

# ACM SAC 2017

The 32<sup>nd</sup> Annual ACM Symposium on Applied Computing

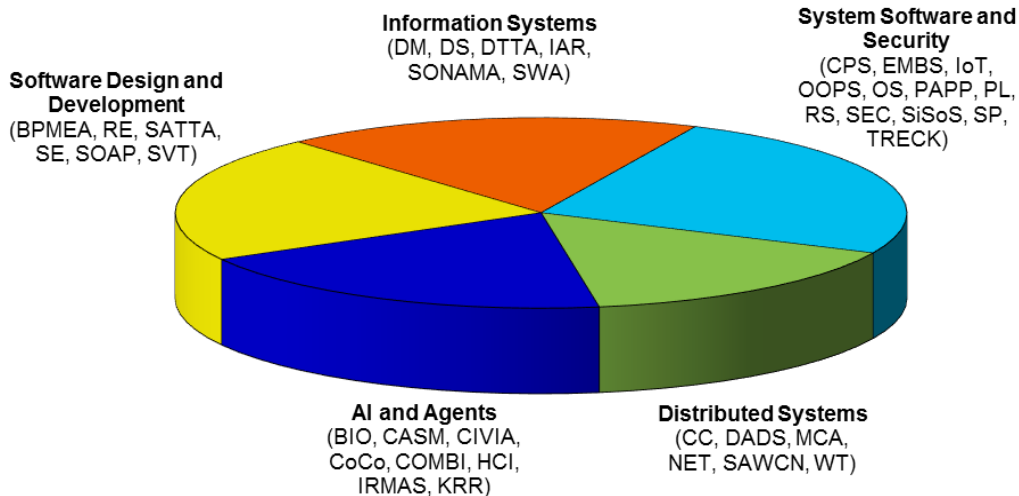
PROCEEDINGS OF THE 2017 ACM  
SYMPOSIUM ON APPLIED COMPUTING

Marrakech, Morocco  
April 4-6, 2017

Organizing Committee

**Hisham M. Haddad**  
**Chih-Cheng Hung**  
**John Kim**  
**Maria Lencastre**

**Hossain Shahriar**  
**Dongwan Shin**  
**Sung Y. Shin**



Sponsored by

**ACM Special Interest Group on Applied Computing (SIGAPP)**

**\*\*\*\*\* SAC 2017 at Glance \*\*\*\*\***

<b>Tuesday 4/4/2017</b>	<b>Wednesday 4/5/2017</b>	<b>Thursday 4/6/2017</b>
<p align="center"><b>Opening Remarks (9:00am-9:25am)</b></p> <p align="center"><b>Keynote Session (9:25am-10:40am)</b></p> <p align="center"><b>Coffee Break (10:40am-11:10am)</b></p> <p align="center"><b>AM Breakout Sessions (11:10am-12:50pm)</b></p>	<p align="center"><b>AM Breakout Sessions (9:00am-10:40am)</b></p> <p align="center"><b>Coffee Break (10:40am-11:10am)</b></p> <p align="center"><b>AM Breakout Sessions (11:10am-12:50pm)</b></p> <p align="center"><b>AM Posters Sessions (10:40am-12:50pm)</b></p>	<p align="center"><b>AM Breakout Sessions (9:00am-10:40am)</b></p> <p align="center"><b>Coffee Break (10:40am-11:10am)</b></p> <p align="center"><b>AM Breakout Sessions (11:10am-12:50pm)</b></p>
<p align="center"><b>SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) (Lila Restaurant)</b></p>	<p align="center"><b>SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) (Lila Restaurant)</b></p>	<p align="center"><b>SAC Luncheon for all Registered Attendees (12:50pm-2:20pm) (Lila Restaurant)</b></p>
<p align="center"><b>PM Breakout Sessions (2:20pm-4:00pm)</b></p> <p align="center"><b>SRC Posters Exhibit (2:30pm-6:10pm)</b></p> <p align="center"><b>Coffee Break (4:00pm-4:30pm)</b></p> <p align="center"><b>PM Breakout Sessions (4:30pm-6:10pm)</b></p>	<p align="center"><b>PM Breakout Sessions (2:20pm-4:00pm)</b></p> <p align="center"><b>PM Posters Sessions (4:00pm-6:10pm)</b></p> <p align="center"><b>Coffee Break (4:00pm-4:30pm)</b></p> <p align="center"><b>PM Breakout Sessions (4:30pm-6:10pm)</b></p>	<p align="center"><b>PM Breakout Sessions (2:20pm-4:00pm)</b></p> <p align="center"><b>SRC Oral Presentations (2:30pm-4:30pm)</b></p> <p align="center"><b>Coffee Break (4:00pm-4:30pm)</b></p> <p align="center"><b>PM Breakout Sessions (4:30pm-6:10pm)</b></p>
<p align="center"><b>SIGAPP Annual Business Meeting (6:10pm-7:00pm) (Curcuma Room)</b></p> <p align="center"><b>SIGAPP Reception (7:30pm-9:00pm) (Pool Deck)</b></p>	<p align="center"><b>Future SAC Organization Meeting (6:10pm-7:00pm) (Curcuma Room)</b></p>	<p align="center"><b>Track Chairs Business Meeting (6:10pm-7:00pm) (Curcuma Room)</b></p> <p align="center"><b>SAC Banquet (8:00pm-10:00pm) (Cannelle I &amp; II)</b></p>

**\*\*\*\* SAC 2017 Session Schedule \*\*\*\***

<b>Tuesday April 4, 2017</b>				
<b>Room</b>	<b>9:00 - 10:40am</b>	<b>11:10am - 12:50pm</b>	<b>2:20 - 4:00pm</b>	<b>4:30 - 6:10pm</b>
Cannelle I&II	<b>Opening Remarks (9:00am)</b>	BIO/COMBI (5)	IRMAS-1(5)	IRMAS-2(4)
Curcuma		NET (5)	MCA-1 (4)	MCA-2 (4)
Cumin		DS (5)	SONAMA-1 (5)	SONAMA-2 (5)
Coriandre I &II		SATTA (5)	SVT-1 (5)	SVT-2 (5)
Ras El Hanout		SiSoS (5)	IoT (5)	CPS (5)
Foyer Patio			<b>SRC Poster Presentations (2:30pm - 6:10pm)</b>	
<b>SIGAPP Business Meeting (6:10pm - 7:00pm) at Curcuma Room</b>				
<b>SGAPP Welcome Reception (7:30pm - 9:00pm) at Pool Deck</b>				

<b>Wednesday April 5, 2017</b>				
<b>Room</b>	<b>9:00 - 10:40am</b>	<b>11:10am - 12:50pm</b>	<b>2:20 - 4:00pm</b>	<b>4:30 - 6:10pm</b>
Cannelle I	DTTA-1 (5)	DTTA-2 (1) / CoCo (4)	SOAP (4) / KRR-1 (1)	KRR-2 (6)
Cannelle II	DM-1 (5)	DM-2 (4)	IAR-1 (5)	IAR-2 (1) / PL (4)
Curcuma	DADS-1 (5)	DADS-2(2) / BPMEA-1(3)	BPMEA-2 (5)	CASM (4)
Coriandre I &II	SWA-1 (5)	SWA-2 (2) / SP (3)	RE-1 (5)	RE-2 (1) / WT (4)
Foyer Patio	<b>AM Posters Display Session (10:40am - 12:50pm)</b>		<b>PM Posters Display Session (4:00pm - 6:10pm)</b>	
<b>Future SAC Organization Meeting (6:10pm - 7:00pm) at Curcuma Room</b>				

<b>Thursday April 6, 2017</b>				
<b>Room</b>	<b>9:15 - 10:40am</b>	<b>11:10am - 12:50pm</b>	<b>2:20 - 4:00pm</b>	<b>4:30 - 6:10pm</b>
Curcuma	HCI-1 (4)	HCI-2 (4)	CIVIA-1 (4)	CIVIA-2 (3)
Cumin	SEC-1 (4)	SEC-2 (4)	TRECK(3) / OS-1 (2)	OS-2 (5)
Paprika	EMBS (4)	WCN (4)	PAPP (3) / CC-1 (2)	CC-2 (6)
Coriandre I &II	OOPS (3) / SE-1(2)	SE-2 (5)	SE-3 (5)	SE-4 (5)
Ras El Hanout	RS-1 (5)	RS-2 (4)	<b>SRC Oral Presentations (2:30pm - 4:30pm)</b>	
<b>Track Chair Meeting (6:10pm - 7:00pm) at Curcuma Room</b>				
<b>SAC Banquet Dinner (8:00pm - 10:00pm) at Cannelle I&amp;II</b>				

---

## SAC 2017

## Introduction

SAC 2017 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 2017 features a keynote speaker on Tuesday, from 9:25 to 10:40. The technical program of the symposium consists of 38 tracks on different research topics, which run from Tuesday April 4 through Thursday April 6, 2017. 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 5, from 10:40 to 12:50 and from 16:00 to 18:10. In addition, for 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 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 Jiman Hong at [jiman@ssu.ac.kr](mailto:jiman@ssu.ac.kr) or visit the SIGAPP website at <http://www.acm.org/sigapp>.

## Support

The SAC 2017 SRC Program is sponsored by Microsoft Research

Microsoft®  
**Research**

## Symposium Chair Message

**Sung Y. Shin**

*South Dakota State University, Brookings, SD, USA*

On behalf of the Organizing Committee, we welcome you to the 32nd Annual ACM Symposium on Applied Computing (SAC 2017). This international forum has been dedicated to computer scientists, engineers and practitioners for the purpose of presenting their findings and research outputs in numerous 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.

The Symposium is sponsored by the ACM Special Interest Group on Applied Computing (SIGAPP), whose mission is to further the interests of computing professionals engaged in the design and development of new computing applications, interdisciplinary applications areas, and applied research. This conference is dedicated to the study of applied 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 2017 offers Technical Tracks and Posters. 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 set of highly qualified reviewers. We wish to thank the Track Chairs, Co-Chairs, Committee Members and participating reviewers for their hard work and effort to make the SAC 2017 conference a high quality conference. Most of all, special thanks to the authors and presenters for sharing their experience

---

with the rest of us and to all attendees for joining us in Marrakech, Morocco, this year.

The organizing committee has always been a key contributor to the success of the SAC 2017 conference. Our gratitude goes to the SRC Program Chair Dr. John Kim, Utica College, New York, for managing the Student Research Competition Program; the Publication Chair, Dr. Hossain Shahriar, Kennesaw State University, for his tremendous effort in putting together the conference proceedings; the Posters Program Chair, Dr. Chih-Cheng Hung, Kennesaw State University, for his hard work to make a successful Posters Program. Special thanks go to our Program Chairs, Dr. Dongwan Shin, New Mexico Tech, and Dr. Maria Lencastre, University of Pernambuco, Brazil, for coordinating and bringing together an excellent Technical Program.

Again, we welcome you to SAC 2017 and the beautiful city of Marrakesh, Morocco. We hope you enjoy the SAC 2017 conference and your stay in Marrakesh. Next year, we invite you to participate in SAC 2018 to be held in Biarritz, France. The conference will be hosted by Université de Pau et des Pays de l'Adour (UPPA), Bayonne, France.

## Program Chairs Message

**Dongwan Shin**

*New Mexico Tech, New Mexico, USA*

**Maria Lencastre**

*University of Pernambuco, Recife, Brazil*

Welcome to the 32nd International Symposium on Applied Computing (SAC 2017). For the past 31 years, SAC has become a major international venue for researchers and practitioners to convene and share ideas on recent developments in a variety of applied areas of computer science and 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 its own program committees, carrying out blind reviews according to the ACM guidelines, and finally selecting highly qualified papers for the Track. In addition, since its inception nine years ago, the Poster Program at SAC has become a tradition, and this year again the Poster will be an integral part of the Technical Program at SAC 2017.

The Call for Track Proposals was open in 2016 and after a thorough review of the proposals, 38 Tracks were finally accepted for SAC 2017. The review and selection 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 992 final paper submissions from 55 different countries. The submitted papers underwent the blind review process and 232 submissions were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium: the overall final acceptance rate for SAC 2017 is 23.38%. In addition, upon the recommendation of the TCs, 52 papers were invited for inclusion in the Conference Proceedings and presentation as posters during the Posters Program session. 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. 50 submissions were received and finally 17 student research papers were accepted for the SRC program: the SRC acceptance rate was 34%.

The Technical Program of SAC 2017 is made possible through the hard work of many people from the scientific, especially applied computing, community who have volunteered and committed many hours to make it a success. Much credit goes to all Track Chairs for making SAC 2017 Technical Sessions a huge success. Some of the popular Tracks had unprecedented submissions and having three blind reviews for each paper was certainly a major challenge. Tracks are organized into five 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 2017 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 keynote speaker, posters chair, SRC chair, track chairs, reviewers, technical program committee members, session chairs, presenters, and all the attendees. We wish you all a pleasant stay in Marrakesh, and we hope you will have a great time at SAC 2017 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 exciting news that the 33rd ACM Symposium on Applied Computing (SAC 2018) will be held in the historic city of Biarritz, France. We hope to see you all at SAC 2018.

---

## SAC 2017 Themes

This year SAC tracks are divided into five themes: tracks with relevant topics are grouped into a theme, and a single room is assigned for one theme for oral presentation. Hence related tracks will take place sequentially in the same room in most cases, so as to promote sharing and cross-fertilization of ideas for the whole audience of a theme. Check the program schedule for details. The five themes of SAC 2017 are listed below:

**(AIA) AI and Agents:** Tracks: BIO, CASM, CIVIA, CoCo, COMBI, HCI, IRMAS, SWA

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

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

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

**(SSS) System Software and Security:** Tracks: CPS, EMBS, OOPS, OS, PAPP, PL, RS, RST, SEC, SiSoS, SP, TRECK

## Keynote Speakers

Tuesday April 4, 2017 9:25 - 10:40AM

**Dr. Armin R. Mikler**

Department of Computer Science and Engineering  
University of North Texas  
Denton, TX USA

### *RE-PLAN: A Computational Framework for Response Plan Design and Analysis*

#### Abstract

Emergencies stemming from the accidental or deliberate release of harmful biochemical substances demand timely response to minimize potential harm to affected populations. Therefore, local governments are required to maintain solid, functional plans for receiving medical countermeasures (MCMs) from the Strategic National Stockpile (SNS) and providing them to populations in need within short, federally-mandated timeframes.

Determining optimal placement of ad-hoc clinics purposed for the distribution of MCMs to target populations requires the integration of data representing geographic, demographic, and

transportation characteristics. Therefore, the design and analysis of response plans represent a complex task necessitating the availability of computational tools. To this end, the RE-PLAN Framework has been developed to facilitate data driven response plan design and analysis while streamlining the planning process. This research has been supported by the National Institutes of Health (NIH 1R01LM011647-01 and NIH 1R15LM010804-01).

This talk will provide the highlights of RE-PLAN, a computational framework for placing facilities based on different optimization criteria. Further, computational methods to address plan limitations and access disparities resulting from specific demographic characteristics such as the distribution vulnerabilities in the population will be explored. Time permitting, the presentation will conclude with a demonstration of response plan development using the RE-PLAN system.

#### Speaker's Bio

In 1997, Professor Mikler joined the Department of Computer Science at the University of North Texas with a PhD from Iowa State University. With the help of four courageous undergraduate students, he established the Network Research Laboratory (NRL), and with it, UNT's first Beowulf Cluster to facilitate complex simulations in support of the group's research on Computer Network Protocols and Distributed Systems. In addition to the inaugural group of students, who completed their MS theses under Dr. Mikler's guidance, the laboratory attracted many graduate students with interest in experimental design of protocols and algorithms for large distributed computing infrastructures. In 2004, Dr. Mikler started to gradually move into a new field of research, which was motivated by the need to facilitate advances in the field of Public Health and Epidemiology through computational methods. He established the Computational Epidemiology Research Laboratory (CERL) with focus on the development of computational methodology to model and simulate the spread of diseases and the design and analysis of bio-emergency response plans. Together with colleagues in Biology and Geography, Dr. Mikler established the truly interdisciplinary Center for Computational Epidemiology and Response Analysis (CeCERA) after receiving federal funds from the US Department of Health and Human Services. Today, CeCERA is the home of over 15 PhD students who are conducting research in a variety of areas related to Computational Epidemiology, Ecology, Social Network Analysis, and High Performance Computing under Dr. Mikler's mentorship. Recent graduates of his research group are using their expertise in Computational Epidemiology as faculty members at different universities and as

---

researchers at National Laboratories. Dr. Mikler's research on response plan design and analysis is supported by the Texas Department of State Health Services (DSHS), the National Science Foundation (NSF), and the National Institutes of Health (NIH). He has supervised over 30 PhD and MS theses and has published over 70 research articles related to a range of topics, including distributed systems, networking, computational epidemiology, and response plan design and analysis.

## Other Activities

**SIGAPP Annual Business Meeting:** Tuesday April 4, from 18:10 to 19:00 (Location: Curcuma Room). Open to everyone.

**SIGAPP Reception:** Tuesday April 4, from 19:30 to 21:00 (Location: Pool Deck). Open to everyone.

**Future SAC Organization Meeting:** Wednesday April 5, from 18:10 to 19:00 (Location: Curcuma Room). Open to everyone.

**Track Chairs Business Meeting:** Thursday April 6, from 18:10 to 19:00 (Location: Location: Curcuma Room). Open for the Organizing Committee and (potential) Track Chairs.

**SAC Banquet:** Thursday April 6, from 20:00 to 22:00 (Location: Cannelle I & II). Open for Banquet Ticket holders. See your tickets for full details.

**SAC Best Papers/Best Posters Award:** Thursday April 6. 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 (Location: Foyer Patio). Medals and certificates will be given to the top three winners during the SAC Banquet.



**Tuesday April 4, 2017**

**TUE 9:25–10:40**  
**Room: Cannelle I & II**

**Keynote Address**  
Dr. Armin R. Mikler  
*See page 5 for details.*

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

**TUE 11:10 – 12:50**  
**Room: Cannelle I & II**

**(BIO) Bioinformatics**  
**Session Chair:** Juan Manuel Corchado Rodriguez,  
University of Salamanca, Spain

**(COMBI) Advances in COMputational  
Biomedical Imaging**  
**Session Chair:** Mohammed El Hassouni, Mohammed V,  
University in Rabat, Morocco

**LIF: A Method to Infer Disease-Gene Relationships  
using Literature Data and Impact Factor**  
Jeongwoo Kim, Jinyong Lee, Heechul Kang, Chunghun Kim,  
Sanghyun Park

**A Profile-Based Probabilistic Approach for the  
Detection of Anomalies in the Cytochrome C Oxidase  
I Amplicon Sequence**  
Mahdi Belcaid, Guylaine Poisson

**Inference of Regulatory Networks with MCMC  
sampler guided by Mutual Information**  
Nilzair M. Barreto, Karina S. Machado, Adriano V. Werhli

**Variational Non Rigid Registration with  
Bregman Divergences**  
Daniela P.L. Ferreira, Eraldo Ribeiro, Celia A.Z. Barcelos

**Fully Anisotropic Morlet Transform for the Study of  
the Trabecular Bone Texture Variations**  
Hind Oulhaj, Mohammed El Hassouni, Aouatif Amine,  
Mohammed Rziza, Rachid Jennane

**TUE 11:10 – 12:50**  
**Room: Curcuma**

**(NET) Networking**  
**Session Chair:** Rodrigo Coelho,  
Technische Universität Kaiserslautern, Germany

**Prediction of the Domain Name System (DNS)  
Quality Attributes**  
Marwan Radwan, Reiko Heckel

**Upper Bound Computation for Buffer Backlog on  
AFDX Networks with Multiple Priority Virtual Links**  
Rodrigo Coelho, Gerhard Fohler, Jean-Luc Scharbarg

**RALL - Routing-Aware Of Path Length, Link Quality  
and Traffic Load for Wireless Sensor Networks**  
Vinicius N. Medeiros, Paulo Brito, Bruno Silvestre, Vinicius Borges

**Mathematical Model for a Collaborative  
Indoor Position System (IPS) and Movement  
Detection of Devices within IoT Environment**  
D.R. Vasconcelos, F.L.R. Pimentel, R.M.C. Andrade, J.N. Souza

**Phantom Walkabouts in Wireless Sensor Networks**  
Chen Gu, Matthew Bradbury, Arshad Jhumka

**TUE 11:10 – 12:50**  
**Room: Cumin**

**(DS) Data Streams**  
**Session Chair:** Albert Bifet,  
Université Paris-Saclay, France

**Fast Mutual Information Computation for  
Dependency-Monitoring on Data Streams**  
Jonathan Boidol, Andreas Hapfelmeier

**Feature Ranking in Hoeffding Algorithms  
for Regression**  
João Duarte, João Gama

**Enhanced Situation Space Mining for Data Streams**  
Yisroel Mirsky, Tal Halpern, Rishabh Upadhyay, Sivan Toledo,  
Yuval Elovici

**Graph-Based Clustering with DRepStream**  
Ross Callister, Mihai Lazarescu, Duc-Son Pham

**Modeling Discrete Dynamic Topics**  
Seyed Ali Bahrainian, Ida Mele, Fabio Crestani



**TUE 11:10 – 12:50**  
**Room: Coriandre I & II**

**(SATTA) Software Architecture: Theory,  
Technology, & Applications**

**Session Chair:** Rafael Capilla,  
University Rey Juan Carlos, Spain

**Exploring Anomaly Detection in Systems of Systems**  
Tommaso Zoppi, Andrea Ceccarelli, Andrea Bondavalli

**Knowledge based Decision Framework for  
Architecting Complex Systems**  
Ramakrishnan Raman, Meenakshi D'Souza

**Reconfigurable Service-Based Architecture based on  
Variability Description**  
Seza Adjoyan, Abdelhak-Djamel Seriai

**Collaborative Development of Feature Models  
and Evaluation of Performance Bounds**  
Paolo Arcaini, Catia Trubiani

**Formal Verification of Storm Topologies  
through D-VerT**  
Francesco Marconi, Marcello M. Bersani, Matteo Rossi

**TUE 11:10 – 12:50**  
**Room: Ras El Hanout**

**(SiSoS) Software-intensive  
Systems-of-Systems**

**Session Chair:** Khalil Drira, LAAS-CNRS,  
University of Toulouse, France

**A Process to Establish, Model and Validate Missions  
of Systems-of-Systems in Reference Architectures**  
Lina Garcés, Elisa Yumi Nakagawa

**IoTA-MD: A Model-Driven Approach for  
Applying QoS Attributes in the Development  
of the IoT Systems**

Marcelo Pitanga Alves, Flávia C. Delicato, Paulo F. Pires

**Iterative Multi-Scale Modeling of Software-Intensive  
Systems of Systems Architectures**  
Ilhem Khlif, Mohamed Hadj Kacem, Ahmed Hadj Kacem

**A Tool for Modeling SoS Architectures  
using Bigraphs**

Amal Gassara, Ismael Bouassida Rodriguez, Mohamed Jmaiel

**System of Systems Software Architecture  
Description using the ISO/IEC/IEEE 42010 Standard**  
Mariam Chaabane, Ismail Bouassida Rodriguez, Mohamed Jmaiel

**TUE 12:50 – 14:20**

**Lunch Break**  
(Lila Restaurant)

**TUE 14:30 – 18:10**

**SRC Posters Exhibition**  
**FOYER PATIO**

*See page 20 for details.*

**TUE 14:20 – 16:00**  
**Room: Cannelle I&II**

**(IRMAS-1) Intelligent Robotics and  
Multi-Agent Systems**

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

**A Versatile High-Performance Visual  
Fiducial Marker Detection System  
with Scalable Identity Encoding**

Peter Lightbody, Tomáš Krajník, Marc Hanheide

**Predicting Coordinated Group Movements of  
Sharks with Limited Observations using AUVs**

Cherie Ho, Kimberly Joly, Andrew Nosal,  
Christopher Lowe, Christopher Clark

**Forecasting Battery State of Charge for  
Robot Missions**

Ameer Hamza, Nora Ayanian

**An Asynchronous Distributed Constraint  
Optimization Approach to Multi-Robot Path  
Planning with Complex Constraints**

Alberto Viseras, Valentina Karolj, Luis Merino

**TUE 14:20 – 16:00**  
**Room: Curcuma**

**(MCA-1) Mobile Computing and  
Applications**

**Session Chair:** Alfredo Cuzzocrea,  
University of Trieste and ICAR-CNR, Italy

**Flamingo: A Framework for Smartphone  
Security Context Management**

Md Shahrear Iqbal, Mohammad Zulkernine

**Secure Policy-based Device-to-Device  
Offloading for Mobile Applications**

Andreas Reiter

**Observation-Based Detection of Femtocell Attacks in  
Wireless Mobile Networks**

Mohamed Jacem Guezguez, Slim Rekhis, Nouredine Boudriga

**Cyber Security Patrol – Detecting Fake  
and Vulnerable WiFi-Enabled Printers**

Jinghui Toh, Muhammad Hatib, Omer Porzeczanski, Yuval Elovici

**TUE 14:20 – 16:00  
Room: Cumin**

**(SONAMA-1) Social Network and  
Media Analysis**

**Session Chair:** Mohamed Bouguessa,  
University of Quebec at Montreal, Canada

**A Gold-Standard Social Media Corpus  
for Urban Issues**

Maxwell Oliveira, Cláudio Baptista, Cláudio Campelo, Michela Bertolotto

**Identifying Authoritative Researchers in Digital  
Libraries using External a Priori Knowledge**

B. de La Robertie, Y. Pitarch, A. Takasu, O. Teste

**Understanding How User Activities are  
Related to Profile Images on Twitter  
through Regression Analysis**

Tomu Tominaga, Yoshinori Hijikata

**TSViz: A Data Stream Architecture to Online Collect,  
Analyze, and Visualize Tweets**

Ricardo A. Rios, Paulo A. Pagliosa, Renato Ishii, Rodrigo F. Mello

**Using Stratified Privacy for Personal Reputation  
Defense in Online Social Networks**

Hasan M. Jamil

**TUE 14:20 – 16:00  
Room: Coriandre I & II**

**(SVT-1) Software Verification and Testing**

**Session Chair:** Mercedes G. Merayo Universidad  
Complutense de Madrid, Spain

**GiGAn: Evolutionary Mutation Testing for  
C++ Object-Oriented Systems**

Pedro Delgado-Pérez, Inmaculada Medina-Bulo, Sergio Segura,  
Antonio García-Domínguez, Juan José Domínguez-Jiménez

**An Empirical Study on the Application of  
Mutation Testing for a Safety-Critical  
Industrial Software System**

Rudolf Ramler, Thomas Wetzlmaier, Claus Klammer

**Mutation Tools for Java**

András Márki, Birgitta Lindström

**Moving from Event-B to Probabilistic Event-B**

Mohamed Amine Aouadhi, Benoît Delahaye, Arnaud Lanoix

**Failure History Data-based Test Case Prioritization  
for Effective Regression Test**

Jeongho Kim, Hohyeon Jeong, Eunseok Lee

**TUE 14:20 – 16:00  
Room: Ras El Hanout**

**(IoT) Internet of Things**

**Session Chair:** Seong-je Cho,  
Dankook University, Korea

**An Evaluation of Service Discovery Protocols  
in the Internet of Things**

Christian Cabrera, Andrei Palade, Siobhán Clarke

**Sensing by Proxy in Buildings with Agglomerative  
Clustering of Indoor Temperature Movements**

Daoyuan Li, Tegawendé F. Bissyandé, Jacques Klein, Yves Le Traon

**From IoT Big Data to IoT Big Services**

Amir Taherkordi, Frank Eliassen, Geir Horn

**Knowledge Discovery and Sharing in the IoT:  
The Physical Semantic Web Vision**

Michele Ruta, Floriano Scioscia, Saverio Ieva, Giuseppe Loseto,  
Filippo Gramegna, Agnese Pinto, Eugenio Di Sciascio

**Distributed Algorithm for Traffic Dissemination in  
Manhattan Networks with Optimal Routing-Time**

Sayan Sarma, Koushik Sinha, Goutam Chakraborty, Bhabani Sinha

**TUE 16:30 – 18:10  
Room: Cannelle I & II**

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

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

**Path Efficient Level Set Estimation for  
Mobile Sensors**

Lorenzo Bottarelli, Jason Blum, Manuele Bicego, Alessandro Farinelli

**Cloud-Based Cooperative Navigation for Mobile  
Service Robots in Dynamic Industrial Environments**

Jannik Abbenseth, Felipe Lopez, Christian Henkel, Stefan Dörr

**Exportation to the Cloud of Distributed Robotic  
Tasks Implemented in ROS**

João Rosa, Rui P. Rocha

**Multicriteria Optimization in Distributed Micro-  
Conveying Platform**

Hakim Mabed, Eugen Dedu, Haithem Skima

**Efficient Scene Encoding for Programmable Matter  
Self-Reconfiguration Algorithms**

Thadeu Tucci, Benoît Piranda, Julien Bourgeois

**TUE 16:30 – 18:10**  
**Room: Curcuma**

**(MCA-2) Mobile Computing  
and Applications**

**Session Chair:** Ali Idri, University Mohamed V, Morocco

**An Effective and Efficient Hybrid Scan Matching  
Algorithm for Mobile Object Applications**  
Kristijan Lenac, Alfredo Cuzzocrea, Enzo Mumolo

**BaaS (Bluetooth-as-a-Sensor): Conception, Design  
and Implementation on Mobile Platforms**  
Douglas Lautner, Xiayu Hua, Scott DeBates, Miao Song, Jagat Shah,  
Shangping Ren

**MOMOS-MT: Mobile Monophonic System for  
Music Transcription**

Munir Makhmutov, Joseph Brown, Manuel Mazzara, Leonard  
Johard

**Requirements for a Mobile Personal Health Record to  
Improve Cardiovascular Healthcare Services**  
Sofia Ouhbi, Ali Idri, Rachid Hakmi, Halima Benjelloun,  
José Alemán, Ambrosio Toval

**TUE 16:30 – 18:10**  
**Room: Cumin**

**(SONAMA-2) Social Network  
and Media Analysis**

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

**Marketing Campaign Targeting using  
Bridge Extraction**

Prokopios Gryllos, Christos Makris, Pantelis Vikatos

**Evolutionary Role Mining in Complex Networks  
by Ensemble Clustering**

Sarvenaz Choobdar, Pedro Ribeiro, Fernando Silva

**Incremental Maximum Flow Computation  
on Evolving Networks**

Sergio Greco, Cristian Molinaro, Chiara Pulice, Ximena Quintana

**Survival Analysis for Modeling Critical  
Events that Communities May Undergo  
in Dynamic Social Networks**

Etienne Gae Tajeuna, Mohamed Bouguessa, Shengrui Wang

**Irony Detection on Microposts with  
Limited Set of Features**

Hande Taslioglu, Pinar Karagoz

**TUE 16:30 – 18:10**  
**Room: Coriandre I&II**

**(SVT-2) Software Verification and Testing**

**Session Chair:** Yliès Falcone,  
Université Grenoble Alpes, Inria, France

**Runtime Verification of LTL on Lossy Traces**  
Yogi Joshi, Guy Martin Tchamgoue, Sebastian Fischmeister

**CARET Model Checking for Pushdown Systems**  
Huu-Vu Nguyen, Tayssir Touili

**Generating Runtime Verification Specifications  
based on Static Code Analysis Alerts**  
Yunus Kılıç, Hasan Sözer

**Specification, Design and Verification of an  
Accountability-Aware Surveillance Protocol**  
Thibaud Antignac, Mukelabai Mukelabai, Gerardo Schneider

**Statistical Model Checking of an Energy-Saving  
Cyber-Physical System in the Railway Domain**  
Davide Basile, Felicita Di Giandomenico, Stefania Gnesi

**TUE 16:30–18:10**  
**Room: Ras El Hanout**

**(CPS) Cyber-Physical Systems**

**Session Chair:** Huan Li,  
Beihang University, China

**SmartSen: Smart Sensing for Enhancing Real-time  
Activity Recognition in Phone-based Interactive CPS**  
Huan Li, Qinghua Yu, Krithi Ramamritham, Xiaotao Liu

**Multi-CNN and Decision Tree based Driving  
Behavior Evaluation**

Shouyi Yin, Jinjin Duan, Peng Ouyang, Leibo Liu, Shaojun Wei

**Resource Constrained Real-time Lane-  
Vehicle Detection for Advanced Driver  
Assistance on Mobile Devices**

Tianchen Wang, Kangli Hao, Chun-chen Liu, Yiyu Shi

**Self-Adaptive Control in Cyber-Physical Systems:  
The Autonomous Train Experiment**

Alexander Svae, Amir Taherkordi, Peter Herrmann, Jan Olaf Blech

**Towards Trusted Execution of Multi-Modal  
Continuous Authentication Schemes**

Carlton Shepherd, Raja Akram, Konstantinos Markantonakis

**Wednesday April 5, 2017**

**WED 9:00 – 10:40**

**Room: Cannelle I**

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

**Session Chair:** Junping Sun,  
Nova Southeastern University, USA

**Similarity Search through One-  
Dimensional Embeddings**

Humberto Razente, Rafael L. Bernardes Lima, Maria C. Barioni

**A Log-structured Buffer for Database  
Systems using Non-volatile Memory**

Yongseok Son, Hara Kang, Heon Young Yeom, Hyuck Han

**Numerical Similarity-aware Data Partitioning  
for Recommendations as a Service**

Ting-Ting Yang, Hsueh-Wen Tseng

**Processing Skyline Queries in Temporal Databases**

Christos Kalyvas, Theodoros Tzouramanis, Yannis Manolopoulos

**One Index to Dominate them All:  
DomainIndexes for improving Queries  
Across Multiple Tables**

Paulo Oliveira, Lucas Scabora, Caetano Traina Jr., Daniel S. Kaster

**WED 9:00 – 10:40**

**Room: Cannelle II**

**(DM-1) Data Mining**

**Session Chair:** Hasan Jamil, University of Idaho, USA

**A Descriptive Clustering Approach to the Analysis of  
Quantitative Business-Process Deviances**

Francesco Folino, Massimo Guarascio, Luigi Pontieri

**Self-Tuning Techniques for Large Scale Cluster  
Analysis on Textual Data Collections**

Evelina Di Corso, Tania Cerquitelli, Francesco Ventura

**Towards Transforming FDA Adverse Event  
Narratives into Actionable Structured Data  
for Improved Pharmacovigilance**

Susmitha Wunnava, Xiao Qin, Tabassum Kakar, Vimig Socrates,  
Amber Wallace, Elke Rundensteiner

**Feature Extraction for the Author Name  
Disambiguation Problem in a Bibliographic Database**

Jorge Silva, Fernando Silva

**Hierarchical Multi-Label Classification  
with Chained Neural Networks**

Jónatas Wehrmann, Rodrigo Barros, Silvia Dóres, Ricardo Cerri

**WED 9:00 – 10:40**

**Room: Curcuma**

**(DADS-1) Dependable, Adaptive, &  
Trustworthy Distributed Systems**

**Session Chair:** Rui Oliveira,  
Universidade do Minho, Portugal

**ICE – Self-Configuration of Information  
Processing in Heterogeneous Agent Teams**

Stefan Niemczyk, Stephan Opfer, Nugroho Fredriani, Kurt Geihs

**Evidence-Based Security Configurations  
for Cloud Datastores**

Frank Pallas, David Bermbach, Steffen Müller, Stefan Tai

**Deconstructing Source Location Privacy-  
aware Routing Protocols**

Arshad Jhumka, Matthew Bradbury

**Choreographing Cyber-Physical Distributed  
Control Systems for the Energy Sector**

Hugo López, Kai Heussen

**Handling Bitcoin Conflicts Through a  
Glimpse of Structure**

Thibaut Lajoie-Mazenc, Romaric Ludinard, Emmanuelle Anceaume

**WED 9:00 – 10:40**

**Room: Coriandre I & II**

**(SWA-1) Semantic Web and Applications**

**Session Chair:** Soon Ae Chun, City Univ. of New York, USA

**A Semantic Federated Search Engine for Domain-  
Specific Document Retrieval**

Mauro Dragoni, Andi Rexha, Hermann Ziak, Roman Kern

**Utilizing Wikipedia Knowledge in Open Directory  
Project-based Text Classification**

HaeYong Shin, GeunJae Lee, Woo-Jong Ryu, SangKeun Lee

**A Semantic-enabled Platform for Supporting  
Healthy Lifestyle**

Mauro Dragoni, Tania Bailoni, Claudio Eccher,  
Marco Guerini, Rosa Maimone

**Influence of Semantic Similarity Measures in  
Ontology Cross-language Mappings**

Juliana Medeiros Destro, Julio Cesar dos Reis, Ariadne Maria Brito  
Rizzoni Carvalho, Ivan Luiz Marques Ricarte

**Schema-Summarization in Linked-Data-Based  
feature Selection for Recommender Systems**

Azzurra Ragone, Paolo Tomeo, Corrado Magarelli, Tommaso Di  
Noia, Matteo Palmonari, Andrea Maurino, Eugenio Di Sciascio

**WED 10:40 – 11:10**

**Coffee Break**

**WED 10:40 – 12:50**

**Poster Session I**

**(FOYER PATIO)**

Posters of the following Tracks: *BIO, CASM, CC, CIVIA, CoCo, COMBI, DADS, HCI, IoT, IRMAS, MCA, NET, WCN, SWA, WT* (See page xx for detailed list of Posters)

**WED 11:10 – 12:50**

**Room: Cannelle I**

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

**Session Chair:** Junping Sun,  
Nova Southeastern University, USA

**(CoCo) Cognitive Computing**

**Session Chair:** Mauro Dragoni/Marco Rospocher,  
Fondazione Bruno Kessler, Italy

**Exploiting Photo Location and Direction for Clustering-based Points-of-Interest Discovery**

Yuri Lacerda, Leandro Marinho, Cláudio. Baptista,  
Chiara Renso, Raffaele Perego

**Learning and Reasoning in Logic Tensor Networks: Theory and Application to Semantic Image Interpretation**

Luciano Serafini, Ivan Donadello, Artur d'Avila Garcez

**Deep Learning Traffic Sign Detection, Recognition and Augmentation**

Lotfi Abdi, Aref Meddeb

**Gender-based Multimodal Deception Detection**

Mohamed Abouelenien, Verónica -Rosas,  
Bohan Zhao, Rada Mihalcea, Mihai Burzo

**Linking Knowledge Bases to Social Media Profiles**

Yaroslav Nechaev, Francesco Corcoglioniti, Claudio Giuliano

**WED 11:10 – 12:50**

**Room: Cannelle II**

**(DM-2) Data Mining**

**Session Chair:** Alfredo Cuzzocrea,  
University of Trieste, Italy

**Discovering Spatial Contrast and Common Sets with Statistically Significant Co-location Patterns**

Mohomed Shazan Mohamed Jabbar, Osmar R. Zaiane, Alvaro Osornio-Vargas

**Exploiting Implicit and Explicit Signed Trust Relationships for Effective Recommendations**

Irfan Ali, Jiwon Hong, Sang-Wook Kim

**MILES: Multiclass Imbalanced Learning in Ensembles through Selective Sampling**

Ali Azari, Vandana P. Janeja, Scott Levin

**A Novel Ensemble Approach on Regionalized Neural Networks for Brain Disorder Prediction**

Lei Zheng, Jingyuan Zhang, Bokai Cao, Philip S. Yu, Ann Ragin

**WED 11:10 – 12:50**

**Room: Curcuma**

**(DADS-2) Dependable, Adaptive, & Trustworthy Distributed Systems**

**Session Chair:** Rui Oliveira,  
Universidade do Minho, Portugal

**(BPMEA-1) Business Process Management and Enterprise Architecture**

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

**Automatic Generation of Policies to Support Elastic Scaling in Cloud Environments**

Richard Gil Martinez, Antónia Lopes, Luis Rodrigues

**Performance Trade-Offs on a Secure Multi-Party Relational Database**

Rogério Pontes, Mário Pinto, Manuel Barbosa, Ricardo Vilaça,  
Miguel Matos, Rui Oliveira

**Modeling and Handling Duration Constraints in BPMN 2.0**

Carlo Combi, Barbara Oliboni, Francesca Zerbatò

**Service-Oriented Domain and Business Process Modelling**

Gianna Reggio, Maurizio Leotta, Diego Clerissi, Filippo Ricca

**Reduction Techniques for Efficient Behavioral Model Checking in Adaptive Case Management**

Christoph Czepa, Huy Tran, Uwe Zdun, Thanh Tran, Erhard Weiss,  
Christoph Ruhsam



**WED 11:10 – 12:50**  
**Room: Coriandre I & II**

**(SWA-2) Semantic Web and Applications**

**Session Chair:** Soon Ae Chun, City University of  
New York, USA

**(SP) Software Platforms**

**Session Chair:** Jinman Jung,  
Hannam University,  
South Korea

**Bridging Context and Data Warehouses  
through Ontologies**

Okba Barkat, Selma khouri, Ladjel Bellatreche, Narhimene Boustia

**Reasoning and Discovering Novel Treatments  
in Linked Social Health Records**

Paolo Cappellari, Soon Ae Chun, Dennis Shpitz

**TransReport: Collaborative Supervision of the  
Public Transportation**

Raul S. Ferreira, Renan Prata, Carlos Eduardo Barbosa, Jano  
Moreira de Souza, Vinicius Mororo, Kleyton Pontes Cotta

**MetricStore Repository: On the Leveraging  
of Performance Metrics in Databases**

Abdelkader Ouared, Yassine Ouhammou, Ladjel Bellatreche

**Design and Implementation of a Message-Service  
Oriented Middleware for Fog of Things Platforms**

Cássio Prazeres, Jurandir Barbosa, Leandro Andrade,  
Martin Serrano

**WED 12:50 – 14:20**

**Lunch Break**  
(Lila Restaurant)

**WED 14:20 – 16:00**  
**Room: Cannelle I**

**(SOAP) Service-oriented Architecture &  
Programming**

**Session Chair:** Maurice ter Beek, ISTI CNR, Pisa, Italy

**(KRR-1) Knowledge Representation &  
Reasoning**

**Session Chair:** Stefano Bistarelli,  
Universita' di Perugia, Italy

**Interleaving Sessions with Predicates**  
Peter Thiemann

**Semantic Similarity based Web Service  
Composition Framework**

Ahmed Abid, Nizar Messai, Mohsen Rouached, Mohamed Abid,  
Thomas Devogele

**Petri Nets and Dynamic Causality for  
Service-Oriented Computations**

Giovanni Casu, G. Michele Pinna

**Compatibility Flooding: Measuring Interaction  
of Services Interfaces**

Meriem Ouederni, Uli Fahrenberg, Axel Legay, Gwen Salaün

**Probabilistic Quantitative Temporal Reasoning**

Paolo Terenziani, Antonella Andolina

**WED 14:20 – 16:00**  
**Room: Cannelle II**

**(IAR-1) Information Access and Retrieval**

**Session Chair:** Gloria Bordogna,  
CNR IREA Consiglio Nazionale delle Ricerche, Italy

**Fixed Budget Pooling Strategies based on  
Fusion Methods**

Aldo Lipani, Mihai Lupu, Joao Palotti, Guido Zuccon, Allan Hanbury

**Emphasizing Temporal-based User Profile Modeling  
in the Context of Session Search**

Ameni Kacem, Mohand Boughanem, Rim Faiz

**Part-of-speech Tagging for Web Search Queries  
using a Large-scale Web Corpus**

Atsushi Keyaki, Jun Miyazaki

**ToPI - An approach to Identify Places of Interest  
using Geo-Tagged Images**

Jean R. Ponciano, José Gustavo S. Paiva, Denise Guliato

**ES-Rank: Evolution Strategy Learning to  
Rank Approach**

Osman Ali Sadek Ibrahim, Dario Landa-Silva

**WED 14:20 – 16:00**  
**Room: Curcuma**

**(BPMEA-2) Business Process Management  
and Enterprise Architecture**

**Session Chair:** Christoph Czepa,  
University of Vienna, Austria

**Optimal Acquisition of Input Data for Decision  
Taking in Business Processes**

Ekaterina Bazhenova, Mathias Weske

**Lightweight Approach for Seamless Modeling of Process Flows in Case Management Models**

Christoph Czepa, Huy Tran, Uwe Zdun, Thanh Tran, Erhard Weiss, Christoph Ruhsam

**Recommendation Patterns for Business Process Imperative Modeling**

Mateus Barcellos Costa, Dalila Tanzalit

**Driving Time-dependent Paths in Clinical BPMN Processes**

Carlo Combi, Pietro Sala, Francesca Zerbato

**Declarative Process Mining for DCR Graphs**

Soren Debois, Thomas Hildebrandt, PawLaursen, Kenneth Ulrik

**WED 14:20 – 16:00**

**Room: Coriandre I &II**

**(RE-1) Requirement Engineering**

Session Chair: Fabiano Dalpiaz,  
Utrecht University, The Netherlands

**Self-Adaptive Quality Requirement Elicitation Process for Legacy Systems: A Case Study in HealthCare**

Nour Ali, Alfonso Martínez, Lorena Pérez, Angelina Espinoza

**A Gamification Requirements Catalog for Educational Software: Results from a Systematic Literature Review and a Survey with Experts**

Mariana Peixoto, Carla Silva

**An Approach based on Design Practices to Specify Requirements in Agile Projects**

Juliana Medeiros, Alexandre Vasconcelos, Miguel Goulão, Carla Silva, João Araújo

**i\* in Practice: Identifying Frequent Problems in its Application**

Karina Abad, Wilson Pérez, Juan Pablo Carvallo, Xavier Franch

**A Semantic Model for Action-based Adaptive Security**

Sara Sartoli, Akbar Siami Namin

**WED 16:00 – 16:30**

**Coffee Break**

**WED 16:00 – 18:10**

**Poster Session II**

**FOYER PATIO**

Posters of the following Tracks: *CPS, DM, DS, DTTA, IAR, OOPS, OS, PAPP, PL, RS, SATTa, SE, SiSoS, SONAMA, SP*  
(See page 22 for detailed list of Posters)

**WED 16:30 – 18:10**

**Room: Cannelle I**

**(KRR-2) Knowledge Representation and Reasoning**

Session Chair: Stefano Bistarelli,  
Universita' di Perugia, Italy

**Temporal Reasoning Techniques for the Analysis of Interactions in the Treatment of Comorbid Patients**

Luca Anselma, Luca Piovesan, Paolo Terenziani

**A Reconstruction of Default Conditionals within Epistemic Logic**

Costas D. Koutras, Christos Moyzes, Christos Rantsoudis

**Decidability and Complexity of Threshold Description Logics Induced by Concept Similarity Measures**

Franz Baader, Oliver Fernández Gil

**Reasoning by Cases in Structured Argumentation**

Mathieu Beirlaen, Jesse Heynink, Christian Straßer

**Propagating Degrees of Truth on an Argumentation Framework: an Abstract Account of Fuzzy Argumentation**

Pierpaolo Dondio

**Analysing the Effect of Candidate Selection and Instance Ordering in a Realtime Algorithm Configuration System**

Tadhg Fitzgerald, Barry O'Sullivan



**WED 16:30 – 18:10**  
**Room: Cannelle II**

**(IAR) Information Access and Retrieval**

**Session Chair:** Gabriella Pasi, Università degli Studi di Milano Bicocca, Italy

**(PL) Programming Language**

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

**Decaying Inverted Quadtree: Index Structure for Supporting Spatio-Temporal-Keyword Query Processing of Microblog Data**  
Sehwa Park, Seog Park

**Business Apps with MAML: A Model-Driven Approach to Process-Oriented Mobile App Development**  
Christoph Rieger

**Tarski: A Platform for Automated Analysis of Dynamically Configurable Traceability Semantics**  
Ferhat Erata, Moharram Challenger, Bedir Tekinerdogan, Anne Monceaux, Eray Tüzün, Geylani Kardaş

**Code Spartanization: One Rational Approach for Resolving Religious Style Wars**  
Yossi Gil, Matteo Orrù

**LARA as a Language-Independent Aspect-Oriented Programming Approach**  
Pedro Pinto, Tiago Carvalho, João Bispo, João Cardoso

**WED 16:30 – 18:10**  
**Room: Curcuma**

**(CASM) Collective Adaptive Systems and Middleware**

**Session Chair:** Maurice ter Beek, ISTI CNR, Pisa, Italy

**SmartOrch: An Adaptive Orchestration System for Human-Machine Collectives**  
Michael Rovatsos, Dimitrios Diochnos, Zhenyu Wen, Sofia Ceppi, Pavlos Andreadis

**Coordinated Execution of Adaptation Operations in Distributed Role-based Software Systems**  
Martin Weißbach, Thomas Springer

**Efficient Compensation Handling via Subjective Updates**  
Jovana Dedeić, Jovanka Pantović, Jorge A. Pérez

**Doctrine based Multi-Resolution HLA Distributed Simulation**  
Ricardo L. Paul, Raul C. Nunes, Vanderlan D. Oliveira, Diogo Kunde

**WED 16:30 – 18:10**  
**Room: Coriandre I & II**

**(RE-2) Requirement Engineering**

**Session Chair:** Jaelson Castro, Universidade Federal de Pernambuco, Brazil

**(WT) Web Technologies**

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

**Trust in Requirements Elicitation: How Does it Build, and Why Does it Matter to Requirements Engineers?**  
Corentin Burnay, Monique Snoeck

**A Linked Open Data Schema-Driven Approach for Top-N Recommendations**  
Thomas Wever, Flavius Frasincaer

**WebRTC: Your Privacy is at Risk**  
Andreas Reiter, Alexander Marsalek

**Automatic Identification of Client-Side JavaScript Libraries in Web Applications**  
Hanyang Cao, Yuxian Peng, Jing Jiang, Jean-Rémy Falleri, Xavier Blanc

**A Quadtree Replication Method to Optimize Web and Mobile Applications Dealing with Large Sets of Objects on a Map**  
Patrick Munroe, Jonathan Milot, Éric Beaudry, Naouel Moha, François Grondin

**Thursday April 6, 2017**

**THU 9:00 – 10:40**  
**Room: Curcuma**

**(HCI-1) Smart Human Computer Interaction**

**Session Chair:** Anand Paul, Kyungpook National University, South Korea

**Towards a Hypothetical Framework of Humans Related Success Factors for Process Improvement in Global Software Development: Systematic Review**  
Arif Ali Khan, Jacky Keung, Mahmood Niazi, Shahid Hussain

**DyNetVis: A System for Visualization of Dynamic Networks**  
Cláudio Linhares, Bruno Travençolo, José Paiva, Luis Rocha

**SBMI-LTD: Stationary Background Model  
Initialization based on Low-rank  
Tensor Decomposition**

Sajid Javed, Thierry Bouwmans, Soon Ki Jung

**Recommendations to Improve User Experience in  
Second Screen Applications: A Case Study**

Daniel Souza, Marcos Seruffo, Marianne Eliasquevici

**THU 9:00 – 10:40  
Room: Cumin**

**(SEC-1) Computer Security**

**Session Chair:** Lieven Desmet,  
Katholieke Universiteit Leuven, Belgium

**Hiding Debuggers from Malware with Apate**

Hao Shi, Jelena Mirkovic

**Decentralized Privacy-Aware Collaborative  
Filtering of Smart Spammers in a  
Telecommunication Network**

Muhammad Ajmal Azad, Samiran Bag

**R-PackDroid: API Package-Based Characterization  
and Detection of Mobile Ransomware**

Davide Maiorca, Francesco Mercaldo, Giorgio Giacinto, Corrado  
Aaron Visaggio, Fabio Martinelli

**Preventing Relay Attacks in Mobile Transactions  
using Infrared Light**

Iakovos Gurulian, Raja Naeem Akram, Konstantinos  
Markantonakis, Keith Mayes

**THU 9:00 – 10:40  
Room: Paprika**

**(EMBS) Embedded Systems**

**Session Chair:** Marisol Garcia Valls,  
Universidad Carlos III de Madrid, Madrid, Spain

**A Pattern-aware Write Strategy to Enhance the  
Reliability of Flash-Memory Storage Systems**

Tseng-Yi Chen, Yuan-Hao Chang, Yuan-Hung Kuan,  
Ming-Chang Yang, Yu-Ming Chang, Pi-Cheng Hsiu

**Synthesis of Ada Code from Graph-Based  
Task Models**

Jakaria Abdullah, Morteza Mohaqeqi, Wang Yi

**Modeling and Generation of Secure Component  
Communications in AUTOSAR**

Cinzia Bernardeschi, Marco Di Natale, Gianluca Dini, Dario Varano

**Hardware Resource Estimation for Heterogeneous  
FPGA-based SoCs**

Mariem Makni, Mouna Baklouti, Smail Niar, Mohamed Abid

**THU 9:00 – 10:40  
Room: Coriandre I & II**

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

**Session Chair:** Davide Ancona, Università di Genova, Italy

**(SE-1) Software Engineering**

**Session Chair:** Byungjeong Lee, University of Seoul, Korea

**From Object-Oriented Code with Assertions to  
Behavioural Types**

Cláudio Vasconcelos, António Ravara

**Crossing Abstraction Barriers when Debugging In  
Dynamic Languages**

Bastian Kruck, Tobias Pape, Tim Felgentreff, Robert Hirschfeld

**Detecting Spring Configurations Errors**

Vincent von Hof, Konrad Fögen, Herbert Kuchen

**Generating Test Cases and Procedures from use  
Cases in Dynamic Software Product Lines**

Italo Araujo, Ismayle Santos, João Ferreira Filho, Rossana  
Andrade, Pedro Santos Neto

**Prioritizing Random Combinatorial Test Suites**

Rubing Huang, Yunan Zhou, Tsong Yueh Chen, Dave Towey, Jinfu  
Chen, Weiwen Zong

**THU 9:00 – 10:40  
Room: Ras El Hanout**

**(RS-1) Recommender Systems: Theory and  
Applications**

**Session Chair:** Yong Zheng,  
Illinois Institute of Technology, USA

**Leveraging Multi-Dimensional User Models for  
Personalized Next-Track Music Recommendation**

Dietmar Jannach, Iman Kamehkhosh, Lukas Lerche

**Determining Characteristics of Successful  
Recommendations from Log Data – A Case Study**

Dietmar Jannach, Malte Ludewig

**Offline Performance vs. Subjective  
Quality Experience: A Case Study in Video  
Game Recommendation**

Dietmar Jannach, Lukas Lerche

**Action Prediction Models for Recommender  
Systems based on Collaborative Filtering and  
Sequence Mining Hybridization**

Tural Gurbanov, Francesco Ricci

**A Framework for Unexpectedness Evaluation  
in Recommendation**

Thiago Silveira, Leonardo Rocha, Fernando Mourão,  
Marcos Gonçalves

**THU 10:40 – 11:10**

**Coffee Break**

**THU 11:10 – 12:50**

**Room: Curcuma**

**(HCI-2) Smart Human Computer Interaction**

**Session Chair:** Soon Ki Jung,  
Kyungpook National University, South Korea

**ClusterVis: Visualizing Nodes Attributes in Multivariate Graphs**

Ricardo Cava, Carla M. Dal Sasso Freitas, Marco Winckler

**Human enabled Green IoT in 5G Networks**

Sadia Din, Awais Ahmad, Anand Paul

**Exploring Music Rankings with Interactive Visualization**

Leandro Guedes, Carla M.D.S. Freitas

**User Generated Soundscapes Activating Museum Visitors**

Kari Salo, Merja Bauters, Tommi Mikkonen

**THU 11:10 – 12:50**

**Room: Cumin**

**(SEC-2) Computer Security**

**Session Chair:** Lieven Desmet,  
Katholieke Universiteit Leuven, Belgium

**Security and Privacy Preserving Data Aggregation in Cloud Computing**

Leandro Ventura Silva, Rodolfo Marinho, José Vivas, Andrey Brito

**Attacks Landscape in the Dark Side of the Web**

Onur Catakoglu, Marco Balduzzi, Davide Balzarotti

**TeICC: Targeted Execution of Inter-Component Communications in Android**

Maqsood Ahmad, Valerio Costamagna, Bruno Crispo, Francesco Bergadano

**Measuring Login Webpage Security**

Steven Van Acker, Daniel Hausknecht, Andrei Sabelfeld

**THU 11:10 – 12:50**

**Room: Paprika**

**(WCN) Selected Areas of Wireless Communications and Networking**

**Session Chair:** Dongkyun Kim, Kyungpook National University, South Korea

**Joint Workload Scheduling and BBU Allocation in Cloud-RAN for 5G Networks**

Lilatul Ferdouse, Waleed Ejaz, Alagan Anpalagan, Asad Masood Khattak

**Moving away from the Crowd: Channel Selection in Uncoordinated Unplanned Dense Wireless LANs**

Parag Kulkarni, Zhenzhe Zhong, Fengming Cao

**Design and Implementation of a Fast Handoff Scheme Supporting Vehicular Mobility over IEEE 802.11 WLAN**

Made Dwijaksara, MinSik Hwang, Wha S. Jeon, Dong Geun Jeong

**NDN Goes Deep: Foreseeing the Underwater Named Data Networks**

Safdar Hussain Bouk, Syed Hassan Ahmed, Dongkyun Kim

**THU 11:10 – 12:50**

**Room: Coriandre I&II**

**(SE-2) Software Engineering**

**Session Chair:** Paul Leger,  
Universidad Católica del Norte, Chile

**Model-Based Testing of End-User Collaboration Intensive Systems**

Alessio Gambi, Christoph Mayr-Dorn, Andreas Zeller

**Analyzing Emotion Words to Predict Severity of Software Bugs: A Case Study of Open Source Projects**

Geunseok Yang, Seungsuk Baek, Jung-Won Lee, Byungjeong Lee

**On Continuous Deployment Maturity in Customer Projects**

Antti Virtanen, Kati Kuusinen, Marko Leppänen, Antti Luoto, Terhi Kilamo, Tommi Mikkonen

**Deriving Use Cases from Business Processes: A Goal-Oriented Transformational Approach**

Grace Park, Fadoua Fellir, Jang-Hong, José Garrido, Manuel Noguera, Lawrence Chung

**Software Effort Estimation using Classical Analogy Ensembles based on Random Subspace**

Mohamed Hosni, Ali Idri

**THU 11:10 – 12:50**  
**Room: Ras El Hanout**

**(RS-2) Recommender Systems: Theory and Applications**

**Session Chair:** Yong Zheng,  
Illinois Institute of Technology, USA

**Improving Recommender Systems with an Intention-based Algorithm Switching Strategy**

Fanjuan Shi, Chirine Ghedira

**Text-Based Question Routing for Question Answering Communities via Deep Learning**

Amr Azzam, Neamat Tazi, Ahmad Hossny

**Learning Hierarchical Category Influence on both Users and Items for Effective Recommendation**

Zhu Sun, Guibing Guo, Jie Zhang

**Dynamic Elicitation of User Preferences in a Chat-Based Group Recommender System**

Thuy Ngoc Nguyen, Francesco Ricci

**THU 12:50 – 14:20**  
**Lunch Break**  
(Patio 2)

**THU 14:30 – 16:30**  
**Room: Ras El Hanout**  
**SRC Oral Presentations**  
*See page 24 for details.*

**THU 14:20 – 16:00**  
**Room: Curcuma**  
**(CIVIA-1) Computational Intelligence and Video & Image Analysis**  
**Session Chair:** Agostinho Rosa,  
University of Lisbon, Portugal

**Fraud Detection in Water Meters using Pattern Recognition Techniques**

Juliana Patrícia Detroz, André Tavares da Silva

**Semantic Recognition: Unified Framework for Joint Object Detection and Semantic Segmentation**

Lotfi Abdi, Aref Meddeb

**Improving OR-PCA via Smoothed Spatially-Consistent Low-rank Modeling for Background Subtraction**

Sajid Javed, Thierry Bouwmans, Soon Ki Jung

**Video Popularity Prediction in Data Streams based on Context-Independent Features**

Vitor da Silva, Ana Trindade Winck

**THU 14:20 – 16:00**  
**Room: Cumin**

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

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

**(OS-1) Operating Systems**

**Session Chair:** Jaeheung Lee,  
Daejeon University, South Korea

**A Computational Model to Evaluate Honesty in Social Internet of Things**

Upul Jayasinghe, Hyun-Woo Lee, Gyu Myoung Lee

**An End-to-end Voting-system based on Bitcoin**

Stefano Bistarelli, Marco Mantilacci, Paolo Santancini,  
Francesco Santini

**Learning Nuanced Cross-Disciplinary Citation Metric Normalization using the Hierarchical Dirichlet Process on Big Scholarly Data**

Hafsah Umar, Ognjen Arandjelović

**The Influence of Resource Allocation on Cloud Computing Performance**

Dionisio Leite, Maycon Peixoto, Bruno Batista, Bruno Kuehne,  
Carlos Ferreira

**Quantitative Analysis of Measurement Overhead for Integrity Verification**

Juhyung Son, Sungmin Koo, Jongmoo Choi, Seong-je Choi, Seungjae Baek, Gwangil Jeon, Jun-Hyeok Park, Hyoungchun Kim

**THU 14:20 – 16:00**

**Room: Paprika**

**(PAPP) Practical Aspects of High-level  
Parallel Programming**

**Session Chair:** Frederic Louergue,  
Northern Arizona University, USA

**(CC-1) Cloud Computing**

**Session Chair:** M.P. Giles,  
National Institute of Technology Calicut, India

**Multiple Back-End Support for the Armadillo Linear  
Algebra Interface**

Paolo Viviani, Marco Aldinucci, Massimo Torquati, Roberto  
d'Ippolito

**Scalable Subgraph Counting using MapReduce**

Ahmad Naser eddin, Pedro Ribeiro

**P3ARSEC: Towards Parallel Patterns Benchmarking**

Marco Danelutto, Tiziano De Matteis, Daniele De Sensi, Gabriele  
Mencagli, Massimo Torquati

**StopGap: Elastic VMs to Enhance Server  
Consolidation**

Vlad Nitu, Boris Teabe, Leon Fopa, Alain Tchana, Daniel Hagimont

**Secure Storage of User Credentials and Attributes in  
Federation of Clouds**

Luciano Barreto, Leomar Scheunemann, Joni Fraga, Frank Siqueira

**THU 14:20 – 16:00**

**Room: Coriandre I & II**

**(SE-3) Software Engineering**

**Session Chair:** Tao Zhang,  
Harbin Engineering University, China

**SMT-based Consistency Analysis of Industrial  
Systems Requirements**

Predrag Filipovikj, Guillermo Rodriguez-Navas, Mattias Nyberg,  
Cristina Seceleanu

**Learning Environment Model at Runtime for  
Self-Adaptive Systems**

Moeka Tanabe, Kenji Tei, Yoshiaki Fukazawa, Shinichi Honiden

**Nonconformance between Programs and Contracts: A  
Study on C# Code Contracts Open Source Systems**

Alysson Milanez, Bianca Lima, José Ferreira, Tiago Massoni

**Sync/CC: Continuations and Aspects to Tame  
Callback Dependencies on JavaScript Handlers**

Paul Leger, Hiroaki Fukuda

**Run-Time Component Allocation in CPU-GPU  
Embedded Systems**

Gabriel Campeanu, Mehrdad Saadatmand

**THU 16:00 – 16:30**

**Coffee Break**

**THU 16:30 – 18:10**

**Room: Curcuma**

**(CIVIA-2) Computational Intelligence  
and Video & Image Analysis**

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

**How to Extend the use of the Discrete Orthogonal  
Stockwell Transform to Image Watermarking**

Hana Ouazzane, Hela Mahersia, Kamel Hamrouni

**Multi-shot Person Re-Identification using a novel  
Video Covariance Approach**

Bassem Hadjkacem, Walid Ayedi, Mohamed Abid

**Convolutions through Time for Multi-Label Movie  
Genre Classification**

Jônatas Wehrmann, Rodrigo C. Barros

**THU 16:30 – 18:10**

**Room: Cumin**

**(OS-2) Operating Systems**

**Session Chair:** Jaeheung Lee,  
Daejeon University, South Korea

**A Page Replacement Algorithm based on Frequency  
Derived from Reference History**

Hong-Bin Tsai, Chin-Laung Lei

**Coarse-grained mtime Update for Better fsync()  
Performance**

Hankeun Son, Seongjin Lee, Gyeongyeol Choi, Youjip Won

**An Empirical Study on Patterns of Failure Causes in  
a Mass-Market Operating System**

Caio Augusto R. dos Santos, Rivalino Matias Jr.

**Improving Service Time with a Multicore  
Aware Middleware**

Marisol García-Valls, Christian Calva-Urrego

**Towards Energy-Efficient Storage Servers**

Vinicius Machado, Amanda Braga, Natália Rampon, Jean Bez,  
Francieli Boito, Rodrigo Kassick, Edson Padoin, Julien Diaz,  
Jean-François Méhaut, Philippe Navaux

**THU 16:30 – 18:10**  
**Room: Paprika**

**(CC-2) Cloud Computing**  
**Session Chair:** M. Giles, National  
Institute of Technology Calicut, India

**Verifiable Outsourced Database in the Cloud  
Using Game Theory**  
Faryed Eltayesh, Jamal Bentahar

**HyViDE: A Framework for Virtual Data  
Center Network Embedding**  
M.P. Giles, S.D. Madhu Kumar, Lillykutty Jacob

**A Predictive Approach for Enhancing  
Resource Utilization in PaaS Clouds**  
Henrique Truta, José Vivas, Andrey Brito, Telles Nobrega

**ElaScript: a DSL for Coding Elasticity in  
Cloud Computing**  
Simon Dupont, Salma Bouri, Frederico Alvares, Thomas Ledoux

**A Multi-Swarm based Approach with Cooperative  
Learning Strategy for Composite SaaS Placement**  
Haithem Mezni, Jaber Kouki

**Assessing End-to-End Performance and Security  
in Cloud Computing**  
Kaiqi Xiong, Mufaddal Makati

**THU 16:30 – 18:10**  
**Room: Coriandre I & II**

**(SE-4) Software Engineering**  
**Session Chair:** Byungjeong Lee,  
University of Seoul, Korea

**APR: Architectural Pattern Recommender**  
Shipra Sharma, Balwinder Sodhi

**A Theoretical Model for Capturing the  
Impact of Design Patterns on Quality:  
The Decorator Case Study**  
Sofia Charalampidou, Apostolos Ampatzoglou, Paris Avgeriou, Seren  
Sencer, Elvira Maria Arvanitou, Ioannis Stamelos

**On the Randomness and Seasonality of Affective  
Metrics for Software Development**  
Giuseppe Destefanis, Marco Ortu, Steve Counsell, Stephen Swift

**Feedback on How MDE Tools are used  
Prior to Academic Collaboration**  
Vasco Sousa, Eugene Syriani, Martin Paquin

**On the Significance of Relationship Directions in  
Clustering Algorithms for Reverse Engineering**  
David Jensen, Andreas Lundkvist, Imed Hammouda

## POSTERS LISTING

**WED 10:40 - 12:50**  
**Poster Session I**  
**(Foyer Patio)**

**(BIO) Bioinformatics Track**

**Ranking Novel Regulatory Genes in Gene  
Expression Profiles using NetExpress**  
Belma Yelbay, Alexander Gow, Hasan Jamil

**Biclustering of Time Series Data using  
Factor Graphs**  
Matteo Denitto, Alessandro Farinelli, Manuele Bicego

**(CASM) Collective Adaptive System and  
Middleware Track**

**Runtime Verification Method for Self-Adaptive  
Software using Reachability of Transition  
System Model**  
Euijong Lee, Young-Gab Kim, Young-Duk Seo, Kwangsoo Seol,  
Doo-Kwon Baik

**Leveraging the Adoption of Electronic Identities and  
Electronic-Signature Solutions in Europe**  
Alexander Marsalek, Thomas Zefferer, Florian Reimair, Çağatay  
Karabat, Elif Ustundag Soykan

**Enhanced Fraud Detection as a Service supporting  
Merchant-Specific Runtime Customization**  
Davy Preuveneers, Bavo Goossens, Wouter Joosen

**(CC) Cloud Computing Track**

**Towards Scalable and Dynamic Data Encryption for  
Multi-Tenant SaaS**  
Ansar Rafique, Dimitri Van Landuyt, Vincent Reniers,  
Wouter Joosen

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

**Nearest Neighbor Search on Total Bregman  
Balls Tree**  
Daniela Ferreira, Bruno Rocha, Celia Barcelos

**(CoCo) Cognitive Computing Track**

**CogVis: Attention-driven Cognitive Architecture for  
Visual Change Detection**  
Shailesh Deshpande, Arcot Sowmya, Piyush Yadav,  
Shamsuddin Ladha, Priyanka Verma, Karthikeyan Vaiapury,  
Jay Gubbi, Balamurali P.



---

**Towards Adaptation of Named Entity Classification**

Pikakshi Manchanda, Elisabetta Fersini, Matteo Palmonari,  
Debora Nozza, Enza Messina

**(COMBI) Advances in COMPUTational Biomedical  
Imaging Track**

**An Automatic Method for Identification of  
Cystine Crystals in Urine Sediment**

Vicenzo Abichequer, Felipe Lammel, Márcio Pinho, Isabel Manssour

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

**Prepared Scan: Efficient Retrieval of Structured  
Data from HBase**

Francisco Neves, Ricardo Vilaça, José Pereira, Rui Oliveira

**Fault-Tolerant Clock Synchronization in  
Ring-Networks**

Klaus Echtele, Zoha Moztarzadeh

**(HCI) Smart Human Computer Interfaces Track**

**Driver Information System: A Combination of  
Augmented Reality and Deep Learning**

Lotfi Abdi, Aref Meddeb

**(IoT) Internet of Things Track**

**ProfilIoT: A Machine Learning Approach for  
IoT Device Identification based on Network  
Traffic Analysis**

Yair Meidan, Michael Bohadana, Asaf Shabtai, Juan David  
Guarnizo, Martin Ochoa, Nils Ole Tippenhauer, Yuval Elovici

**Security Software Module Update for  
Heterogeneous VoT**

Kiwook Kang, Kyoungmin Kim, Jinwoo Lee,  
Joonhyouk Jang, Jiman Hong

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

**On-the-Fly Transformation Synthesis for  
Information Sharing in Heterogeneous  
Multi-Agent Systems**

Stefan Niemczyk, Nugroho Fredivianus, Kurt Geihs

**Automated Seam Tracking System based on Passive  
Monocular Vision for Automated Linear  
Robotic Welding Process**

Átila Weis, Adriano Velasque Werhli, Nelson Filho, Luciane Soares,  
Cristiano Steffens, Matheus Faria, Paulo Drews-Jr, Sílvia Botelho

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

**Usability Evaluation and Development of Heuristics  
for Second-Screen Applications**

Eduardo Mosqueira-Rey, David Alonso-Rios, Diego Prado-Gesto,  
Vicente Moret-Bonillo

**Utilizing Nearby Computing Resources for  
Resource-Limited Mobile Devices**

Minh Le, Young-Woo Kwon

**(NET) Networking Track**

**Research of The Interest Package Popple  
Broadcast Diffusion Attack in NDN VANET**

Bin Pang, Ru Li, Pengfei Yue

**(SAWCN) Selected Areas of Wireless  
Communications and Networking Track**

**Signal Strength as Support to Mobility  
Detection on Failure Detectors**

Antônio De Vit, César Marcon, Raul Nunes

**UAV-Assisted Reactive Routing for Urban VANETs**

Omar Oubbati, Abderrahmane Lakas, Mesut Güneş,  
Fen Zhou, Mohamed Yagoubi

**(SWA) Semantic Web and Applications Track**

**Syntactic and Semantic Validation of  
SPARQL Queries**

Jesús Jiménez, Antonio Becerra-Terón, Alfredo Cuzzocrea

**Towards Integration of Ontology and Text-extracted  
Data for Event Coreference Reasoning**

Stefano Borgo, Loris Bozzato, Alessio Aprosio,  
Marco Rospocher, Luciano Serafini

**(WT) Web Technologies Track**

**A Smart MobiWeb Mashup Trip Planner Tool**

Marwa Boulakbech, Nizar Messai, Yacine Sam, Thomas Devogele

**Situation-Aware Multi-Criteria Recommender  
System: Using Criteria Preferences as Contexts**

Yong Zheng

**Mitigating Distributed Denial of Service Attacks at  
the Application Layer**

Robert Bronte, Hossain Shahriar, Hisham M. Haddad

**WED 16:00 - 18:10**

**Poster Session II**

**(Foyer Patio)**

**(CPS) Cyber-Physical Systems Track**

**Identity Management for Cyber-Physical Production  
Workflows and Individualized Manufacturing  
in Industry 4.0**

Davy Preuveneers, Wouter Joosen, Elisabeth Ilie-Zudor

**Exploring the Trade-Off between Processing  
Resources and Settling Time in Image-Based  
Control through LQR Tuning**

Róbinson Medina, Sander Stuijk, Dip Goswami, Twan Basten



---

**(DM) Data Mining Track**

**Ontology-based Workflow Pattern Mining:  
Application to Bioinformatics Expertise Acquisition**  
Ahmed Halioui, Tomas Martin, Petko Valtchev, Abdoulaye Diallo

**(DS) Data Streams Track**

**Understanding the Bigger Picture: Batch-Free  
Exploration of Streaming Sequential Patterns  
with Accurate Prediction**  
Marwan Hassani, Daniel Tóws, Thomas Seidl

**Personalised Fading for Stream Data**  
Bruno Veloso, Benedita Malheiro, Juan Burguillo, Jeremy Foss

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

**The Similarity-aware Relational Division  
Database Operator**  
André S. Gonzaga, Robson L.F. Cordeiro

**Next Generation JDBC Database Drivers for  
Performance, Transparent Caching,  
Load Balancing, and Scale-out**  
Ramon Lawrence, Erik Brandsberg, Roland Lee

**(IAR) Information Access and Retrieval Track**

**Finding Duplicate Images in Biology Papers**  
Markus Zlabinger, Allan Hanbury

**Personalized Ranking for Context-Aware  
Venue Suggestion**  
Mohammad Aliannejadi, Ida Mele, Fabio Crestani

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

**A Type and Effect System for Sharing**  
Paola Giannini, Marco Servetto, Elena Zucca

**(OS) Operating Systems Track**

**A Dynamic Duty Cycle Control Mechanism based on  
Mobility for Animal Tracking**  
Seonil Kim, Jisup Yoon, Seoyeon Kim, Sunsup So, Noh Sup Kwak,  
Young Sun Yun, Jinman Jung, Seongbae Eun

**DACS: Dynamic Allocation Credit Scheduler  
for Virtual Machine**  
Myungjoon Shon, Kisu Kim, Hansol Lee, Sung Y. Shin, Jiman Hong

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

**CATS: A Big Network Clustering Algorithm based  
on Triangle Structures**  
Mincheol Shin, Jeongwoo Kim, Jungrim Kim, Dongmin Seo,  
Chihyun Park, Seok Jong Yu, Sanghyun Park

**Enabling Efficient use of Algorithmic Skeletons in  
Cloud Environments: Container-based Virtualization  
for Hybrid CPU-GPU Execution of Data-parallel  
Skeletons**

Fabian Wrede, Vincent von Hof

**(PL) Programming Languages Track**

**Computing Super Reduced Program Slices by  
Composing Slicing Techniques**  
David Insa, Sergio Pérez, Josep Silva

**(RS) Recommender Systems: Theory and  
Applications Track**

**How Item Discovery Enabled by Diversity Leads to  
Increased Recommendation List Attractiveness**  
Bruce Ferwerda, Mark Graus, Andreu Vall,  
Marko Tkalcić, Markus Schedl

**A Language Modeling Approach for the  
Recommendation of Tourism-Related Services**  
Sondess Missaoui, Marco Vivani, Rim Faiz, Gabriella Pasi  
**(SATTA) Software Architecture: Theory, Technology,  
and Applications Track**

**Encoding Asynchrony in Choreographies**  
Luís Cruz-Filipe, Fabrizio Montesi

**Defining an Architecture for Evolving Environments**  
Jarkko Hyysalo, Gavin Harper, Jaakko Sauvola, Anja Keskinarkaus,  
Ilkka Juuso, Miikka Salminen, Juha Partala

**(SE) Software Engineering Track**

**Empirical Evaluation of Fuzzy Analogy for Software  
Development Effort Estimation**  
Ibtissam Abnane, Ali Idri, Alain Abran

**(SiSoS) Software-intensive Systems-of-Systems  
Track**

**Modeling Traceability in System of Systems**  
Bedir Tekinerdogan, Ferhat Erata

**Towards Safe and Secure Systems of Systems:  
Challenges and Opportunities**  
Avenir Kobetski, Jakob Axelsson

**(SONAMA) Social Network and Media Analysis  
Track**

**Exploring the Viability of Tie Strength and Tags in  
Access Controls for Photo Sharing**  
Ricard L. Fogues, Jose M. Such, Agustín Espinosa, Ana García  
Fornes

**Identical User Tracking with Behavior Pattern  
Analysis in Online Community**  
Sang-Hyun Park, Min-Suk Kang, So-Hye Yoon, Seog Park

---

(SP) Software Platforms Track

**Genetic Algorithm based Patching Scheme for Worm Containment on Social Network**

Donghwa Kang, Seoyeon Kim, Jinman Jung, Bongjae Kim, Hong Min, Junyoung Heo

**Student Research Competition Program**

**Student Research Abstract: Computational Study of Inward Rectifying Ion Channel in Urinary Bladder Over Activity**

BIO - Computational BIOlogy and BIOinformatics Track  
Chitaranjan Mahapatra

**Student Research Abstract: A Deep Learning Framework for Identification of microRNA Regulatory Modules**

BIO - Computational BIOlogy and BIOinformatics Track  
Vasu Jindal

**Student Research Abstract: Distributed Smart Street LED Lights for Human Satisfaction in Smart City**

HCI - Smart Human Computer Interfaces Track  
M. Mazhar Rathore

**Student Research Abstract: Discovering and Linking with Life Sciences Linked Open Data Cloud**

SWA - Semantic Web and Applications Track  
Muntazir Mehdi

**Student Research Abstract: A Novel IoT-based Wireless System to Monitor Heart Rate**

IoT - Internet of Things Track  
Mohamed ElSaadany

**Student Research Abstract: Analyzing the Vulnerability Exploitation in Android with the device-mapper-verity (dm-verity)**

MCA - Mobile Computing and Applications Track  
Abhishek P.C.

**Student Research Abstract: Automatic Detection of Cross-Browser Incompatibilities using Machine Learning and Screenshot Similarity**

WT - Web Technologies Track  
Fagner Christian Paes

**Student Research Abstract: A Key-Entity Graph for Clustering Multichannel News**

WT - Web Technologies Track  
Federica Rollo

**Student Research Abstract: Improving Random Projection with Genetic Algorithms**

DM - Data Mining Track  
Daniel López-Sánchez

**Student Research Abstract: Using Chord Distance Descriptors to Enhance Music Information Retrieval**

IAR - Information Access and Retrieval Track  
Ladislav Maršík

**Student Research Abstract: User Preferences Dynamics on Evolving Social Networks – Learning, Modeling and Prediction**

SONAMA - Social Network and Media Analysis Track  
Fabiola S.F. Pereira

**Student Research Abstract: A New Comprehensive Approach to Security Requirements Engineering**

RE - Requirement Engineering Track  
Ilham Maskani

**SAC 2018 INVITATION**

SAC 2018 will be held in Biarritz, France in 2018.

*Hosted by Université de Pau et des Pays de l'Adour (UPPA), Bayonne, France.*

Please check the registration desk for handouts and a poster or visit SAC 2018 website at

<http://www.acm.org/conferences/sac/sac2018/>

*End of Program*