ACM SAC 2018
The 33rd Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2018 ACM SYMPOSIUM ON APPLIED COMPUTING

Pau, France
April 9-13, 2018

Organizing Committee
Phillipe Arnould
Richard Chbeir
Ernesto Exposito
Hisham Haddad
Junyoung Heo
Chih-Cheng Hung
John Kim

Maria Lencastre
Philippe Lopisteguy
Haritza Camblong Luiz
Armin R. Mikler
Hossain Shahriar
Dongwan Shin
Roger L. Wainwright

Software Design and Development
(OOPPS, PL, RE, SATTA, SEC, SST, SOAP, SP, SVT, SWA, UE, VSPLE)

Information Systems
(BPMEA, DM, DS, DTTA, IAR, IRMAS)

System Software and Security
(CPS, ES, HCI, OS, PDP, RS, SEC, SONOMA, WCN, WT)

Al and Agents
(ACMCMPH, BIO, CIVIA, CoCo, KEGeoD, KRR)

Distributed Systems
(CC, CCS, DADS, IoT, MCA, NET)

Hosted by
Université de Pau et des Pays de l'Adour (UPPA), Pau, France
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<tbody>
<tr>
<td><strong>Tutorial Sessions</strong> (9:00-12:30)</td>
<td><strong>Opening Remarks</strong> (9:00-9:25)</td>
<td><strong>AM Breakout Sessions</strong> (9:00-10:40)</td>
<td><strong>Keynote Session</strong> (9:25-10:40)</td>
<td><strong>AM Breakout Sessions</strong> (9:00-10:40)</td>
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<tr>
<td><strong>Coffee Break</strong> (10:30-11:00)</td>
<td><strong>Keynote Session</strong> (9:25-10:40)</td>
<td><strong>Coffee Break</strong> (10:40-11:10)</td>
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<tr>
<td><strong>SAC Luncheon for all (tutorial) Registered Attendees</strong> (12:30-14:30) (Location: Henri Faisans Room)</td>
<td><strong>SAC Luncheon for all Registered Attendees</strong> (12:50-14:20) (Location: Henri Faisans Room)</td>
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<tr>
<td><strong>Tutorial Sessions</strong> (14:30-18:00)</td>
<td><strong>PM Breakout Sessions</strong> (14:20-16:00)</td>
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<tr>
<td><strong>Coffee Break</strong> (16:00-16:30)</td>
<td><strong>SRC Posters Exhibit</strong> (14:30-18:10)</td>
<td><strong>PM Posters Sessions</strong> (16:00-18:10)</td>
<td><strong>SRC Oral Presentations</strong> (14:30-16:30)</td>
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<td><strong>Coffee Break</strong> (16:00-16:30)</td>
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<tr>
<td><strong>SIGAPP Annual Business Meeting</strong> (18:40-19:30) (Ernest Gabard Room)</td>
<td><strong>Future SAC Organization Meeting</strong> (18:40-19:30) (Ernest Gabard Room)</td>
<td><strong>Track Chairs Business Meeting</strong> <em>(working lunch)</em> (13:10-14:00) (Henri Faisans)</td>
<td><strong>SIGAPP Reception</strong> (19:30-21:00) (Location: Henri Faisans Room)</td>
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<td><strong>Future SAC Organization Meeting</strong> (18:40-19:30) (Ernest Gabard Room)</td>
<td><strong>SAC Banquet</strong> (21:00-23:30) (Location: Bellevue Room in Biarritz)</td>
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<td><strong>Track Chairs Business Meeting</strong> <em>(working lunch)</em> (13:10-14:00) (Henri Faisans)</td>
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</table>
# SAC 2018 Session Schedule

## Monday April 9, 2018

**Tutorial Sessions – Please see more on Tutorials Page at SAC 2018 webpage**

## Tuesday April 10, 2018

<table>
<thead>
<tr>
<th>Room</th>
<th>Time</th>
<th>BIO (4)</th>
<th>CoCo (4)</th>
<th>ACMMPH (4)</th>
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<tbody>
<tr>
<td>Alphonse de Lamartine</td>
<td>9:00 - 10:40</td>
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<tr>
<td>Opening Remarks</td>
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<td>Keynote Address</td>
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<tr>
<td>Alfred de Vigny</td>
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<td>Auditorium</td>
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<tr>
<td>Adolphe Alphand</td>
<td>11:10 - 12:50</td>
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<tr>
<td>CC-2 (4)</td>
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<td>CC-1 (4)</td>
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<tr>
<td>Aristide de Monpezat</td>
<td>14:20 - 16:00</td>
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<td>BPMEA-1 (4)</td>
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<td>BPMEA-2 (3)</td>
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<tr>
<td>Ernest Gabard</td>
<td>16:30 – 18:35</td>
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<td>PL-1 (4)</td>
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<td>PL-2 (4)</td>
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<td>A. de Vigny Auditorium</td>
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<tr>
<td>Wright Open Space</td>
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<tr>
<td>SRC Poster Presentations</td>
<td>(14:30 – 18:00)</td>
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**BIO (4) CoCo (4) ACMMIPH (4)**  
**Adolphe Alphand CC-1 (4) CC-2 (4) NET (5)**  
**Aristide de Monpezat BPMEA-1 (4) BPMEA-2 (3) MCA (4)**  
**Ernest Gabard PL-1 (4) PL-2 (4) OOPPS (5)**  
**A. de Vigny Auditorium SEC-1 (4) SEC-2 (4) SiSoS (5)**  

- SIGAPP Business Meeting (18:40 – 19:30) at Ernest Gabard Room
- SGAPP Welcome Reception (19:30 - 21:00) at Henri Faisans Room

## Wednesday April 11, 2018

<table>
<thead>
<tr>
<th>Room</th>
<th>Time</th>
<th>CIVIA-1 (4)</th>
<th>CIVIA-2 (3)</th>
<th>IRMAS (4)</th>
<th>KRR (5)</th>
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<td>EMBS-1 (4)</td>
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<tr>
<td>Adolphe Alphand</td>
<td>11:10 - 12:50</td>
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<td>EMBS-2 (2)</td>
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<tr>
<td>Aristide de Monpezat</td>
<td>14:20 - 16:00</td>
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<td>SONAMA-1 (4)</td>
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<tr>
<td>Ernest Gabard</td>
<td>16:30 – 18:35</td>
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<tr>
<td>CCS (4)</td>
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<td>A. de Vigny Auditorium</td>
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<td>Wright Open Space</td>
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<tr>
<td>AM Posters Display Session</td>
<td>(10:40 – 12:50)</td>
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<tr>
<td>PM Posters Display Session</td>
<td>(16:00 – 18:10)</td>
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**CIVIA-1 (4) CIVIA-2 (3) IRMAS (4)**  
**Adolphe Alphand EMBS-1 (4) EMBS-2 (2)**  
**Aristide de Monpezat SONAMA-1 (4) SONAMA-2 (4)**  
**Ernest Gabard CCS (4) SE-1 (4)**  
**A. de Vigny Auditorium CPS (4) OS-1 (4)**  

- Future SAC Organization Meeting (18:40 – 19:30) at Ernest Gabard Room

## Thursday April 12, 2018

<table>
<thead>
<tr>
<th>Room</th>
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<td>Keynote Address</td>
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<td>Alfred de Vigny</td>
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<td>Auditorium</td>
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<tr>
<td>Adolphe Alphand</td>
<td>11:10 - 12:50</td>
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<td>DTTA (4)</td>
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<tr>
<td>Aristide de Monpezat</td>
<td>14:20 - 16:00</td>
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<td>RE-1 (4)</td>
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<tr>
<td>Ernest Gabard</td>
<td>16:30 – 18:10</td>
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<td>WT-1 (4)</td>
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<td>PDP (4)</td>
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<td>RS-1 (4)</td>
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<tr>
<td>SRC Oral Presentations</td>
<td>(14:30 – 16:30)</td>
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- Track Chair Meeting (working lunch, 13:10 – 14:00) at Henri Faisans Room
- SAC Banquet Dinner (21:00 – 23:30) at Bellevue Room in Biarritz
<table>
<thead>
<tr>
<th>Room</th>
<th>9:00 - 10:40</th>
<th>11:10 - 12:25</th>
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<tr>
<td>Alphonse de Lamartine</td>
<td>HCI-1 (4)</td>
<td>HCI-2 (3)</td>
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<tr>
<td>Adolphe Alphand</td>
<td>KEGeoD (4)</td>
<td>SOAP (3)</td>
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<tr>
<td>Aristide de Monpezat</td>
<td>UE (3)</td>
<td>SP (3)</td>
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<tr>
<td>Ernest Gabard</td>
<td>DM-1 (4)</td>
<td>DM-2 (3)</td>
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<tr>
<td>A. de Vigny Auditorium</td>
<td>WCN-1 (4)</td>
<td>WCN-2 (3)</td>
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SAC 2018

Introduction

SAC 2018 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 2018 features two keynote speakers on Tuesday and Thursday, from 9:25 to 10:40, respectively. The technical program of the symposium consists of tutorial sessions, regular research paper sessions, poster sessions, and Microsoft-sponsored student research competition (SRC) sessions. Five half-day tutorials are offered on Monday 9th, 2018, and 235 research papers in 39 tracks with different research topics are presented from Tuesday April 10th through Friday April 13th, 2018. The sessions for regular research papers start at 9:00 and end at 18:35 (except for Friday when they end at 12:25). Two poster tracks also run on Wednesday April 11th, from 10:40 to 12:50 and from 16:00 to 18:10. Finally, SRC posters display session runs on Tuesday from 14:30 to 18:00 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

The SRC Program of SAC 2018 is sponsored by Microsoft Research.

Microsoft Research

Symposium Chair Message

Hisham M. Haddad
Kennesaw State University, Kennesaw, GA, USA

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

Richard Chbeir
University of Pau & Pays Adour, Pau, France

On behalf of the Organizing Committee, we welcome you to the 33rd Annual ACM Symposium on Applied Computing (SAC 2018), hosted by Université de Pau et des Pays de l'Adour (UPPA), Pau, France. 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 2018 offers Tutorials, 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 group of highly qualified reviewers. We wish to thank the Track Chairs, Committee Members, and participating
Specialized modules called Tracks. Each of the Tracks is a consolidation of a wide range of applied areas into information technology. The success of SAC has been the variety of applied areas of computer science and convene and share ideas on recent developments in a computing researchers and applied practitioners to SAC has become a major international venue for Applied Computing (SAC 2018). For the past 32 years, Welcome to the 33rd International Symposium on you to participate in SAC 2019.

The local organizing committee has been a major contributor to the success of the conference. Our gratitude goes to the Local Arrangement Chairs Dr. Philippe Lopisteguy, University of Pau & Pays Adour, France, and Dr. Haritza Camblong Ruiz, University of Pau, Spain. We extend our thanks to the Publication Chair, Dr. Hossain Shahriar, Kennesaw State University, Marietta, Georgia, 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 managing the Poster Program, and to the Tutorials Chairs Drs. Ernesto Exposito and Philippe Arnould, University of Pau & Pays Adour France, for arranging an exciting set of Tutorials. Many thanks to Dr. Armin R. Mikler, University of North Texas, Denton, Texas, USA for organising the Student Research Competition. Finally, special thanks to our Program Co-Chairs Dr. Dongwan Shin, New Mexico Tech, Socorro, New Mexico, USA, 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 2018 in the beautiful city of Pau, France. We hope you enjoy the SAC 2018 conference and your stay in France. Next year, we invite you to participate in SAC 2019.

Program Chairs Message

Dongwan Shin
New Mexico Tech, New Mexico, USA

Maria Lencastre
University of Pernambuco, Recife, Brazil

Welcome to the 33rd International Symposium on Applied Computing (SAC 2018). For the past 32 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 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 program committees, carrying out blind reviews according to the ACM guidelines, and finally selecting highly qualified papers for the Track. Since its inception fifteen 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 2018.

The open Call for Track Proposals and after prescreening the proposals, 40 Tracks were finally accepted for SAC 2018. 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 931 final paper submissions from over 50 different countries. The submitted papers underwent the blind review process and 235 submissions were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2018 is (25%) for the overall track. In addition to the accepted full papers, 53 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. 51 SRC abstract submissions received and finally 19 (37%) submissions were accepted.

The Technical Program of SAC 2018 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 2018 Technical Sessions a huge success. Some of the popular Tracks had an unprecedented submissions and having at least 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 2018 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, SRC 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. We wish you all a pleasant stay in Pau, France, and have the opportunity to share and exchange your ideas and foster new collaborations. We also hope to see you at SAC 2019.
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 2018 are listed below:

**(AIA) AI and Agents**: Tracks: ACMMIPH, BIO, CIVIA, CoCo, IRMAS, KEGeoD, KRR

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

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

**(SD) Software Design and Development**: Tracks: OOPPS, PL, RE, SATTA, SE, SOAP, SP, SVT, UE, VSPLE

**(SSS) System Software and Security**: Tracks: CPS, EMBS, HCI, OS, PDP, RS, SEC, SiSoS

### Keynote Speakers

**Tuesday April 10, 2018  9:25 - 10:40**

**Dr. Jose A. Lozano**
Department of Computer Science and Artificial Intelligence
University of the Basque Country UPV/EHU
Spain

*Title: Non-Standard Supervised Classification Problems*

**Abstract**

The literature around machine learning has recently seen many problems that depart from the standard supervised classification problem. In these problems the common structure of a supervised dataset where there is a label associated to each instance is broken: an instance can have several labels, a label is assigned to a subset of instances, etc. These problems present different degrees of uncertainty in learning but also in prediction. In this talk I will provide a taxonomy of non-standard machine learning problems illustrating each of them with case examples. I will also elaborate on how to learn classifiers in these scenarios, how to evaluate them and finally I will point out to some results on PAC learning on these problems.

### Speaker’s Bio

Jose A. Lozano received the PhD in computer science in 1998 and currently is full professor in the Department of Computer Science and Artificial Intelligence at the University of the Basque Country UPV/EHU (Spain) where he leads since 2005 the Intelligent Systems Group. His research interests ranged over several areas of computer science, particularly metaheuristic optimization, probabilistic graphical models and machine learning and their application to problems in biomedicine, bioinformatics, ecology and risk analysis, to name a few. Prof. Lozano has published more than 100 ISI journal papers receiving his works more than 9100 citations in google scholar. He is currently associate editor of IEEE Trans. on Neural Networks and Learning Systems and IEEE Trans. Evolutionary Computation and member of the editorial board of Evolutionary Computation journal, memetic computing and several other journals on computational intelligence.

**Tuesday April 12, 2018  9:25 - 10:40**

**Dr. Michael P. Papazoglou**
Tilburg School of Economics and Management
Department of Management
Tilburg University
Netherlands

*Title: From Smart Data Systems to Smart Industrial-Purpose Applications*

**Abstract**

Smart data systems and applications support the processing and integration of data into a unified view from disparate big data sources, sensors and devices in the Internet of Things, social platforms, and databases, whether on-premises or cloud, and software-as-a-service applications to enable more effective decision making. The decisive criterion here is not necessarily the amount of data available, but smart content techniques that promote not only the collection and accumulation of related data, but also its context, and understanding. This requires discovering associations between the data, prioritizing results, finding useful insights, discovering patterns and trends within the data to reveal a wider picture that is more relevant to the problem in hand and react to them. The mechanisms that convert stale data to smart data focus on knowledge-based meta-data representation techniques that structure and associate the data sets and content, annotate them, link them with associated processes and software services, and deliver or syndicate information to recipients.

Smart Industrial-Purpose Applications are a new generation of software applications that combine the benefits of smart data and advanced analytics to help
organizations manage their resources (including humans),
data, sensors, processes and systems more efficiently.
They promise to bring greater speed and efficiency to
industries as diverse as smart agriculture, smart cities,
smart manufacturing, and smart healthcare delivery where
they can provide meaningful insights to decision makers
and help them solve complex problems.

This talk will focus on the role, characteristics, potential
of smart data and applications for diverse domains, and
their enabling technologies. To illustrate the potential
of smart data and applications, the talk will draw on
examples that highlight the interplay of medical and
technical aspects of smart healthcare applications. Smart
healthcare involves deploying computing, information,
service, sensor and visualization technologies to aid in
preventing disease, improving the quality of care and
lowering overall cost. The talk will also examine the
design and deployment requirements, particularly for
point-of-care medical applications, which emerge from
the interplay of the actual clinical situation and the
novelty of the smart healthcare application.

**Speaker's Bio**

Prof. Michael (Mike) Papazoglou is a highly acclaimed
academic with noteworthy experience in areas of
education, research and leadership pertaining to computer
science, information systems, service-engineering, cloud
computing, and digital manufacturing. He holds the Chair
of Computer Science and is the executive director of
European Research Institute in Service Science (ERISS)
at Tilburg University. He is noted as one of the original
promulgators of 'service-oriented computing' and was the
scientific director of the acclaimed EU Network of
Excellence in Software Systems and Services (S-CUBE).
He is renowned for establishing local 'pockets of research
excellence’ in service science and engineering in several
European countries, China, Australia and the Middle East.
Papazoglou is an author of the most highly cited papers in
the area of service engineering and Web services
worldwide with a record of publishing 25 (authored and
edited) books, and over 200 prestigious peer-refereed
papers along with approx. 17,000 citations (H-index
factor 52). He is a distinguished/honorary professor with
an exemplary teaching and R&D record at 11 universities
around the globe. He is the founder and editor-in-charge
of the MIT Press book series on Information Systems as
well as the founder and editor-in-charge of the Springer-
Verlag book series on Service Science. His expertise is in
the areas of Distributed Systems, Service Oriented
Computing, Cloud Computing, Data Engineering and
Federated Databases, IoT, Software Engineering, Model
Driven Architectures, and Smart Applications, such as
Smart Cities and Smart Manufacturing.

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**Other Activities**

**SIGAPP Annual Business Meeting:** Tuesday April 10,
from 18:40 to 19:30 (Location: Ernest Gabard
Room). Open to everyone.

**SIGAPP Reception:** Tuesday April 10, from 19:30 to
21:00 (Location: Henri Faisans Room). Open to everyone.

**Future SAC Organization Meeting:** Wednesday April
11, from 18:40 to 19:30 (Location: Ernest Gabard Room).
Open to everyone.

**Track Chairs Business Meeting (working lunch):**
Thursday April 12, from 13:10 to 14:00 (Location: Henri
Faisans Room). Open for the Organizing Committee and
(potential) Track Chairs.

**SAC Banquet:** Thursday April 12, from 21:00 to 23:30
(Location: Bellevue Room in Biarritz). Open for Banquet
Ticket holders. See your tickets for full details.

**SAC Best Papers/Best Posters Award:** Thursday April
12. During the SAC Banquet 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 and
Oral Presentations on Thursday (Location: Wright Open
Space). Medals and certificates will be given to the top
three winners during the SAC Banquet.
### Monday April 9, 2018

**Mon 9:00–10:30**
Rooms: Adolphe Alphand, Ernest Gabard, Gérard de Nerval  
**Tutorials**  
*See tutorial pages for more details*

**Mon 10:30 – 11:00**
**Coffee Break**

**Mon 11:00–12:30**
Rooms: Adolphe Alphand, Ernest Gabard, Gérard de Nerval  
**Tutorials. continued**

**Mon 12:30 – 14:30**
**Lunch Break**  
(Room Henri Faisans)

**Mon 14:30–16:00**
Rooms: Adolphe Alphand, Ernest Gabard, Gérard de Nerval  
**Tutorials**  
*See tutorial pages for more details*

**Mon 16:00 – 16:30**
**Coffee Break**

**Mon 16:30–18:00**
Rooms: Adolphe Alphand, Ernest Gabard, Gérard de Nerval  
**Tutorials, continued**

### Tuesday April 10, 2018

**TUE 9:25–10:40**
Room: Alfred de Vigny Auditorium  
**Keynote Address**  
Dr. Jose A. Lozano  
*See page 9 for details.*

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

**TUE 11:10 – 12:50**
Room: Alphonse de Lamartine  
**(BIO) Bioinformatics**  
**Session Chair:** Alessio Bechini, University of Pisa, Italy

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**A tf-idf based Topic Model for Identifying lncRNAs from Genomic Background**  
Manu Madhavan, National Institute of Technology Calicut, India  
Gopakumar G, National Institute of Technology Calicut, India

**A Multi-Criteria Decision Making Approach for Predicting Cancer Cell Sensitivity to Drugs**  
Salma Daoud, University of Sfax, Tunisia  
Alef Mdhaffar, University of Sousse, Tunisia  
Bernd Freisleben, University of Marburg, Germany  
Mohamed Jmaiel, University of Sfax, Tunisia

**Interpretable CNV-based Tumour Classification using Fuzzy Rule based Classifiers**  
Mattia Ricatto, University of Pisa, Italy  
Marco Barsacchi, University of Florence, Italy  
A. Bechini, University of Pisa, Italy

**How to Compute Protein Residue Contacts more Accurately?**  
Pedro M. Martins, Universidade Federal de Minas Gerais, Brazil  
Vinícius D. Mayrink, Universidade Federal de Minas Gerais, Brazil  
Sabrina de A. Silveira, Universidade Federal de Viçosa, Brazil  
Carlos H. da Silveira, Universidade Federal de Itajubá, Brazil  
Leonardo H.F. de Lima, Universidade Federal de São João del-Rei  
Raphael C. de Melo-Minardi, Universidade Federal de Minas Gerais
**TUE 11:10 – 12:50**
**Room: Adolphe Alphand**

(SEC-1) Computer Security

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

- Using Enterprise Architecture Model Analysis and Description Logics for Maturity Assessment
  - Diogo Proença, IST/INESC-ID, Portugal
  - José Borbinha, IST/INESC-ID, Portugal

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**TUE 11:10 – 12:50**
**Room: Ernest Gabard**

(PL-1) Programming Language

**Session Chair:** Barrett Bryant, UNT, USA

- A Constraint-logic Object-oriented Language
  - Jan C. Dugelboe, University of Münster, Germany
  - Herbert Kuchen, University of Münster, Germany

- Syntax Error Recovery in Parsing Expression Grammars
  - Sérgio Medeiros, Federal University of Rio Grande do Norte, Brazil
  - Fabio Mascarenhas, Federal University of Rio de Janeiro, Brazil

- Declarative Algorithms for Generation, Counting and Random Sampling of Term Algebras
  - Paul Tarau, University of North Texas, USA

- An Approach based on a DSL + API for Programming Runtime Adaptivity and Autotuning Concerns
  - Tiago Carvalho, University of Porto, Portugal
  - João M.P. Cardoso, University of Porto, Portugal

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**TUE 11:10 – 12:50**
**Room: Gérard de Nerval**

(CC-1) Cloud Computing

**Session Chair:** Priya Chandran, National Institute of Technology Calicut, India

- Multi-Level Per Node Combiner (MLPNC) to Minimize MapReduce Job Latency on Virtualized Environment
  - Rathinaraja Jeyaraj, NIT Karnataka, India
  - Ananthanarayana V S, NIT Karnataka, India

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**TUE 11:10 – 12:50**
**Room: Aristide de Monpezat**

(BPMEA-1) Business Process Management & Enterprise Architecture

**Session Chair:** Marco Brambilla, Politecnico di Milano, Italy

- Ordering Stakeholder Viewpoint Concerns for Holistic Enterprise Architecture (The W6H Framework)
  - Mujahid Sultan, Ryerson University, Canada
  - Andriy Miransky, Ryerson University, Canada

- Similarity Resonance for Improving Process Model Matching Accuracy
  - Nour Assy, Eindhoven University of Technology, The Netherlands
  - Boudewijn F. van Dongen, Eindhoven University of Technology
  - Wil M.P. van der Aalst, Eindhoven University of Technology

- Verifying BPMN Understandability with Novice Business Managers
  - Vanessa Mendoza, University of Pernambuco, Brazil
  - Denis Silva da Silveira, Federal University of Pernambuco, Brazil
  - Maria Luiza Albuquerque, Federal University of Pernambuco, Brazil
  - João Araújo, Universidade NOVA de Lisboa, Portugal

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**TUE 11:10 – 12:50**
**Room: Aristide de Monpezat**

(CC-1) Cloud Computing

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**Room: Ernest Gabard**

(PL-1) Programming Language

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  - Tiago Carvalho, University of Porto, Portugal
  - João M.P. Cardoso, University of Porto, Portugal

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**TUE 11:10 – 12:50**
**Room: Gérard de Nerval**

(SEC-1) Computer Security

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

- Applying Deep Learning on Packet Flows for Botnet Detection
  - Jos Van Roosmalen, Open Universiteit, The Netherlands
  - Harald Vranken, Open Universiteit, The Netherlands
  - Marko Van Eckelen, Open Universiteit, The Netherlands

- Measuring E-Mail Header Injections on the World Wide Web
  - Sai Prashanth Chandramouli, Arizona State University, USA
  - Pierre-Marie Bajan, IRT SystemX, France
  - Christopher Kruegel, University of California, Santa Barbara, USA
  - Giovanni Vigna, University of California, Santa Barbara, USA
  - Ziming Zhao, Arizona State University, USA
  - Adam Doupé, Arizona State University, USA
  - Gail-Joon Ahn, Arizona State University, USA

- The Security Risks of Power Measurements in Multicores
  - Philipp Miedl, ETH Zurich, Switzerland
  - Lothar Thiele, ETH Zurich, Switzerland

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**Final Program**

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**SAC 2018, April 9 – 13**
Ransomware Prevention using Application Authentication-Based File Access Control
Or Ami, Ben-Gurion University of the Negev, Israel
Yuval Elovici, Ben-Gurion University of the Negev, Israel
Danny Hendler, Ben-Gurion University of the Negev, Israel

TUE 14:20 – 16:00
Room: Alphonse de Lamartine
(CoCo) Cognitive Computing
Session Chair: Mauro Drago, Fondazione Bruno Kessier

Predicting Facebook-Users' Personality based on Status and Linguistic Features via Flexible Regression Methodologies
Prantik Howlader, Cisco Systems, India
Kuntal Kumar Pal, Caviun Networks, India
Alfredo Cuzzocrea, University of Trieste and ICAR-CNR, Italy
S.D. Madhu Kumar, National Institute of Technology, India

Predicting Incorrect Mappings: A Data-Driven Approach Applied to DBpedia
Mariano Rico, Universidad Politécnica de Madrid, Spain
Nandana Mihindukulasooriya, Universidad Politécnica de Madrid
Dimitris Kontokostas, Leipzig University, Germany
Sebastian Hellmann, Leipzig University, Germany
Asunciion Gómez-Pérez, Universidad Politécnica de Madrid, Spain

Review-Level Aspect-Based Sentiment Analysis using an Ontology
Sophie de Kok, Erasmus University Rotterdam, The Netherlands
Linda Pun, Erasmus University Rotterdam, The Netherlands
Rosita van den Puttelaar, Erasmus University Rotterdam
Karelinna Banta, Erasmus University Rotterdam, The Netherlands
Kim Schouten, Erasmus University Rotterdam, The Netherlands
Flavius Frasincar, Erasmus University Rotterdam, The Netherlands

Deep Reinforcement Learning Boosted by External Knowledge
Nicolas Bougie, National Institute of Informatics, Japan
Ryutaro Ichise, National Institute of Informatics, Japan
Leveraging Teenagers Feedback in the Development of a Domain-Specific Language – The Case of Programming Low-Cost Robots
Ankica Barisić, Universidade NOVA de Lisboa, Portugal
João Cambeiro, Universidade NOVA de Lisboa, Portugal
Vasco Amaral, Universidade NOVA de Lisboa, Portugal
Miguel Goulão, Universidade NOVA de Lisboa, Portugal
Tarquinio Mota, Artica Creative Computing, Portugal

Efficient Evaluation of Context-Free Path Queries for Graph Databases
Ciro M. Medeiros, UFRGN, Brazil
Martin A. Musicante, UFRGN, Brazil
Umberto S. Costa, UFRGN, Brazil

A Framework for Constructing JavaScript Virtual Machines with Customized Datatype Representations
Takafumi Kataoka, Kochi University of Technology, Japan
Tomoharu Ugawa, Kochi University of Technology, Japan
Hideya Iwasaki, The University of Electro-Communications, Japan

Communications in Choreographies, Revisited
Luís Cruz-Filipe, University of Southern Denmark, Denmark
Fabrizio Montesi, University of Southern Denmark, Denmark
Marco Peressotti, University of Southern Denmark, Denmark

Bridging the Gap in Privacy-Preserving Revocation: Practical and Scalable Revocation of Mobile eIDs
Michael Hölzl, JKU Linz, Austria
Michael Roland, University of Applied Sciences Upper Austria
Omid Mir, Institute of Networks and Security, JKU Linz, Austria
René Mayrhofer, JKU Linz, Austria

Behavior Analysis in the Medical Sector: Theory and Practice
Mahdi Alizadeh, EUT, The Netherlands
Sander Peters, EUT, The Netherlands
Sandro Etalle, EUT, The Netherlands
Nicola Zannone, EUT, The Netherlands

Combinatorial Subset Difference Public Key Broadcast Encryption Scheme for Secure Multicast
Jihye Kim, Kookmin University, South Korea
Seungwha Lee, Kookmin University, South Korea
Jiwon Lee, Hanyang University, South Korea
Hyunok Oh, Hanyang University, South Korea

State-Aware Anomaly Detection for Industrial Control Systems
Hamid Reza Ghaeini, SUTD, Singapore
Daniele Antonioli, SUTD, Singapore
Ferdinand Brasser, Technische Universität Darmstadt, Germany
Ahmad-Reza Sadeghi, Technische Universität Darmstadt, Germany
Nils Ole Tippenhauer, SUTD, Singapore

Mining String Patterns for Individuating Reading Pathologies
Fabio Fassetti, University of Calabria, Italy
Ilaria Fassetti, LogopediaTherapeia Rehabilitation Center, Italy

Discovering, Selecting and Exploiting Feature Sequence Records of Study Participants for the Classification of Epidemiological Data on Hepatic Steatosis
Tommy Hielscher, Otto-von-Guericke University Magdeburg, Germany
Henry Volzke, University Medicine Greifswald, Germany
Panagiotis Papapetrou, Stockholm University, Sweden
Myra Spiliopoulou, Otto-von-Guericke University Magdeburg, Germany

A Parallel Framework for HCC Detection in DCE-MRI Sequences with Wavelet-Based Description and SVM classification
Ana L.M. Pavan, São Paulo State University, Brazil
Marwa Benabdallah, University of Sfax, Tunisia
Marie-Angé Lebre, Université Clermont Auvergne, France
Diana Rodrigues de Pin, São Paulo State University, Brazil
Faouzi Jaziri, Université Clermont Auvergne, France
Antoine Vacavant, Université Clermont Auvergne, France
Achraf Mtibaa, Université de Sfax, Tunisia
Hawa Mohamed Ali, Université Clermont Auvergne, France
Manuel Grand-Brochier, Université Clermont Auvergne, France
Hugo Rositi, Université Clermont Auvergne, France
Benoît Magnin, CHU Clermont-Ferrand, France
Pascal Chabrot, CHU Clermont-Ferrand, FR

3D Medical Objects Processing and Retrieval using Spherical Harmonics: A Case Study with Congestive Heart Failure MRI Exams
Leila Cristina C. Bergamasco, University of São Paulo, Brazil
Carlos E. Rochitte, University of São Paulo, Brazil
Fátima L.S. Nunes, University of São Paulo, Brazil
On the Feasibility of 40 Gbps Network Data Capture and Retention with General Purpose Hardware
Guillermo Julián-Moreno, Universidad Autónoma de Madrid, Spain
Rafael Leira, Universidad Autónoma de Madrid, Spain
Jorge E. López de Vergara, Universidad Autónoma de Madrid, Spain
Iván González, Universidad Autónoma de Madrid, Spain

GAC: Graph-Based Alert Correlation for the Detection of Distributed Multi-Step Attacks
Steffen Haas, Universität Hamburg, Germany
Mathias Fischer, Universität Hamburg, Germany

A Flexible and Efficient Container-based NFV Platform for Middlebox Networking
Chao Zheng, Chinese Academy of Sciences, China
Qiuwen Lu, Chinese Academy of Sciences, China
Jia Li, Chinese Academy of Sciences, China
Qingyun Liu, Chinese Academy of Sciences, China
Binxing Fang, UESTC in Guangdong, China

Scaling Topology Pattern Matching: A Distributed Approach
Michael Stein, Technische Universität Darmstadt, Germany
Alexander Frömmgen, Technische Universität Darmstadt, Germany
Lin Wang, Technische Universität Darmstadt, Germany
Augustin Wölfel, Technische Universität Darmstadt, Germany
Boris Koldehofe, Technische Universität Darmstadt, Germany
Max Mühlhäuser, Technische Universität Darmstadt, Germany

Efficient Feature Extraction for Internet Data Analysis using AS2Vec
John Robert Mendoza, University of the Philippines Diliman
Roel Ocampo, University of the Philippines Diliman, Philippines
Isabel Montes, University of the Philippines Diliman, Philippines
Cedric Angelo Festin, University of the Philippines Diliman

Deep Feature Learning and Selection for Activity Recognition
Yasser Mohammad, KDDI Research Inc., Japan
Kazumori Matsumoto, KDDI Research Inc., Japan
Keiichiro Hoashi, KDDI Research Inc., Japan

Estimating Local Coverage Areas for Location Dependent Queries
Jorge Bernad, University of Zaragoza, Spain
Carlos Bofé, Université de Rennes 1, France
Eduardo Mena, University of Zaragoza, Spain

Text Extraction and Retrieval from Smartphone Screenshots: Building a Repository for Life in Media
Agneše Chiatti, Pennsylvania State University, USA
Mu Jung Cho, Stanford University, USA
Anupriya Gagneja, Stanford University, USA
Xiao Yang, Pennsylvania State University, USA
Miriam Brinberg, Pennsylvania State University, USA
Katie Roehrick, Stanford University, USA
Sagnik Ray Chowdhury, Pennsylvania State University, USA
Nilam Ram, Pennsylvania State University, USA
Byron Reeves, Stanford University, USA
C. Lee Giles, Pennsylvania State University, USA

A Smartphone Application to Measure the Quality of Pest Control Spraying Machines via Image Analysis
Bruno Brandoli Machado, University of Mato Grosso do Sul, Brazil
Gabriel Souza, University of São Paulo, Brazil
Mauro S. Arruda, Federal University of Mato Grosso do Sul, Brazil
Wesley N. Gonçalves, University of Mato Grosso do Sul, Brazil
Andre C.P.L.F. Carvalho, University of São Paulo, Brazil
Jose F. Rodrigues Jr., University of São Paulo, Brazil

OOlong: An Extensible Concurrent Object Calculus
Elias Castegren, Uppsala University, Sweden
Tobias Wrigstad, Uppsala University, Sweden

Implementing Modular Class-based Reuse Mechanisms on Top of a Single Inheritance VM
Pablo Tesone, Université de Lille, France
Guillermo Polito, Université de Lille, France
Luc Fabresse, Université de Lille, France
Noury Bouragadi, Université de Lille, France
Stéphane Ducasse, Iria Lille-Nord Europe, France

A Type and Effect System for Uniqueness and Immutability
Paola Giannini, Università del Piemonte Orientale, Italy
Marco Servetto, Victoria University of Wellington, New Zealand
Elena Zucca, Università di Genova, Italy

Textual Alignment in SPMD Programs
Frédéric Dubrowski, Université d’Orléans, France

Enabling Lock-free Concurrent Workers over Temporal Graphs Composed of Multiple Time-Series
Francois Fouquet, University of Luxembourg, Luxembourg
Thomas Hartmann, University of Luxembourg, Luxembourg
Sébastien Mosser, Université Côte d’Azur, I3S, France
Maxime Cordy, University of Luxembourg, Luxembourg

Final Program
A Refinement-based approach for Specifying Multi-scale Software Architectures: Application to SoS
Ilhem Khlif, ReDCAD Research Laboratory, Tunisia
Imen Toussi, ReDCAD Research Laboratory, Tunisia
Mohamed Hadj Kacem, ReDCAD Research Laboratory, Tunisia
Cédric Eichler, INSA Centre Val de Loire, France
Ahmed Hadj Kacem, ReDCAD Research Laboratory, Tunisia

A Decision Approach for Energy Distribution Management in Smart Cities
Imen Abdennadher, ReDCAD, University of Sfax, Tunisia
Ismael Bouassida Rodriguez, ReDCAD, University of Sfax, Tunisia
Mohamed Jmaiel, ReDCAD, University of Sfax, Tunisia

Formal Modeling of Systems-of-Systems Missions with mKAOS
Eduardo Silva, IRISA and University of South Britanny, France
Thais Batista, Federal University of Rio Grande do Norte, Brazil

Correctness by Construction and Style Preserving Reconfigurations of System of Systems
Cédric Eichler, INSA Centre Val de Loire-LIFO, France
Khalil Drira, LAAS-CNRS, France
Thierry Monteil, LAAS-CNRS, France
Patricia Stolf, Université Jean Jaurès, France

Externalizing Patterns for Simulation in Software Engineering of Systems-of-Systems
Valdemar V. Graciano Neto, University of São Paulo, Brazil
Wallace Manzano, University of São Paulo, Brazil
Adair José Rohling, INPE, Brazil
Mauricio Gonçalves Vieira Ferreira, INPE, Brazil
Tiago Volpato, University of São Paulo, Brazil
Elisa Yumi Nakagawa, University of São Paulo, Brazil

Evaluation of Morphological Hierarchies for Supervised Video Segmentation
Filipe Tório, L.R. Nhimi, PUC Minas, Brazil
Zenilton Patrocínio Jr., PUC Minas, Brazil
Benjamin Perret, ESIEE Paris, France
Jean Couty, ESIEE Paris, France
Silvio Jamil F. Guimaraes, PUC Minas, Brazil

Identification of Fruit Fly in Intelligent Traps using Techniques of Digital Image Processing and Machine Learning
Thainan B. Remboski, Universidade Federal de Pelotas, Brazil
William D. de Souza, Universidade Federal de Pelotas, Brazil
Marilton S. de Aguiar, Universidade Federal de Pelotas, Brazil
Paulo R. Ferreira Júnior, Universidade Federal de Pelotas, Brazil

A Low Cost VSLAM Prototype using Webcams and a Smartphone for Outdoor Application
Eduardo A. Speroni, Universidade Federal de Santa Maria, Brazil
Simone R. Ceolin, Universidade Federal de Santa Maria, Brazil
Osmar M. dos Santos, Universidade Federal de Santa Maria, Brazil
Andrei P. Legg, Universidade Federal de Santa Maria, Brazil

A Curve Completion Algorithm for Agricultural Planning
Iuri R. Souza, Sensix, Brazil
Mauricio C. Escarpinati, Universidade Federal Uberlândia, Brazil
Daniel D. Abdala, Universidade Federal de Uberlândia, Brazil

Impact of Memory Frequency Scaling on User-centric Smartphone Workloads
H.R. Mendis, University of York, UK
Wei-Ming Chen, National Taiwan University, Taiwan
L.S. Indrusiak, University of York, UK
Tei-Wei Kuo, National Taiwan University, Taiwan
Pi-Cheng Hsiu, Academia Sinica, Taiwan

Assessing the Pessimism of Current Multicore Global Fixed-Priority Schedulability Analysis
Youcheng Sun, University of Oxford, UK
Marco Di Natale, Scuola Superiore Sant’Anna, Italy

Controller-Aware Memory Coloring for Multicore Real-Time Systems
Xing Fan, North Carolina State University, USA
Frank Mueller, North Carolina State University, USA

RPR: A Random Replacement Policy with Limited Pathological Replacements
Pedro Benedicte, Barcelona Supercomputing Center, Spain
Carles Hernandez, Barcelona Supercomputing Center, Spain
Jaume Abella, Barcelona Supercomputing Center, Spain
Francisco J. Cazorla, Barcelona Supercomputing Center, Spain
Scalable and Timely Detection of Cyberbullying in Online Social Networks
Rahat Ibn Rafiq, University of Colorado Boulder, USA
Homa Hosseinmardi, University of Southern California, USA
Richard Han, University of Colorado Boulder, USA
Qin Lv, University of Colorado Boulder, USA
Shivakant Mishra, University of Colorado Boulder, USA

GreenShip: A Social Networking System for Combating Cyber-Bullying and Defending Personal Reputation
Hasan M. Jamil, University of Idaho, USA
Robert Breckenridge, University of Idaho, USA

Improving Sentiment Classification from High Volatility Financial News
Jenq-Haur Wang, National Taipei University of Technology, Taiwan
Shiang Huang, Chung-Hwa Telecom, Taiwan

A Multi-Task Neural Network for Multilingual Sentiment Classification and Language Detection on Twitter
Jônatas Wehrmann, PCURGS, Brazil
Willian E. Becker, PCURGS, Brazil
Rodrigo C. Barros, PCURGS, Brazil

Comparing Languages for Engineering Server Software: Erlang, Go, and Scala with Akka
Ivan Valkov, University of Glasgow, UK
Natalia Chechina, University of Glasgow, UK
Phil Trinder, University of Glasgow, UK

Coordinated Composition of Continuous Service Collaborations in Decentralized Smart Computing Environments
Markus Wutzler, Technische Universität Dresden, Germany
Thomas Springer, Technische Universität Dresden, Germany
Alexander Schill, Technische Universität Dresden, Germany

Online Team-Based Game Development Discussions Patterns Summarised using Probabilistic Models
Akiko Teranishi, New York University Abu Dhabi, UAE
Minoru Nakayama, Tokyo Institute of Technology, Japan
Theodor Wyeld, Flinders University, Australia
Eid A. Mohamad, New York University Abu Dhabi, UAE

Boosting the Performance with a Data-backup-free Programming Scheme for TLC-based SSDs
Chun-Chiang Pan, National Taiwan University, Taiwan
Chien-Chung Ho, National Chung Cheng University, Taiwan
Yuan-Hao Chang, Academia Sinica, Taiwan
Tei-Wei Kuo, National Taiwan University, Taiwan
Yu-Ming Chang, National Taiwan University, Taiwan
Ming-Chang Yang, The Chinese University of Hong Kong, HK

Integrated Simulation Testbed for Security and Resilience of CPS
Himanshu Neema, Vanderbilt University, USA
Bradley Potteiger, Vanderbilt University, USA
Xenofon Koutsoukos, Vanderbilt University, USA
Gabor Karsai, Vanderbilt University, USA
Peter Volgyesi, Vanderbilt University, USA
Janos Sztipanovits, Vanderbilt University, USA

Low Power Driven and Multi-CLP aware Loop Tiling for RRAM Crossbar-based CNN
Yuanhui Ni, Capital Normal University, China
Keni Qi, Capital Normal University, China
Weiwen Chen, Capital Normal University, China
Lixue Xia, Tsinghua University, China
Yu Wang, Tsinghua University, China
A Deep-Learning-Based Approach for Automated Wagon Component Inspection
Rafael L. Rocha, Instituto Tecnológico Vale, Brazil
Ana Carolina Q. Siravenha, SESI, Brazil
Ana Cláudia S. Gomes, SESI, Brazil
Gerson L. Serejo, Instituto Tecnológico Vale, Brazil
Alexandre F. B. Silva, SENAI Institute of Innovation, Brazil
Luciano M. Rodrigues, Instituto Tecnológico Vale, Brazil
Júlio Braga, Vale S.A., Brazil
Giovanni Dias, Vale S.A., Brazil
Schubert R. Carvalho, Instituto Tecnológico Vale, Brazil
Cleidson R.B. de Souza, Universidade Federal do Pará, Brazil

Computer Vision System for Weld Bead Geometric Analysis
Luciane B. Soares, Universidade Federal do Rio Grande, Brazil
Átila A. Weis, Universidade Federal do Rio Grande, Brazil
Bruna de V. Guterres, Universidade Federal do Rio Grande, Brazil
Ricardo N. Rodrigues, Universidade Federal do Rio Grande, Brazil
Silvia S. da C. Botelho, Universidade Federal do Rio Grande, Brazil

Comparative Study of Genetic and Discrete Firefly Algorithm for Combinatorial Optimization
William Tassaro Lunardi, University of Luxembourg, Luxembourg
Holger Voos, University of Luxembourg, Luxembourg

Computational Advertising in Social Networks: An Opinion Mining-based Approach
Mauro Dragoni, Fondazione Bruno Kessler, Italy

Towards a Reputation Model applied to Geosocial Networks: A Case Study on Crowd4City
Ana Gabrielle Ramos Falchio, UFCG, Brazil
Claudio de Souza Baptista, UFCG, Brazil
Maxwell Guimarães de Oliveira, Federal University of Cariri, Brazil
Júlio Henrique Rocha, UFCG, Brazil
Tiago Henrique da Silva Leite, UFCG, Brazil
José Eustáquio Rangel de Queiroz, UFCG, Brazil

A Brute-Force Schedulability Analysis for Formal Model under Logical Execution Time Assumption
Pierre-Emmanuel Hladik, LAAS-CNRS, France

On the Use of Package Managers by the C++ Open-Source Community
André Miranda, University of Pernambuco, Brazil
João Pimentel, Universidade Federal Rural de Pernambuco, Brazil

Energy-Aware Real-Time Scheduling in the Linux Kernel
Cláudio Scordino, Evidenze Srl, Italy
Lucas Abemi, Scuola Superiore S. Anna, Italy
Juri Lelli, Red Hat, Inc., USA

Towards an Approach to Elicit Domain Requirements from Social Networks: The Case of Emergency Systems
Cláudio Borges, Universidade NOVA de Lisboa, Portugal
João Araújo, Universidade NOVA de Lisboa, Portugal
Armanda Rodrigues, Universidade Nova de Lisboa, Portugal

A Preselection Algorithm for the Influence Maximization Problem in Power Law Graphs
Renato S. Melo, Federal University of Paraná, Brazil
Andre L. Vignatti, Federal University of Paraná, Brazil

Automatic Code Conversion for Non-Volatile Memory
Jinsoo Yoo, Hanyang University, South Korea
Yongjun Park, Hanyang University, South Korea
Shakaiba Majeed, Hanyang University, South Korea
Minsoo Ryu, Hanyang University, South Korea

Exploring OS-based Full-System Deterministic Replay
Hyunmin Yoon, Hanyang University, South Korea
Shakaiba Majeed, Hanyang University, South Korea
Minsoo Ryu, Hanyang University, South Korea
Monitoring-based Auto-Scalability Across Hybrid Clouds
Constantin-Cosmin Crecană, University Politehnica of Bucharest
Florin Pop, University Politehnica of Bucharest, Romania

Unified Hardware Abstraction Layer with Device Masquerade
Iori Yoneji, University of Tsukuba, Japan
Takaaki Fukai, University of Tsukuba, Japan
Takahiro Shinagawa, The University of Tokyo, Japan
Kazuhiko Kato, University of Tsukuba, Japan

WED 10:40 – 12:50
Poster Session I
(WRIGHT OPEN SPACE)
Posters of the following Tracks: ACMIPH, BIO, CIVIA, CoCo, HCI, IRMAS, CC, CCS, DADS, IoT, MCA, NET, SONOMA, WCN
(See page 29 for detailed list of Posters)

WED 12:50 – 14:20
Lunch Break
(Henri Faisans Room)

WED 14:20 – 16:00
Room: Aristide de Monpezat
(IRMAS) Intelligent Robotics and Multi-Agent Systems
Session Chair: Rui P. Rocha, Institute of Systems and Robotics, University of Coimbra, Portugal

Distributed Optimization in Multi-Agent Robotics for Industry 4.0 Warehouses
Ajay Kattepur, Tata Consultancy Services, India
Hemant Kumar Rath, Tata Consultancy Services, India
Anantha Simha, Tata Consultancy Services, India
Arijit Mukherjee, Tata Consultancy Services, India

Declarative vs Rule-based Control for Flocking Dynamics
Usama Mehmood, Stony Brook University, USA
Nicola Paolotti, Stony Brook University, USA
Dung Phan, Stony Brook University, USA
Radu Grosu, Technische Universität Wien, Austria
Shan Lin, Stony Brook University, USA
Scott D. Stoller, Stony Brook University, USA
Ashish Tiwari, SRI International, USA
Junxing Yang, Stony Brook University, USA
Scott A. Smolka, Stony Brook University, USA

WED 14:20 – 16:00
Room: Adolphe Alphand
(DS) Data Streams
Session Chair: Joao Gama, University of Porto, Portugal

Iterative Subset Selection for Feature Drifting Data Streams
Lanjin Yuan, University of Waikato, New Zealand
Bernhard Pfahringer, University of Auckland, New Zealand
Jean Paul Barddal, Pontificia Universidade Católica do Paraná, Brazil

Maximally Informative k-Itemset Mining from Massively Distributed Data Streams
Mehdi Zitouni, INRIA and University of Montpellier, France
Reza Akbarinia, INRIA and University of Montpellier, France
Sadok Ben Yahia, Université Tunis ElManar, Tunisia
Florent Masseglia, INRIA and University of Montpellier, France

Unsupervised Context Switch for Classification Tasks on Data Streams with Recurrent Concepts
Denis M. dos Reis, Universidade de São Paulo, Brazil
André G. Maletzke, Universidade de São Paulo, Brazil
Gustavo E.A.P.A. Batista, Universidade de São Paulo, Brazil

WED 14:20 – 16:00
Room: Alphonse de Lamartine
(SONAMA-3) Social Network and Media Analysis
Session Chair: Richard Han, University of Colorado Boulder, USA
(IAR) Information Access and Retrieval
Session Chair: Grégory Smits, Univ Rennes, CNRS, IRISA – UMR

Evolving Collective Behaviours in Simulated Kilobots
Jane Holland, National University of Ireland, Galway, Ireland
Josephine Griffith, National University of Ireland, Galway, Ireland
Colm O’Riordan, National University of Ireland, Galway, Ireland

Fast Consensus for Fully Distributed Multi-Agent Task Allocation
Joanna Turner, Loughborough University, UK
Qinggang Meng, Loughborough University, UK
Gerald Schaefer, Loughborough University, UK
Andrea Solloggio, Loughborough University, UK

(SONAMA) The Follower Count Fallacy: Detecting Twitter Users with Manipulated Follower Count
Anupama Aggarwal, IIIT-Delhi, India
Saravana Kumar, College of Engineering, Guindy, India
Kushagra Bhargava, IIIT-Delhi, India
Ponnurangam Kumarraguru, IIIT-Delhi, India

(SONAMA) Exploiting LinkedIn to Predict Employee Resignation Likelihood
Ana Carolina C. de Jesus, PCUMG, Brazil
Márcio Enio G. Dutra Júnior, PCUMG, Brazil
Wladmir C. Brandão, PCUMG, Brazil
(IAR) Source Selection of Long Tail Sources for Federated Search in an Uncooperative Setting
Günter Urak, Know-Center GmbH, Austria
Hermann Ziak, Know-Center GmbH, Austria
Roman Kern, Know-Center GmbH, Austria

WED 14:20 – 16:00
Room: Ernest Gabard
(SE-2) Software Engineering
Session Chair: Byungseong Lee, University of Seoul, South Korea

An Experimental Evaluation of a De-biasing Intervention for Professional Software Developers
Martin Shepperd, Brunel University London, UK
Carolyn Mair, Fashion.Psychology, UK
Magne Jorgensen, Simula Research Laboratory, Norway

DEVA: Sensing Emotions in the Valence Arousal Space from Software Engineering Text
Md. Rakibul Islam, University of New Orleans, USA
Minhaz F. Zibran, University of New Orleans, USA

NewTL: Engineering an Extract, Transform, Load (ETL) Software System for Business on a Very Large Scale
Vidroha Debroy, Varidesk Inc., USA
Lance Brimble, Varidesk Inc., USA
Matt Yost, Varidesk Inc., USA

An Agile Process Supporting Software Reuse: An Industrial Experience
Luigi Cafaro, INDRA, Italy
Rita Frances, University of Salerno, Italy
Ciro Palumbo, INDRA, Italy
Michele Risi, University of Salerno, Italy
Genoveffa Tortora, University of Salerno, Italy

WED 14:20 – 16:00
Room: Gérard de Nerval
(OS-2) Operating Systems
Session Chair: Alexandre Beletti, FISP & FUP, Brazil

Analyzing and Modeling the Impact of Memory Latency and Bandwidth on Application Performance
Myunghoon Oh, Dankook University, South Korea
Jongmo Choi, Dankook University, South Korea
Seong-je Cho, Dankook University, South Korea
Jeessoo Kim, Johns Hopkins University, USA
Changhwan Youn, SK Hynix Inc., South Korea
Woosuk Chung, SK Hynix Inc., South Korea

Efficient Page-cache Encryption for Smart Devices with Non-volatile Main Memory
Kenichi Kovari, Kyushu Institute of Technology, Japan
Naoto Fukuda, Kyushu Institute of Technology, Japan
Tomohiro Kodama, Kyushu Institute of Technology, Japan

Ethernet Bonding on a Bare PC Web Server with Dual NICs
Paris Almansour, Towson University, USA
Ramesh Karne, Towson University, USA
Alexander Wijesinha, Towson University, USA
Bharat Rawal, Pennsylvania State University Abington, USA

Kloadavg: A Load Index for the OS Kernel Level
Rivalino Matias Jr., Federal University of Uberlandia, Brazil
Alexandre Beletti Ferreira, Federal Institute of São Paulo and Federal University of Para, Para, Brazil

WED 16:00 – 16:30
Coffee Break

WED 16:00 – 18:10
Poster Session II
(WRIGHT OPEN SPACE)
Posters of the following Tracks: BPMEA, DM, DS, IAR, SOAP, SWA, WT, RE, RS, SATTA, SE, SISOs, SP, UE, ES, OOPS, OS, PDP, PL
(See page 30 for detailed list of Posters)

WED 16:30 – 18:35
Room: Alphonse de Lamartine
(KRR) Knowledge Representation and Reasoning
Session Chair: Martine Ceberio, UTEP, USA

Tractable Reasoning in Probabilistic OWL Profiles
Melissa Sch Wulage Chekol, University of Mannheim, Germany
Heiner Stuckenschmidt, University of Mannheim, Germany

A Preference-Based Approach to Backbone Computation with Application to Argumentation
Alessandro Previti, University of Helsinki, Finland
Matt Järvisalo, University of Helsinki, Finland

An Infinite-Valued Grounded Labelling for Abstract Argumentation Frameworks
João Alcântara, Universidade Federal do Ceará, Brazil
Samy Sí, Universidade Federal do Ceará, Brazil

Incremental Computation of Warranted Arguments in Dynamic Defeasible Argumentation: The Rule Addition Case
Gianvincenzo Alfano, University of Calabria, Italy
Sergio Greco, University of Calabria, Italy
Francesco Parisi, University of Calabria, Italy
Gerardo I. Simari, Universidad Nacional del Sur, Argentina
Guillermo R. Simari, Universidad Nacional del Sur, Argentina
Towards Coherent Single-Document Summarization: An Integer Linear Programming-based Approach
Rodrigo Garcia, Federal Rural University of Pernambuco, Brazil
Rinaldo Lima, Federal Rural University of Pernambuco, Brazil
Bernard Espinasse, Aix-Marseille Université, France
Hilário Oliveira, Federal University of Pernambuco, Brazil

Fuzzy Query by Example
Aurélien Moreau, University of Rennes 1 / IRISA, France
Olivier Pivert, University of Rennes 1 / IRISA, France
Grégory Smits, University of Rennes 1 / IRISA, France

CoReC: A Co-Training Approach for Recommender Systems
Arthur F. da Costa, University of São Paulo, Brazil
Marcelo G. Manzato, University of São Paulo, Brazil
Ricardo J.G.B. Campello, James Cook University, Australia

Optimization Framework Model for Retrospective Tweet Summarization
Abdelhamid Chellal, University of Toulouse III, France
Mohand Bouguenem, University of Toulouse III, France

Towards a Model for Comprehending and Reasoning about PoW-based Blockchain Network Sustainability
Sotirios Liaskos, York University, Canada
Bo Wang, York University, Canada

Secure Publish and Subscribe Systems with Efficient Revocation
Sana Belguith, The University of Auckland, New Zealand
Shujie Cui, The University of Auckland, New Zealand
Muhammad Rizwan Asghar, The University of Auckland
Giovanni Russello, The University of Auckland, New Zealand

Adaptive Information Distribution for Dynamic Sets
Matthias Prellwitz, University of Rostock, Germany
Helge Parzyjegla, University of Rostock, Germany
Steffen Steiner, University of Rostock, Germany
Gero Mühl, University of Rostock, Germany

EcoVMBroker: Energy-aware Scheduling for Multi-layer Datacenters
Rodrigo Fernandes, INESC-ID Lisboa, Portugal
José Simão, INESC-ID Lisboa, Portugal
Luís Veiga, INESC-ID Lisboa, Portugal

Dynamic Adaptation of Byzantine Consensus Protocols
Carlos Carvalho, INESC-ID, Portugal
Daniel Porto, INESC-ID, Portugal
Luís Rodrigues, INESC-ID, Portugal
Manuel Bravo, INESC-ID, Portugal
Alysson Bessani, LaSIGE, Portugal

Program Understanding using Ontologies and Dynamic Analysis
Javier Belmonte, eKlore Srl, Switzerland
Philippe Dugerdil, HE5-80, Switzerland

Formal Verification of Energy and Timed Requirements for a Cooperative Automotive System
Eun-Young Kang, Sun Yat-Sen University, China
Li Huang, Sun Yat-Sen University, China
Dongrui Mu, Sun Yat-Sen University, China

Improving Function Coverage with Munch: A Hybrid Fuzzing and Directed Symbolic Execution Approach
Saahil Ognawala, Technical University of Munich, Germany
Thomas Hützelmann, Technical University of Munich, Germany
Eirini Psalida, Technical University of Munich, Germany
Alexander Pretschner, Technical University of Munich, Germany

Test-Case Generation for Web-Service Clients
Andreas Fuchs, University of Münster, Germany
Herbert Kuchen, University of Münster, Germany

A Collaborative Filtering Recommender System for Test Case Prioritization in Web Applications
Maral Azizi, University of North Texas, USA
Hyunsook Do, University of North Texas, USA

LiMe: Linear Methods for Pseudo-Relevance Feedback
Daniel Valcarce, University of A Coruña, Spain
Javier Parapar, University of A Coruña, Spain
Álvaro Barreiro, University of A Coruña, Spain
Towards a Fault-Detection Benchmark for Evaluating Software Product Line Testing Approaches
Stefan Fischer, Johannes Kepler University Linz, Austria
Johannes Kepler University Linz, Austria
Alexander Egyed, Johannes Kepler University Linz, Austria

Physical Separation of Features: A Survey with CPP Developers
Jacob Krüger, Harz University of Applied Sciences and Otto-von-Guericke University Magdeburg, Germany
Kai Ludwig, Harz University of Applied Sciences, Germany
Bernhard Zimmermann, Harz University of Applied Sciences, Germany
Thomas Leich, Harz University of Applied Sciences, Germany

Engineering Configurators for the Retail Industry: Experience Report and Challenges Ahead
Maxime Cordy, University of Namur, Belgium
Patrick Heymans, University of Namur, Belgium

Visual Guidance for Product Line Configuration using Recommendations and Non-Functional Properties
Juliana Alves Pereira, University of Magdeburg, Germany
Jabier Martinez, University Pierre et Marie Curie, France
Sebastian Krieter, University of Magdeburg, Germany

Assessing the Functional Feasibility of Variability-Intensive Data Flow-Oriented Systems
Sami Lazreg, University Côte d'Azur, France
Philippe Collet, Université Côte d'Azur, France
Sébastien Mosser, Université Côte d'Azur, France

Thursday April 12, 2018

Thu 9:25–10:40
Room: Alfred de Vigny Auditorium
Keynote Address
Dr. Michael P. Papazoglouholds
See page 9 for details.
Blind Attribute Pairing for Privacy-Preserving Record Linkage
Thiago Pereira da Nóbrega, UFCG, Brazil
Carlos Eduardo S. Pires, UFCG, Brazil
Tiago Brasileiro Araújo, UFCG, Brazil
Demetrio Gomes Mestre, UFCG, Brazil

Comparing Alternative Goal Model Visualizations for Decision Making: an Exploratory Experiment
Sotirios Liaskos, York University, Canada
Teodora Dundjerovic, York University, Canada
Grace Gabriel, University of Toronto, Canada

Andrés Paz, École de Technologie Supérieure, Canada
Ghizlane El Boussaidi, École de Technologie Supérieure, Canada

SafeTrace: A Safety-Driven Requirement Traceability Framework on Device Interaction Hazards for MD PnP
Andrew Yi-Zong Ou, UIUC, USA
Maryam Rahmanianheris, UIUC, USA
Yu Jiang, Tsinghua University, China
Lui Sha, UIUC, USA
Zhicheng Fu, Illinois Institute of Technology, USA
Shangping Ren, Illinois Institute of Technology, USA

A Gamified Requirements Inspection Process for Goal Models
João Pimentel, Universidade Federal Rural de Pernambuco, Brazil
Emanuel Santos, Universidade Federal de Pernambuco, Brazil
Tarcisio Pereira, Universidade Federal de Pernambuco, Brazil
Daniel Pereira, Universidade de Pernambuco, Brazil
Jaelson Castro, Universidade Federal de Pernambuco, Brazil

Layout Cross-Browser Incompatibility Detection using Machine Learning and DOM Segmentation
Fagner Christian Paes, BestCode, Brazil
William Massami Watanabe, UTFP, Brazil

A Web-based Approach using Reactive Programming for Complex Event Processing in Internet of Things Applications
Carlos Zimmerle, Universidade Federal de Pernambuco, Brazil
Kiev Gama, Universidade Federal de Pernambuco, Brazil

A Quality Analysis of Facebook Messenger’s Most Popular Chatbots
Juanan Pereira, University of the Basque Country, Spain
Oscar Díaz, University of the Basque Country, Spain

Gesture4All: A Framework for 3D Gestural Interaction to Improve Accessibility of Web Videos
Marcio Maestrelo Funes, University of São Paulo, Brazil
Tiago Henrique Trojahn, University of São Paulo, Brazil
Renata Pontin Mattos Fortes, University of São Paulo, Brazil
Rudines Goularte, University of São Paulo, Brazil

Extending Model-based Privacy Analysis for the Industrial Data Space by Exploiting Privacy Level Agreements
Amir Shayan Ahmadian, University of Koblenz Landau, Germany
Jan Jürjens, University of Koblenz Landau, Germany
Daniel Strüber, University of Koblenz Landau, Germany

A System of Privacy Patterns for User Control
Michael Colesky, Radboud University, The Netherlands
Julio C. Cuixa, Escuela Politécnica Nacional, Ecuador
José M. Del Álamo, Universidad Politécnica de Madrid, Spain
Jaap-Henk Hoepman, Radboud University, The Netherlands
Yod-Samuel Martin, Universidad Politécnica de Madrid, Spain

To Reveal or Not To Reveal: Balancing User-Centric Social Benefit and Privacy in Online Social Networks
Sourya Joyee De, LORIA-INRIA Nancy Grand-Est, France
Abdessamad Imine, Lorraine University, LORIA-INRIA Nancy Grand-Est, France

Helping John to Make Informed Decisions on Using Social Login
Farzaneh Karegar, Karlstad University, Sweden
Nina Gerber, Technische Universität Darmstadt, Germany
Melanie Volkamer, Technische Universität Darmstadt, Sweden
Simone Fischer-Hübner, Karlstad University, Sweden

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A Web-based Approach using Reactive Programming for Complex Event Processing in Internet of Things Applications
Carlos Zimmerle, Universidade Federal de Pernambuco, Brazil
Kiev Gama, Universidade Federal de Pernambuco, Brazil
(WT) Customising LOD Views: A Declarative Approach
Alice Graziosi, University of Bologna, Italy
Angelo Di Iorio, University of Bologna, Italy
Francesco Poggi, University of Bologna, Italy
Silvio Peroni, University of Bologna, Italy
Luca Bonini, University of Bologna, Italy

(SWA) Fuzzy Ontologies for Search Results Diversification: Application to Medical Data
Ghada Besbes, University of Manouba, Tunisia
Hajer Baazaoui-Zghal, University of Manouba, Tunisia

(SWA) Knowledge Base Completion using Distinct Subgraph Paths
Sameh K. Mohamed, National University of Ireland, Galway
Vít Nováček, National University of Ireland, Galway, Ireland
Pierre-Yves Vandebussche, Fujitsu Ireland Ltd., Ireland

(THU) 14:20 – 16:00
Room: Gérard de Nerval
(RS-1) Recommender Systems
Session Chair: Yong Zheng, IIT, USA

Investigating Serendipity in Recommender Systems based on Real User Feedback
Denis Kotkov, University of Jyväskylä, Finland
Christian Morbidoni, Università Politecnica delle Marche, Italy
Giovanni Stilo, Sapienza University of Rome, Italy
Paola Velardi, Sapienza University of Rome, Italy

What to Write and Why: A Recommender for News Media
Alessandro Cucchiarelli, Università Politecnica delle Marche, Italy
Giovanni Stilo, Sapienza University of Rome, Italy
Paola Velardi, Sapienza University of Rome, Italy

A Hybrid Approach to Music Playlist Continuation based on Playlist-Song Membership
Andreu Vall, Johannes Kepler University, Austria
Matthias Dorfer, Johannes Kepler University, Austria
Markus Schell, Johannes Kepler University, Austria
Gerhard Widmer, Johannes Kepler University, Austria

Explicit or Implicit Feedback? Engagement or Satisfaction? A Field Experiment on Machine-Learning-Based Recommender Systems
Qian Zhao, University of Minnesota, USA
F. Maxwell Harper, University of Minnesota, USA
Gediminas Adomavicius, University of Minnesota, USA
Joseph A. Konstan, University of Minnesota, USA

(THU) 16:30 – 18:10
Room: Alphonse de Lamartine
(SVT-3) Software Verification and Testing
Session Chair: Leonardo Mariani, University of Milano Bicocca, Italy

Generating Minimal Test Set Satisfying MC/DC Criterion via SAT based Approach
Ling Yang, Chinese Academy of Sciences, China
Jun Yan, Chinese Academy of Sciences, China
Jian Zhang, Chinese Academy of Sciences, China

Korat-API: A Framework to Enhance Korat to Better Support Testing and Reliability Techniques
Nima Dini, University of Texas at Austin, USA
Cagdas Yelen, University of Texas at Austin, USA
Zakaria Alrmah, University of Texas at Austin, USA
Amresh Kulkarni, University of Texas at Austin, USA
Sarfraz Khurshid, University of Texas at Austin, USA

AutoPUT: An Automated Technique for Retrofitting Closed Unit Tests into Parameterized Unit Tests
Keita Tsukamoto, The University of Tokyo, Japan
Yuta Maenawa, National Institute of Informatics, Japan
Shinichi Honiden, The University of Tokyo, Japan

A Graph Partitioning-based Heuristic for Runtime IoT Data Placement Strategies in a Fog Infrastructure
Mohammed Islam Naas, Orange Labs, France
Laurent Lemarchand, Université de Bretagne Occidentale, France
Jailil Boukhobza, Université de Bretagne Occidentale, France
Philippe Raipin, Orange Labs, France

Lightweight Secure Bootstrap and Message Attestation in the Internet of Things
Clémence Gritti, EURECOM Sophia Antipolis, France
Refik Molva, EURECOM Sophia Antipolis, France
Melek Önen, EURECOM Sophia Antipolis, France

Hybrid Controller Synthesis for the IoT
Arthur Gatouillat, INSA-Lyon, France
Youakim Badr, INSA-Lyon, France
Bertrand Massot, INSA-Lyon, France

FI-MApp: A Web Application for Managing FI-WARE Environments in Internet of Things
Phelipe Feio, Federal University of Pará, Brazil
José Neto, Federal University of Pará, Brazil
Vagner Nascimento, Federal University of Pará, Brazil
Antônio Abelém, Federal University of Pará, Brazil

FI-MApp: A Web Application for Managing FI-WARE Environments in Internet of Things
Phelipe Feio, Federal University of Pará, Brazil
José Neto, Federal University of Pará, Brazil
Vagner Nascimento, Federal University of Pará, Brazil
Antônio Abelém, Federal University of Pará, Brazil

(THU) 16:00 – 16:30
Coffee Break
Model-Driven Adaptation of Service Choreographies
Marco Autili, University of L'Aquila, Italy
Amleto Di Salle, University of L'Aquila, Italy
Francesco Gallo, University of L'Aquila, Italy
Claudio Pompilio, University of L'Aquila, Italy
Massimo Tivoli, University of L'Aquila, Italy

Improving the Detection of Architectural Evolutionary Coupling: An Approach Considering Sliding Verification
Marcelo Machado, Military Engineering Institute, Brazil
Ricardo Choren, Military Engineering Institute, Brazil

Reconstruction of Execution Architecture View using Dependency Relationships and Execution Traces
Hwi Ahn, KAIST, South Korea
Sungwon Kang, KAIST, South Korea
Seonah Lee, Gyeongsang National University, South Korea

Enabling Temporal-Aware Contexts for Adaptive Distributed Systems
Ludovic Mouline, University of Luxembourg, Luxembourg
Amine Benelallam, INRIA Rennes, France
Thomas Hartmann, University of Luxembourg, Luxembourg
François Fouquet, University of Luxembourg, Luxembourg
Johann Bourcier, INRIA Rennes, France
Brice Morin, SINTEF, Norway
Olivier Barais, INRIA Rennes, France

RDF Shape Induction using Knowledge Base Profiling
Nandana Mihindukulasooriya, Universidad Politécnica de Madrid
Mohammad Rifat Ahmmad Rashid, Politecnico di Torino, Italy
Giuseppe Rizzo, Instituto Superiore Mario Boella, Italy
Raúl García-Castro, Universidad Politécnica de Madrid, Spain
Oscar Corcho, Universidad Politécnica de Madrid, Spain
Marco Torchiano, Politecnico di Torino, Italy

Measuring Structural Similarity between RDF Graphs
Pierre Mailiot, IRISA/Université Rennes 1, France
Carlos Bobed, IRISA/Université Rennes 1, France

EffTE: A Dependency-aware Approach for Test-Driven Ontology Development
Lavdim Halilaj, University of Bonn and Fraunhofer IAIS, Germany
Irlán Grangel-González, University of Bonn and Fraunhofer IAIS
Steffen Lohmann, Fraunhofer IAIS, Germany
Maria-Ester Vidal, Fraunhofer IAIS, Germany
Sören Auer, National Library of Science and Technology, Germany

Predicting the Possibilistic Score of OWL Axioms through Modified Support Vector Clustering
Dario Malchiodi, Università degli Studi di Milano, Italy
Andrea G.B. Tettamanzi, University of Côte d'Azur, France

Human Uncertainty and Ranking Error – Fallacies in Metric-Based Evaluation of Recommender Systems
Kevin Jasberg, University of Duiseldorf, Germany
Sergej Sizov, University of Duiseldorf, Germany

Situation-Dependent Combination of Long-Term and Session-Based Preferences in Group Recommendations: An Experimental Analysis
Thuy Ngoc Nguyen, Free University of Bozen-Bolzano, Italy
Francesco Ricci, Free University of Bozen-Bolzano, Italy

Active Learning in Multi-Domain Collaborative Filtering Recommender Systems
Xin Guan, University of Warwick, UK
Chang-Taun Li, Charles Sturt University, Australia
Yu Guan, Newcastle University, UK

MovieExplorer: Building an Interactive Exploration Tool from Ratings and Latent Taste Spaces
Taavi T. Taijala, University of Minnesota, USA
Joseph A. Konstan, University of Minnesota, USA
IoT based Monitoring of Container Vehicle for Secure and Reliable Delivery of Goods
Satish Kumar R, Government College of Engineering Salem, India
Rani C, Government College of Engineering Salem, India
Ganesh Kumar P, Anna University Regional Campus, India

Segmentation of Affected Skin Lesion with Blind Deconvolution and L*a*b Colour Space
Imran Ahmed, Institute of Management Sciences, Pakistan
Qazi Nida ur Rehman, Institute of Management Sciences, Pakistan
Awais Adnan, Institute of Management Sciences, Pakistan
Awais Ahmad, Yeungnam University, South Korea
Seungmin Rho, Sungkyul University, South Korea

Understanding Data Dimensions by Cluster Visualization using Edge Bundling in Parallel Coordinates
Rodrigo Santos do Amor Divino Lima, FUP, Brazil
Carlos Gustavo Resque dos Santos, FUP, Brazil
Sandro de Paula Mendonça, Federal University of Pará, Brazil
Jefferson Magalhães de Morais, Federal University of Pará, Brazil
Bianchi Serique Meiguins, Federal University of Pará, Brazil

MOVELETS: Exploring Relevant Subtrajectories for Robust Trajectory Classification
Carlos Andres Ferrero, UFSC, Brazil
Luis Otavio Alvares, UFSC, Brazil
William Zalewski, UFIAL, Brazil
Vania Bogorny, UFSC, Brazil

An Efficient Hybrid SVDD/Clustering approach for Anomaly-based Intrusion Detection
Tayeh Kenaza, Ecole Militaire Polytechnique, Algeria
Khadija Benaceur, Ecole Nationale Préparatoire aux Etudes d’Ingéniorat, Algeria
Abdenour Labed, Ecole Militaire Polytechnique, Algeria

Jiazhen Chen, University of Auckland, New Zealand
Gillian Dobbie, University of Auckland, New Zealand
Yun Sing Koh, University of Auckland, New Zealand
Elizabeth Somervell, NIWAR, New Zealand
Gustavo Olivares, NIWAR, New Zealand

An Educational Environments
Ana Carolina Tomé Klock, Federal University of Rio Grande Sul
Aline Nunes Ogawa, Santa Catarina State University, Brazil
Isabela Gasparini, Santa Catarina State University, Brazil
Marcelo Soares Pimenta, Federal University of Rio Grande do Sul

Usa-DSL: Usability Evaluation Framework for Domain-Specific Languages
Ildevana Poltronieri, PCURGS, Brazil
Avelino Francisco Zorza, PCURGS, Brazil
Maicon Bernardino, Federal University of Pampa, Brazil
Marcia de Borba Campos, PCURGS, Brazil

Accessibility and Usability Problems Encountered on Websites and Applications in Mobile Devices by Blind and Normal-Vision Users
Michael Cristian Nepomuceno Carvalho, UFL, Brazil
Felipe Silva Dias, UFL, Brazil
Alme Grazielle Silva Reis, UFL, Brazil
André Pimenta Freire, UFL, Brazil

An On the Behavior of the Infinite Restricted Boltzmann Machine for Clustering
Nikolas A. Huhnstock, University of Skövde, Sweden
Alexander Karlsson, University of Skövde, Sweden
Marcus Eiver, University of Skövde, Sweden
H. Joe Steinhauser, University of Skövde, Sweden
<table>
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<th>Time</th>
<th>Session</th>
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| FRI 9:00 – 10:40 | Room: Gérard de Nerval  
(WCN-1) Wireless Communications and Networking  
**Session Chair**: Dongkyun Kim, Kyungpook National University, South Korea |
| FRI 10:40 – 11:10 | Coffee Break                                                                                   |
| FRI 11:10 – 12:25 | Room: Alphonse de Lamartine  
(HCI-2) Smart Human Computer Interaction  
**Session Chair**: Ganesh Kumar P., Anna University, India |
| FRI 11:10 – 12:25 | Room: Aristide de Monpezat  
(SP) Software Platforms  
**Session Chair**: Jinman Jung, Hanham University, Korea |

**BIRD**: Bio-Inspired Distributed Interest Forwarding in Vehicular Named-Data Networks  
Muhammad Azfar Yaqub, Kyungpook National University, Korea  
Syed Hassan Ahmed, University of Central Florida, USA  
Dongkyun Kim, Kyungpook National University, Korea

Dynamic Control of Beacon Transmission Rate and Power with Position Error Constraint in Cooperative Vehicular Networks  
Sandy Bolufe, Universidad de Chile, Chile  
Samuel Montejo-Sánchez, Universidad de Chile, Chile  
Cesar A. Azurdia-Meza, Universidad de Chile, Chile  
Sandra Céspedes, Universidad de Chile, Chile  
Richard Demo Souza, Federal University of Santa Catarina, Brazil  
Evelio M.G. Fernandez, Federal University of Parana, Brazil

A Centralized Channelization Scheme for Wireless LANs Exploiting Channel Bonding  
Made Harta Dwijakara, Seoul National University, Korea  
Wha Sook Jeon, Seoul National University, Korea  
Dong Geun Jeong, Hankuk University of Foreign Studies, Korea

A Distributed Online Certificate Status Protocol for Named Data Networks  
Daniel Rezende, Federal University of Paraná, Brazil  
Carlos Maziero, Federal University of Paraná, Brazil  
Elisa Mannes, Federal University of Paraná, Brazil

**Impact of Web Design Features on Irritation for E-commerce Websites**  
C.M. Nadeem Faisal, National Textile University, Pakistan  
Javier de Andres-Suarez, University of Oviedo, Spain  
Martin González-Rodríguez, University of Oviedo, Spain  
Daniel Fernández-Lanvin, University of Oviedo, Spain  
Muhammad Asif Habib, National Textile University, Pakistan

**IoT based Smart Interaction Framework for eLearning**  
Sohail Jabbar, National Textile University, Pakistan  
Muhammad Farhan, COMSATS IIT, Pakistan  
Jin Li, Guangzhou University, China  
Haseeb Ahmad, National Textile University, Pakistan  
Awais Ahmad, Yeungnum University, South Korea

**Supporting Micro-services Deployment in a Safer Way: a Static Analysis and Automated Rewriting Approach**  
Benjamin Bennis, Université Côte d’Azur, France  
Sébastien Mosser, Université Côte d’Azur, France  
Philippe Collet, Université Côte d’Azur, France  
Michel Riveill, Université Côte d’Azue, France

**On the Structure and Authorization Management of RESTful Web Services**  
Bojan Suzic, Graz University of Technology, Austria  
Bernd Prünster, Graz University of Technology, Austria  
Dominik Ziegler, Know-Center GmbH, Austria

**Query Strategies on Polyglot Persistence in Microservices**  
Luis H.N. Villaça, UFERJ, Brazil  
Leonardo G. Azevedo, UFERJ, Brazil  
Fernanda Baião, UFERJ, Brazil

**A New Architecture and Implementation Strategy for Non-Invasive Software Measurement Systems**  
Anton Bykov, Inнополис University, Russia  
Vladimir Ivanov, Inнополис University, Russia  
Alan Rogers, Inнополис University, Russia  
Alexandr Shunevich, Inнополис University, Russia  
Alberto Sillitti, Inнополис University, Russia  
Giancarlo Succi, Inнополис University, Russia  
Alexander Tommasov, Inнополис University, Russia  
Jooyong Yi, Inнополис University, Russia  
Albert Zabirov, Inнополис University, Russia  
Denis Zaplatnikov, Inнополис University, Russia
Development of a Plugin based Extensible Feature Extraction Framework
Vikas Malviya, IIITDM, Jabalpur, India
Sawan Rai, IIITDM, Jabalpur, India
Atul Gupta, IIITDM, Jabalpur, India

Smart IoT Monitoring Framework based on One M2M for Fog Computing
Jeongwoo Choi, Soongsil University, South Korea
Yongmin Kim, Soongsil University, South Korea
Sung-Y. Shin, South Dakota State University, USA
Jiman Hong, Soongsil University, South Korea

Weight-based Search to Find Clusters around Medians in Subspaces
Sergio Peignier, INSA/LIRIS/INRIA, France
Christophe Rigotti, INSA/LIRIS, France
Anthony Rossi, INRIA, France
Guillaume Beslon, INSA/LIRIS/INRIA, France

Error Analysis and Topology Modifications of a Self-Organizing Incremental Neural Network
Xiaoyu Wang, Tokyo Institute of Technology, Japan
Osamu Hasegawa, Tokyo Institute of Technology, Japan
Shiming Ge, Chinese Academy of Sciences, China

Cooperative Neighborhood Map in VANETs
Hermes Pimenta de Moraes Júnior, UTC, France
Bertrand Doucourthial, UTC, France

Identification of Anchor Zones for Floating Content in VaNETs based on Centrality Measures
Fábio Massalino, Federal University of Alagoas, Brazil
André L.L. Aquino, Federal University of Alagoas, Brazil

Energy-Efficient Unequal Chain Length Clustering for WSN
Mhanwo Heo, Soongsil University, South Korea
Mohammad Baniata, Soongsil University, South Korea
Jinwoo Lee, Soongsil University, South Korea
Jue Won Park, University of Louisville, USA
Jiman Hong, Soongsil University, South Korea

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Jinwoo Lee, Soongsil University, South Korea
Jue Won Park, University of Louisville, USA
Jiman Hong, Soongsil University, South Korea
(CCS) A Pipelining-based Framework for Processing Events in Multimedia Sensor Networks
Chinnapong Angsuchotmetee, Richard Chbeir, Yudith Cardinale, and Shohei Yokoyama

(DADS) Modeling and Verifying SDN with Multiple Controllers
Lili Xiao, Shuangqing Xiang, and Huibiao Zhu

(DADS) Safe and Efficient Fleet Operation for Autonomous Machines: An Actor-based Approach
Ali Jafari, Jayasothy Jayanthi Surendran Nair, Stephan Baumgart, and Marjan Sirjani

(DADS) Trigger Correlation for Dynamic System Reconfiguration
Mahin Abbaspour, Ferhat Khendek, and Maria Toeroe

(IoT) AffectiveROAD System and Database to Assess Driver’s Attention
Neska El Haouij, Jean-Michel Poggi, Sylvie Sevestre-Ghalila, Raja Ghoni, and Mériem Jaidane

(MCA) On the I/O Characteristics of the Mobile Web Browsers
Taeho Hwang, Myunguk Kim, Seoungin Lee, and Youjip Won

(MCA) MaEl A Service for Supporting People Meeting at Events
Wender Z. Xavier, Mateus P. Silveira, Josemar A. Caetano, and Humberto T. Marques-Neto

(NET) Topology Resilience Enhancement for Software Defined Networks
Pedro Montibeler, Fernando Farias, and Antônio Abelém

(NET) Investigation of Priority Queueing Systems with Peaked Traffic Flows
Seferin Mirtchev, Rossitza Goleva, Dimitar Atamian, and Ivan Ganchev

(SONAMA) Emoji Recommendation in Private Instant Messages
Gaël Guibon, Magalie Ochs, and Patrice Bellot

(SONAMA) Unsupervised Translated Word Sense Disambiguation in Constructing Bilingual Lexical Database
Htet Myet Lynn, Chang Choi, and Pankoo Kim

(SONAMA) Using an Agent-based Model to Measure the Message Repetition Effect on Twitter
Paul Leger, Carmen Hidalgo-Acizázar, and Manuela López

(WCN) Energy Saving on DTNs using Trajectory Inference Model
António Rodrigo D. De Vit, César Marcon, Raul Ceretta Nunes, Thais Webber, Gustavo Sanchez, and Carlos Oberdan Rolim

(WCN) SDN for QUIC: An Enhanced Architecture with Improved Connection Establishment
Ali Hussein, Ayman Kayssi, Imaad H. Elhajj, and Ali Chehab

(WED 16:00 - 18:10
Poster Session II
(Wright Open Space)

(BFMEA) A Method for Developing Model to Text Transformations
Alessandro Tiso, Gianna Beggio, Maurizio Leotta, and Filippo Ricca

(DM) A Quality Control Method for Fraud Detection on Utility Customers without an Active Contract
Bernat Coma-Puig and Josep Carmona

(DS) Predicting Polarities of Entity-Centered Documents without Reading their Contents
Christian Beyer, Uli Niemann, Vishnu Unnikrishnan, Kirini Moutsi, and Myra Spiliopoulou

(DS) Co-training Study for Online Regression
Ricardo Sousa and João Gama

(IAR) Automatic Keyphrase Extraction using Graph-based Methods
Josiane Mothe, Fanève Ramia-ndriamiasoa, and Michael Rasolomanana

(SOAP) From the Decorator Pattern to Circuit Breakers in Microservices
Fabrizio Montesi and Janine Weber

(SWA) Seamless Integration of Cyber-Physical Systems in Knowledge Graphs
Irland Grangel-González, Lavdim Halilaj, Maria-Esther Vidal, Steffen Lohmann, Sören Auer, and Andreas W. Mueller

(WT) Hiphop.js: A Language to Orchestrate Web Applications
Colin Vidal, Gérard Berry, and Manuel Serrano

(RE) Applying a Requirement Engineering based Approach to Evaluate the Security Requirements Engineering Methodologies
Sravani Teja Bulusu, Romain Laborde, Ahmad Sameer Wazan, Francois Barrere, and Abdelmalek Bennakri

(RS) A Label Ranking Approach for Selecting Rankings of Collaborative Filtering Algorithms
Tiago Cunha, Carlos Soares, and André C.P.L.F. de Carvalho

(RS) Knowing the Unknown: Visualising Consumption Blind-Spots in Recommender Systems
Nava Tintarev, Shahin Rostami, and Barry Smyth

(SATTA) A Hybrid Architecture to Enrich Context Awareness through Data Correlation
Roger Machado, Felipe Rosa, Ricardo Almeida, Tiago Primo, Mauricio Pilla, Ana Pernas, and Adenauer Yamin
(SATTa) Recovering Runtime Architecture Models and Managing their Complexity using Dynamic Information and Composite Structures
Soumia Zellagui, Chouki Tibermacine, Ghizlane El Boussaïdi, Abdelhak-Djamel Seriai, Hinde-Lilia Bouziane, and Christophe Dony

(SATTa) Lessons Learned from Adapting “Things” to IoT Platforms in Research and Teaching
Ulrik Ekedahl, Radu-Casian Mihailescu, and Zhizhong Ma

(SATTa) Back-SoS: Towards a Model-based Approach to Address Architectural Drift in Systems-of-Systems
Valdemar V. Graciano Neto, Wallace Manzano, Lina Garrés, Milena Guessi, Bruner Oliveira, Tiago Volpato, and Elisa Yumi Nakagawa

(SE) FancyMock: Creating Virtual Services from Transactions
Hasan Ferit Eniser, Alper Sen, and Süleyman Olcay Polat

(SiSoS) Heterogeneous Design Models Alignment: From Matching to Consistency Management
Mahmoud El Hamlaoui, Saloua Bennani, Mahmoud Nassar, Sophie Ebersold, and Bernard Coulette

Mingyu Jin, Donghwan Shin, and Do-Hee Bae

(SP) Role-based Automatic Programming Framework for Interworking a Drone and Wireless Sensor Networks
Hong Min, Jinman Jung, Seoyeon Kim, Bongjae Kim, and Junyoung Heo

(UE) Experience Report: Studying the Readability of a Domain Specific Language
Johann Thor Mogensen Ingibergsson, Stefan Hanenberg, Joshua Sunshine, and Ulrik Pagh Schultz

(EMBS) A Partnership-Based Approach to Minimize the Maximal Response Time of Flash-Memory Storage Systems
Tse-Yuan Wang, Che-Wei Tseao, Yuair-Hao Chang, Tei-Wei Kuo, and Hsiang-Pang Li

(OOPPS) Automatic Scalable Parallel Test Case Execution, Introducing the Minster DiStributed Test Case Runner for Java (MiDSTR)
Vincent von Hof and Andreas Fuchs

(OOPPS) CBM: A Compact Representation and its Parallel Search for Query Processing on GPU
Chidchanok Choksuchat, Sergei Gorlatch, and Chantana Chantharaphornchai

(OS) A Cost-Aware Object Management Method for In-Memory Computing Frameworks
Chin-Hsien Wu, Chien-Wei Chen, and Kai-Chun Wang

(OS) UFLRU: Unmapped File First LRU Scheme for Non-Volatile Memory
Yeonjin Noh, Jinsoo Yoo, Seongjin Lee, and Youjip Won

(OS) Investigating the Performance Impacts of I/O Operations and Disk Cache on Operating Systems for Wearables
Vicente J.P. Amorim, Saul E. Delabrida, and Ricardo A.O. Oliveira

(PDP) Effective and Efficient Privacy Threat Modeling through Domain Refinements
Kim Wuyts, Dimitri Van Landuyt, Aram Hovespyan, and Wouter Joosen

(PDP) AppPETs: A Framework for Privacy-Preserving Apps
Erik Sy, Tobias Mueller, Matthias Marx, and Dominik Herrmann

(PL) Buffered Garbage Collection for Self-Reflective Customization
Tetsuro Yamazaki and Shigeru Chiba

Student Research Competition Program

Samson Akwafuo

(BIO) Student Research Abstract: Simulation Study of Transient Receptor Potential Current in Urinary Bladder over Activity
Chitaranjan Mahapatra

(CC) Student Research Abstract: Curtailing the Cost of Virtual Machine Migrations in Cloud Data Centers
M.P. Gilesh

(DADS) Student Research Abstract: IT-Security in Self-Organizing Decentralized Virtual Power Plants
Marius Stübs

(DM) Student Research Abstract: On Improving ROCK-based Clustering for Categorical Data
Riccardo Cappuzzo

(DTDA) Student Research Abstract: A Clustering-based Sales Forecast for Fashion Retailing
Graziele Marques Mazuco dos Santos

(HCI) Student Research Abstract: Human Behavior Analysis based on Big Data Analytics in Cyber-Physical System
Sadia Din

(IoT) Student Research Abstract: A Novel Low Power Brain Electrical Activity Monitor using IoT
Alexandre Tessier
(IRMAS) Student Research Abstract: Cooperative Routing with Refueling for Aerial and Ground Vehicles for Large Scale Surveillance
Parikshit Maini

(KEGeoD) Student Research Abstract: Quantifying Walkability of Roads using Digital Elevation Models
Faris Hawamdeh

(KRR) Student Research Abstract: Concept Maps Construction using Natural Language Processing to Support Studies Selection
Vinicius dos Santos

(OOPPS) Student Research Abstract: Node-Level Optimization by Caching Data and Choosing the Optimal Tile Size for Parallel Dense Linear Algebra on Distributed Systems
Yonghyun Ryu

(SATTA) Student Research Abstract: A Liquid Software-driven Semantic Complex Event Processing-based Platform for Health Monitoring
Francesco Nocera

(SE) Student Research Abstract: Leveraging Project-Specificity to Find Suitable Specifications
Robert Heumüller

(SE) Student Research Abstract: A Formally Assured Intelligent Ecosystem for Enhanced Ambient Assisted Living Support
Ashalatha Kunnappilly

(SiSoS) Student Research Abstract: Collaborative Processes Behavioral Modeling
Mamadou Lakhassane Cissé

(VSPL) Student Research Abstract: Separation of Concerns: Experiences of the Crowd
Jacob Krüger

(WCN) Student Research Abstract: Energy Efficient Topology Management Scheme from Wireless Sensor and Ad-hoc Network
Muhammad Bhyan

(WT) Student Research Abstract: Classification Pipeline for Automatic Identification of Widgets and its Parts
Eduardo Henrique Rizo

**SAC 2019 INVITATION**

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End of Program