammad Intizar Ali, Edward Curry, Alessandra Mileo

Service Functional Testing Automation with Intelligent Scheduling and Planning
Lom Messan Hillah, Ariele-Paolo Maesano, Libero Maesano, Fabio De Rosa, Fabrice Kordon, Pierre-Henri Wuillemin

JxActinium: a runtime manager for secure REST-ful CoAP applications working over JXTA
Filippo Battaglia, Giancarlo Iannizzotto, Lucia Lo Bello

FRI 10:40 – 11:10

Coffee Break

FRI 11:10 – 12:50 Aula B

(PAPP) Practical Aspects of High-Level Parallel Programming

Session Chair: : Frederic Loulergue, Universite d'Orleans, France

(RST) Reliable Software Technologies and Communication Middleware

Session Chair: Marisol García-Valls, Universidad Carlos III de Madrid, Spain

Transforming Javascript event-loop into a pipeline
Etienne Brodu, Stéphane Frénot, Frédéric Oblé

Distributed graph processing: an approach based on overlay composition
Emanuele Carlini, Patrizio Dazzi, Alessandro Lulli, Laura Ricci

Exploiting User Feedback for Online Filtering in Event-based Systems
Fabio Petroni, Leonardo Querzoni, Roberto Beraldi, Mario Paolucci

Scalable Monitoring and Dependable Job Scheduling Support for Multi-domain Grid Infrastructures
Marcello Cinque, Antonio Corradi, Luca Foschini, Flavio Frattini, Javier Povedano-Molina

FRI 11:10 – 12:50 Aula C

(HEALTH) HealthCare

Session Chair: Cecilia Laschi, The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, Italy

Privacy-enabled Remote Health Monitoring Applications for Resource Constrained Wearable Devices
Davy Preuveneers, Wouter Joosen

A Situation-Aware Pervasive Approach for Assessing Therapeutic Goals in Healthcare Environment
Joao Lopes, Rodrigo Souza, Claudio Geyer, Alexandre Souza, Patricia Davet, Ana Pernas, Adenauer Yamin

Mind The Tracker You Wear - A Security Analysis of Wearable Health Trackers
Rohit Goyal, Nicola Dragoni, Angelo Spognardi

Testing for Mobile E-Health Interventions
Fiemke Griffioen-Both, Sandor Spruit, Siska Fitrianie, Robbert Jan Beun, Jaap Lancee

Towards Automatic Induction of Abnormal Behavioral Patterns for Recognizing Mild Cognitive Impairment
Zaffar Haider Janjua, Daniele Riboni , Claudio Bettini

Haptic Interaction Objective Evaluation in Needle Insertion Task Simulation
Cléber Corrêa, Daniel Tokunaga, Edith Ranzini, Fátima Marques, Romero Tori

A Movement Activity Recognition Pervasive System for Patient Monitoring in Ambient Assisted Living
José Filho, Francisco Silva, Luciano Coutinho, Berto Gomes, Markus Endler

FRI 11:10 – 12:50 Aula D

(IAR-2) Information Access and Retrieval

Session Chair: Gloria Bordogna, CNR – IREA, Italy

Modeling Clicks using Document Popularity
Xenophon Evangelopoulos, Christos Makris

Modeling Trust and Distrust Information in Recommender Systems via Joint Matrix Factorization with Signed Graphs
Dimitrios Rafailidis

SPARQL Extensions with Preferences: a Survey
Olivier Pivert, Olfa Slama, Virginie Thion

IT Company Atlas Upper Franconia: A Practical Application of Expert Search Techniques
Daniel Blank, Sebastian Boosz, Andreas Henrich

Aggregating Semantic Information Nuggets for Answering Clinical Queries
Eya Znaidi, Lynda Tamine, Chiraz Latiri

FRI 11:10 – 12:50 Aula E

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

Session Chair: Diego Perez-Palacin, Polytechnic University of Milan, Italy

Squirrel: Architecture Driven Resource Management
Inti Gonzalez-Herrera, Johann Bourcier, Walter Rudametkin, Olivier Barais, Francois Fouquet

ArchFeature: Integrating Features into Product Line Architecture
Gharib Gharibi, Yongjie Zheng

Exploring the Combination of Software Visualization and Data Clustering in the Software Architecture Recovery Process
Renato Paiva, Genaina Rodrigues, Rodrigo Bonifácio, Marcelo Ladeira

Deepening the Separation of Concerns in the Implementation of Multimedia Systems
Marcio Ferreira Moreno, Rodrigo Santos, Guilherme Lima, Marcelo Moreno, Luiz Fernando Soares

SAMSON: Self-Adaptive Middleware for Wireless Sensor Networks
Jesús Portocarrero, Flávia Delicato, Paulo Pires, Taniro Rodrigues, Thais Batista

Case-based reasoning and Knowledge-graph based metamodel for runtime adaptive architectural modeling
Marina Mongiello, Tommaso Di Noia, Francesco Nocera, Eugenio Di Sciascio

POSTERS LISTING

WED 10:40 - 12:50
Poster Session I
Hallway

(BIO) Computational Biology and Bioinformatics Track

A method for obtaning rich data from PubMed using SVM.
Junbum Cha, Jeongwoo Kim, Yunku Yeu, Sanghyun Park

Identification of dynamical biological systems based on mixed-effect models
Levy Batista, Thierry Bastogne, El Hadi Djermoune

Extensive Assessment of Metrics on RNA Secondary Structures and Relative Ensembles
Marco Barsacchi

(CC) Cloud Computing Track

Inventory Theory Applied to Cost Optimization in Cloud Computing
Andrea Nodari, Jukka K. Nurminen, Christian Frühwirth

Dynamic Partitioning of Physical Memory Among Virtual Machines [ASMI:Architectural Support for Memory Isolation
Jithin R, Priya Chandran

A Plug-and-Work Tool for Cloud System Reconfiguration with Single Command
Ruey-Kai Sheu, Shyan-Ming Yuan, Xiao-Long Liu, Po-Yu Chung

Reliable modeling of CPU usage in an office worker environment
Hugo Lewi Hammer, Anis Yazidi, Kyrre Begnum

PaaS Dependability Integration Architecture based on Cloud Brokering
Wiem Abbderrahim, Zied Choukair

(CIVIA) Computational Intelligence and Video & Image Analysis Track

Video similarity search by using compact representations
Henrique Silva, Raquel Almeida, Gabriel Fonseca, Carlos Caetano, Dario Vieira, Zenilton Jr, Arnaldo Araújo, Silvo Guimarães

Lung Nodule Classification Based on Shape Distributions

Valéria Fernandes, Rodrigo Kanehisa, Geraldo Braz Junior, Aristófanes Silva, Anselmo Paiva

(EC) Evolutionary Computation Track

On Convergence of Conventional and Meta-Heuristic Methods for Security-Constrained OPF Analysis
Jagadeesh Gunda, Sasa Djokic, Roberto Langella, Alfredo Testa

Medoid-based Data Clustering with Estimation of Distribution Algorithms
Henry Cagnini, Rodrigo Barros, Christian Quevedo, Márcio Basgalupp

(DADS) Dependable and Adaptive Distributed Systems Track

A Multi-Criteria Ranking of Security Countermeasures
Nicola Nostro,Ilaria Matteucci, Andrea Ceccarelli, Francesco Santini, Felicita Di Giandomenico, Fabio Martinelli, Andrea Bondavalli

Analysis of Checkpointing Overhead in Parallel State Machine Replication
Odorico Mendizabal, Fernando Dotti, Fernando Pedone

Deadlock Models in Distributed Computation: Foundations, Design, and Computational Complexity
Valmir Barbosa, Alan Carneiro, Fabio Protti, Ueverton Souza

Virtualization Technologies for the Big Data Environment
Aymen Jlassi, Patrick Martineau

(DM) Data Mining Track

An optimization method of extreme learning machine for regression
Xiao-jian Ding, Xiao-guang Liu, Xin Xu

LayerFolding: Discovering Creative Links in Word Association Networks
Ping Xiao, Hannu Toivonen

Efficient Closed High-Utility Itemset Mining
Philippe Viger, Souleymane Zida, Jerry Lin, Cheng-Wei Wu, Vincent Tseng

A methodology for selecting the most suitable cluster validation internal indices
Caroline Tomasini, Leonardo Emmendorfer, Eduardo Borges, Karina Machado

Clustering Nodes with Attributes via Graph Alignment
Dimitrios Rafailidis

(DS) Data Streams Track

Eventually Consistent Cardinality Estimation with Applications in BioData Mining
Georgios Drakopoulos, Stavros Kontopoulos, Christos Makris

DOBRO: A Prediction Error Correcting Robot Under Drifts
Alexandr Maslov, Hoang Thanh Lam, Mykola Pechenizkiy, Eric Bouillet, Tommi Karkkainen

Clustering Data Streams Using a Forgetful Neural Model
Douglas O. Cardoso, Felipe França, João Gama

Deferral Classification of Evolving Temporal Dependent Data Streams
Michael Mayo, Albert Bifet

A new time series classification approach based on recurrence quantification analysis and Gabor filter
Angelo Silva, Renato Ishii

(EMBS) Embedded Systems Track

Scheduling Algorithm Considering Response Time for Mixed Tasks on Multiprocessor Systems
Chin-Fu Kuo, Yu-Hao Huang, Yung-Feng Lu, Shih-Chun Chou

Combined Data Caching and Delayed Parity Update in RAID with SSD Cache
Sophal Minh, Donghee Lee

Parity Management Scheme for a Hybrid-Storage RAID
Jen-Wei Hsieh, Che-Jen Su

Safety Analysis Generation from Prototyping Models for Transportation Systems
Jean Godot, Sebastien Saudrais, Adil Alif, Bertrand Barbedette, Cherif Larouci

Software for Embedded Systems: A Quality Assessment based on improved ODC taxonomy
Nuno Silva, Marco Vieira

(HCI) Smart Human Computer Interaction Track

From Storyboard to Software: User Evaluation of an Information Literacy Game
Yan Ru Guo, Dion Hoe-Lian Goh

User-Friendly Spreadsheet Querying: An Empirical Study
Rui Pereira, João Saraiva, Jácome Cunha, João Paulo Fernandes

STRATUS: a Questionnaire for Strategic Usability Assessment
Suzanne Kieffer, Jean Vanderdonckt

Usability Heuristics and Accessibility Guidelines: a Comparison of Heuristic Evaluation and WCAG
Andreia Casare, Celmar Silva, Paulo Martins, Regina Moraes

(HEALTH) Healthcare Track

A Novel EEG-Based Emotion Recognition Approach for E-Healthcare Applications
Mouhannad Ali, Fadi Al Machot, Ahmad Haj Mosa, Kyandoghere Kyamakya

(IAR) Information Access and Retrieval Track

Leveraging MPEG-21 User Description for Interoperable Recommender Systems
Sabino Metta, Paolo Casagranda, Alberto Messina, Maurizio Montagnuolo, Francesco Russo

ADORES: A Diversity-oriented Online Recommender System
Max Chevalier, Damien Dudognon, Josiane Mothe

Opinion Retrieval in Twitter Using Stylistic Variations
Anastasia Giachanou, Fabio Crestani

Exploiting different users' interactions for profiles enrichment in recommender systems
Arthur Fortes da Costa, Rafael D'Addio Martins, Marcelo Garcia Manzato, Ricardo J. G. B. Campello

Towards Spreadsheet Integration using Entity Identification driven by a Spatial-Temporal Model
Ramoza Ahsan, Rodica Neamtu, Elke Rundensteiner

(IRMAS) Intelligent Robotics and Multi-Agent Systems Track

Extensible Collaborative Autonomy using GAMS
Anton Dukeman, Julie A. Adams, James Edmondson

Human-Agent Teamwork: What is predictability, why is it important?
Sebastian Ahrndt, Johannes Fähndrich, Sahin Albayrak

A Modular Hybrid Localization Approach for Mobile Robots combining Local Grid Maps and Natural Landmarks
Florian Mirus, Frank Slomian, Stefan Dörr, Felipe Garcia Lopez, Jürgen Pfadt

(MCA) Mobile Computing and Applications Track

A Crowdsourcing Game-Theoretic Intrusion Detection and Rating System
Farah Saab, Imad Elhajj, Ayman Kayssi, Ali Chehab

Towards a Component Infrastructure for Cyber-Physical Systems
Marcio Maia, Rossana Andrade, Windson Viana

An Android Application for Head Tracking
Massimiliano Benedetto, Alessio Gagliardi, Pasquale Buonocunto, Giorgio Buttazzo

(NC&DLCC) NeuroComputing & Deep Learning and Continuous-Time Computing Track

An automatic method for Multiple Sclerosis Lesion Detection in Fluid Attenuated Inversion Recovery Magnetic Resonance Images
Pedro Klein, Ricardo Soder, Jefferson Becker, Alexandre Franco, Marcio Pinho

Petri Nets for Modelling and Analysing a Complex System Related to Alzheimer's Disease
Safae Cherdal, Salma Mouline

WED 16:00 - 18:10
Poster Session II
Hallway

(DTTA) Database Theory, Technology and Applications Track

Converting Spatiotemporal Data Among Multiple Granularity Systems
Muhao Chen, Shi Gao, Jingheng Zhou, X. Sean Wang

(EADD) Enterprise Application Development and Design Track

Method for Decomposition of Monolithic Enterprise Applications
Solvita Berzisa, Inese Polaka , Inese Supulniece, Janis Grabis, Edgars Ozolins, Egils Meiers

Goal Achievement Analysis based on LTL Checking and Decision Tree for Improvements of PAIS
Hiroki Horita, Hideaki Hirayama, Yasuyuki Tahara, Akihiko Ohsuga

(MUSEPAT) Multicore Software Engineering, Performance, Applications and Tools Track

Fast Error Detection with Hybrid Analyses of Future Accesses
Pavel Parizek

Scalable quantum simulation by reductions and decompositions through the Id-operator
Anderson Avila, Renata Reiser, Adenauer Yamin, Mauricio Pilla

(NET) Networking Track

PLIERS: a Popularity-Based Recommender System for Content Dissemination in Online Social Networks
Valerio Arnaboldi, Mattia Giovanni, Franca Delmastro, Elena Pagani

(OOPS) Object Oriented Programming Languages and Systems Track

On the Criteria for Prioritizing Code Anom alies to Identify Architectural Problems
Santiago Vidal, Everton Guimaraes, Willian Oizumi, Alessandro Garcia, J. Andrés Díaz Pace, Claudia Marcos

Using Field Access Frequency to Optimize Layout of Objects in the JVM .
Taees Eimouri, Kenneth B. Kent, Aleksandar Micic, Karl Taylor

Initialize-and-catch
Paola Giannini, Marco Servetto, Elena Zucca

(OS) Operating Systems Track

zf-FTL: A Zero-Free Flash Translation Layer
Dongwook Kim, Sooyong Kang

Virtual Machine Scheduling base on Task Characteristic

Taegyu Hwang, Kisu Kim, Jeonghwan Lee, Jiman Hong, Dongwan Shin

NKE - An Embedded Nanokernel for Educational Purpose
Celso Maciel, Cassio Brasil, Leonardo Silva, Lucas Murliky, João Fragoso, Guilherme Debom, Rivalino Matias Jr., Aline Fracalossi, Margrit Krug

Virtual Machine Halt
Simão Reis, André Zúquete, José Vieira

(PAPP) Practical Aspects of High-Level Parallel Programming Track

Sharing memory in modern distributed applications
Claudio Scordino, Bruno Morelli

Derivation of Parallel-Efficient Structural Recursive Functions from Declarative Graph Queries
Chong Li, Le-Duc Tung, Xiaodong Meng, Zhenjiang Hu

(PL) Programming Languages Track

Automated Adaptation via Quantitative Partial Model Checking
Stefano Bistarelli, Francesco Santini, Fabio Martinelli, Ilaria Matteucci

Principles for Reuse in Formal Language Tools
Luis Diogo Couto, Peter W. V. Tran-Jørgensen, Kenneth Lausdahl

Maintainability of Functional Reactive Programs in a Telecom Server Software
Klervie Toczé, Maria Vasilevskaya, Patrik Sandahl, Simin Tehrani

Futex based locks for C11's generic atomics
Jens Gustedt

A DSL for executable 'how to' manuals
Marcel Heinz, Philipp Helsper, Ralf Lämmel, Tobias M. Schmidt

Extensible Modules for JavaScript
Florent Marchand de Kerchove, Jacques Noyé, Mario Südholt

(RE) Requirement Engineering Track

Quality-centric Feature Model Configuration using Goal Models
Mahdi Noorian, Ebrahim Bagheri, Weichang Du

(RST) Reliable Software Technologies and Communication Middleware Track

Adjusting middleware knobs to suit CPS domains
Marisol Garcia-Valls, Cristian Calva-Urrego, Alejandro Alonso, Juan A. de la Puente, Mahdi Noorian, Ebrahim Bagheri, Weichang Du

(SATTA) Software Architecture: Theory, Technology, and Applications Track

Towards a (de)composable workflow architecture to define data collection policies
Cyril Cecchinel, Sébastien Mosser, Philippe Collet

Tool support for evaluating architectural debt of an existing system: An experience report
Francesca Arcelli Fontana, Riccardo Roveda, Marco Zanoni

From Product Architectures to a Managed Automotive Software Product Line Architecture
Benjamin Cool, Christoph Knieke, Andreas Rausch, Mirco Schindler, Arthur Strasser, Martin Vogel, Oliver Brox, Stefanie Jauns-Seyfried

A Taxonomy for Architectural Stability
Maria Salama, Rami Bahsoon

Decoupled Concurrency: A Self-Adaptive Software Architecture for Programming Multicores
Tai Nguyen, Xinghui Zhao

(SE) Software Engineering Track

Characterizing Non-Deadlock Concurrency Bug Fixes in Open-Source Java Programs
Misun Yu, Yu-Seung Ma, Doo-Hwan Bae

A Graph-Based Approach to Detect Unreachable Methods in Java Software
Simone Romano, Giuseppe Scanniello, Carlo Sartiani, Michele Risi

Automatic formal specification generation of APIs by mining unit tests
Otmar M. Pereira Junior, Wladmir C.Brandão, Mark Alan J. Song

Consistency Checks of Design Specifications against Requirements using Graph-Based Linguistic Analysis
Kai Niklas, Stefan Gärtner, Kurt Schneider

Empirical Investigation of Fault Predictors in Context of Class Membership Probability Estimation
Shahid Hussain, Arif Ali Khan, Kwabena Ebo Bennin

A review and comparison of methods for determining the best analogies in analogy-based software effort estimation
Bodin Chinthanet, Passakorn Phannachitta, Yasutaka Kamei, Pattara Leelaprute, Arnon Rungsawang, Naoyasu Ubayashi, Kenichi Matsumoto

Evaluating the Use of a General-Purpose Benchmark Suite for Domain-Specific SMT-solving
Andrew Healy, Rosemary Monahan, James F. Power

A Formal Modeling and Analysis Framework for Software Product Line of Preemptive Real-Time Systems
Jin Hyun Kim, Axel Legay, Louis-Marie Traonouez, Mathieu Acher, Sungwon Kang

Testability and Software Performance: A Systematic Mapping Study
Mohammad Mahdi Hassan,Wasif Afzal, Birgitta Lindström, Syed Muhammad Ali Shah, Sten F.Andler, Martin Blom

Detecting Indirect Conflicts Between Access Control Policies
Laura Costa Sarkis, Viviane Torres da Silva, Christiano Braga

Deriving UML-based Specifications of Inter-Component Interactions from Runtime Tests
Thorsten Haendler, Stefan Sobernig, Mark Strembeck

A Representation Structure for Software Process Tailoring based on BPMN High-level

Operations
Raquel M. Pillat, Toacy C.Oliveira

(SGST) Smart Grid and Smart Technologies Track

Cascading Attacks against Smart Grid using Control Command Disaggregation and Services
Byungho Min, Vijay Varadharajan

Real-World User Flexibility of Energy Consumption: Two-Stage Generative Model Construction
Nasrin Sadeghianpourhamami, Matthias Strobbe, Chris Develder

Solving the Environmental Economic Dispatch Problem with Prohibited Operating Zones in Microgrids using NSGA-II and TOPSIS
Marco Cococcioni, Beatrice Lazzerini , Francesco Marcelloni, Francesco Pistolesi

(SONAMA) Social Network and Media Analysis Track

Communication Overload Management Through Social Interactions Clustering.
Juan Ventura, Hakim Hacid, Mathieu Roche, Pascal Poncelet

Dynamic Mapping of Dense Geo-Tweets and Web Pages based on Spatio-Temporal Analysis
Yuanyuan Wang, Goki Yasui, Toyokazu Akiyama, Kazutoshi Sumiya, Yoshiharu Ishikawa

Improving classification of tweets using word-word co-occurrence information from a large external corpus
Hugo Lewi Hammer, Anis Yazidi, Aleksander Bai, Paal Engelstad

Enhanced Community Detection in Social Networks using Active Spectral Clustering
Sarah Habashi, Nagia M. Ghanem, Mohamed A. Ismail

News Recommendation based on Tweets for Understanding of Opinion Variation and Events
Douglas Rehem, Jonice Oliveira, Tiago França, Walkir Brito, Claudia Motta

Impact of offline events on online link creation: a case study on events advertised on Facebook
Azadeh Esfandyari, Matteo Zignani, Sabrina Gaito, Gian Rossi

(SP) Software Platforms Track

Similarity Measurement with Combination of Mesh Distance Fourier Transform and Global Features in 2D Binary Image
Ravi Kasaudhan, Sung Y.Shin, Soon Ik Jeon, Seong Ho Son

An Efficient Hadoop Data Replication Method Design for Heterogeneous Clusters
Daeshin Park, Kiwook Kang, Jiman Hong, Yookun Cho

Delay-based Scheduling to Enhance Fairness in a Virtual Machine Environment
Donghee Min, Seonguk Lee, Gibeom Byeon, Jiman Hong

(SWA) Semantic Web and Applications Track

A Bootstrapping Method for Extracting Attribute names with Keys from the Web
Yoshinori Hijikata, Shintaro Nomura, Fumitaka Nakane, Shogo Nishida

Automatic semantic service composition aiming at increasing end-users' accessibility
Nikolaos Kaklanis, Ageliki Konstadinidou, Konstantinos Votis, Dimitrios Tzovaras

(WCN) Wireless Communications and Networking Track

An Adaptive Hole-Bypassing Algorithm for Wireless Sensor Networks
Khaled Hadi

Limited Space Oriented Optimized Storage Protocol in Autonomous Mobile Cloud
Bo Cui, Ru Li, Jing Liu, Yujun Zhang, Zhongcheng Li

DS-MMAC: Dynamic Schedule based MAC for Mobile Wireless Sensor Network
Sreejith V, Suriyadeepan R, Anupama KR, Lucy J Gudino

Development of An O2O (Offline to Online) Application Case Based on Person Wide Web platform
Sunju Ha, Seongbae Eun, Jinman Jung

(WT) Web Technologies Track

MorphingAssist: Seamless Transformation from Keywords to Structured Queries
Yui Yasunaga, Atsuyuki Morishima

Simultaneous Editing of JSON Objects via Operational Transformation
Tim Jungnickel, Tobias Herb

Controlling the Elasticity of Web Applications on Cloud Computing
Michel Albonico, Jean-Marie Mottu, Gerson Sunyé

Analyzing Crowdsourced Promotion Effects in Online Social Networks.
Hee-Jeong, Dong-Kyu Chae, Sang-Wook, Jongwuk Lee

Student Research Competition Program

Student Research Abstract: Evolutionary Reinforcement Learning Based Search Optimization
(EC) Evolutionary Computation Track
Deblina Bhattacharjee

Student Research Abstract: A Web Tool for Medical Topic Modeling
(HEALTH) Healthcare Track
Lukas Huber

Student Research Abstract: Social Element of Big Data Analytics: Integrating Social Network with the Internet of Things
(HCI) Smart Human Computer Interaction Track
Awais Ahamad

Student Research Abstract: Modeling the cerebellum, from neurons to healthy and pathological behaviors.
(NC&DLCC) NeuroComputing & Deep Learning and Continuos-Time Computing Track
Alberto Antonietti

Student Research Abstract: Exploiting the Semantic Similarity of Interests in a Semantic Interest Graph for Social Recommendations
(SWA) Semantic Web and Applications Track
Guangyuan Piao

Student Research Abstract: Towards workload-aware fine-grained control over cloud resources
(CC) Cloud Computing Track
Amjad Ullah

Student Research Abstract: A Mobile News Reader that Turns News Consumption into a Game.
(MCA) Mobile Computing and Applications Track
Catherine Sotirakou

Student Research Abstract: A Data Driven Context Aware Activity Recognition System
(MCA) Mobile Computing and Applications Track
Piyush Rai Saxena

Student Research Abstract: Context-Driven Mobile Apps Management and Recommendation.
(MCA) Mobile Computing and Applications Track
Yong Zheng

Student Research Abstract: Internet of Things-Based Smart Classroom Environment
(WCN) Wireless Communications and Networking Track
Amir Atabekov

Student Research Abstract: An Efficient and Effective Link-based Similarity Measure in Social and Information Network
(DM) Data Mining Track
Masoud Reyhani Hamedani

Student Research Abstract: Advances in Network-Based Ensemble Classifiers for Evolving Data Streams
(DS) Data Streams Track
Heitor Murilo Gomes,

Student Research Abstract: A Methodology for Estimating Execution Times of IO Traces in SSDs
(DTTA) Database Theory, Technology and Applications Track
Yoonsuk Kang

Student Research Abstract: Text Retrieval System Based on a New Representation of Data and Semantic Relationships Between Terms
(IAR) Information Access and Retrieval Track
Nesrine Ksentini

Student Research Abstract: Analyzing the Effect of Brand Building Activities on Brand Image using Topic Modeling Techniques
(SONAMA) Social Network and Media Analysis Track
Kapil Kaushik

Student Research Abstract: Fuzzy ontology-driven web-based framework for supporting architectural design
(SATTA) Software Architecture: Theory, Technology, and Applications Track
Francesco Nocera

Student Research Abstract: A Framework for Assisting Software Process Improvement program in Global Software Development
(SE) Software Engineering Track
Arif Ali Khan,

Student Research Abstract: Introspection of the virtual machines with system calls monitoring
(SE) Software Engineering Track
Natalia Fursova

Student Research Abstract: Threshold Analysis of Design Metrics to Detect Design Flaws
(SE) Software Engineering Track
Shahid Hussain

Student Research Abstract: MDE as Service: Overview and Research Progress
(SE) Software Engineering Track
Fábio Paulo Basso

Student Research Abstract: Towards a Combinatorial Approach for Undiscounted MDPs
(SVT) Software Verification and Testing Track
Vahid Hashemi

Student Research Abstract: A 3D-Cellular Automata based Pseudo-random Number Generator
(SEC) Computer Security Track
Rosemary Koikara

****

Venue

Conference Venue
Palazzo dei Congressi
Via Matteotti, 1,
Pisa, Italy

Banquet

April 7, 2016
Thursday at 8:30pm
Stazione Leopolda
Piazza Guerrazzi

Welcome Reception

April 5th, 2016
Tuesday at 8:00pm
Cloister of Santa Maria del Carmine
Corso Italia

SAC 2017 INVITATION

SAC 2017 will be held in Marrakech, Morocco, March 27-31, 2017.

SAC 2017 is hosted by University of Cadi Ayyad of Marrakech, Morocco, University of Quebec at Montreal, Canada, and National School of Enginnering in Rabat, Rabat, Morocco.

Please check the registration desk for handouts and a poster or visit SAC 2017 website at

http://www.acm.org/conferences/sac/sac2017/

**** Technical Program Session Schedule – SAC 2016 ****

Tuesday April 5, 2016				
Room	**9:00 – 10:40am**	**11:10am – 12:50pm**	**2:20-4:00pm**	**4:30-6:10pm**
Galilei	Keynote Address (Auditorium)	DM-1(5)	DM-2(4)	OOPS(4)
Aula C		WT-1(4)	WT-2(4)	NET(5)
Aula B		HCI(5)	IRMAS(5)	CIVIA(5)
Aula D		SEC-1(5)	SEC-2(5)	TRECK(3)
Aula E		SVT-1(5)	SVT-2(4)	SVT-3(4)
Hallway			SRC Poster Exhibit (2:30-6:10pm)	

Wednesday April 6, 2016				
Room	**9:00 – 10:40am**	**11:10am – 12:50pm**	**2:20-4:00pm**	**4:30-6:10pm**
Galilei	DS(5)	SONOMA-1(4)	SONOMA-2(4)	SONOMA-3(4)
Aula C	MCA-1(5)	MCA-2(5)	WCN-1(4)	WCN-2(4)
Aula B	SWA-1(4)	SWA-2(4)	EC(3)/ NC&DLCC(2)	IILE(4)
Aula E	MUSEPAT(5)	RE(6)	SE-1(5)	SE-2(5)
Aula D	PL-1(5)	PL-2(4)	SP(3)	OS-1(5)
Hallway	AM Poster Session (10:40am-12:50pm)		PM Poster Session (4:00-6:10pm)	

Thursday April 7, 2016				
Room	**9:00 – 10:40am**	**11:10am – 12:50pm**	**2:20-4:00pm**	**4:30-6:10pm**
Aula B	Keynote Address (Auditorium)	DADS(5)	DTTA-1(5)	DTTA-2(2)/ EADD(3)
Aula C		CC-1(5)	CC-2(4)	CC-3(4)
Galilei		SE-3(5)	SE-4(5)	SE-5(5)
Aula D		OS-2(5)	EMBS-1(4)	EMBS-2(4)
Aula E			SRC Oral Presentation (2:30-4:30pm)	

Friday April 8, 2016				
Room	**9:00 – 10:40am**	**11:10am – 12:50pm**		
Aula D	IAR-1(4)	IAR-2(5)		
Aula C	BIO(5)	HEALTH(7)		
Aula E	SOAP(4)	SATTA(6)		
Aula B	SGST(4)	PAPP(2)/RST(2)		

Notes: Please note that the number inside the parentheses is the number of papers scheduled in the session.

Themes and their Tracks	
AI & Agents (9)	BIO, CIVIA, EC, HCI, HEALTH, IILE, IRMAS, NC&DLCC, SWA
Distributed Systems (6)	CC, DADS, MCA, NET, WCN, WT
Information Systems (5)	DM, DS, DTTA, IAR, SONAMA
Software Design & Development (7)	EADD, MUSEPAT, RE, SATTA, SE, SOAP, SVT
System Software & Security (9)	EMBS, OOPS, OS, PAPP, PL, RST, SEC, SGST, SP, TRECK