ACM SAC 2023

The 38th Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2023 ACM
SYMPOSIUM ON APPLIED COMPUTING
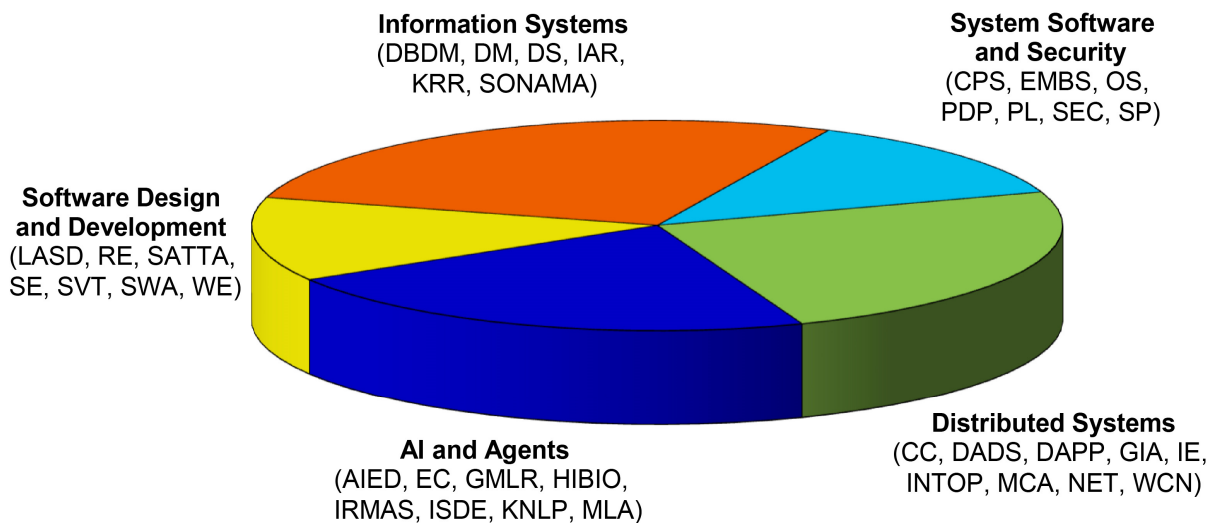
Tallinn, Estonia
March 27 – March 31, 2023

Organizing Committee

Peeter Normak
Mart Laapere
Tomas Cerny
Gunnar Piho
Hossain Shahriar

Daniel Irabien Peniche
Junyoung Heo
John Kim
Jiman Hong
Juri Uljas

Juw Won Park
Lenuta Alboaie
Mati Mottus
Vladimir Tomberg
Sirli Peda

Information Systems
(DBDM, DM, DS, IAR,
KRR, SONAMA)

**System Software
and Security**
(CPS, EMBS, OS,
PDP, PL, SEC, SP)

**Software Design
and Development**
(LASD, RE, SATTA,
SE, SVT, SWA, WE)

Distributed Systems
(CC, DADS, DAPP, GIA, IE,
INTOP, MCA, NET, WCN)

AI and Agents
(AIED, EC, GMLR, HIBIO,
IRMAS, ISDE, KNLP, MLA)

**Hosted by
Tallinn University, Estonia**

The 38th Annual ACM Symposium on Applied Computing

March 27 – March 31, 2023

HONORABLE CONFERENCE CHAIR
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****** SAC 2023 at Glance ******

Monday 3/27/2023	Tuesday 3/28/2023	Wednesday 3/29/2023	Thursday 3/30/2023	Friday 3/31/2023
	Opening & Keynote Session (09:30 – 10:40) Coffee Break (10:40 – 11:10) AM Breakout Sessions (11:10 – 12:30)	AM Breakout Sessions (9:00 – 10:30) Coffee Break (10:30 – 11:00) AM Breakout Sessions (11:00 – 12:30) AM Posters Session (10:30 – 12:30)	*Keynote Session* (09:30 – 10:30) Coffee Break (10:30 – 11:00) AM Breakout Sessions (11:00 – 12:30)	SIGAPP Wrap-up Meeting (09:30 – 10:30) Future of Applied Computing & Convergence of AI (10:30 – 12:30) Track Chairs Business Meeting (10:30 – 12:30)
	SAC Luncheon For all Registered Attendees (12:30 – 14:00) At Researchers Forum	SAC Luncheon For all Registered Attendees (12:30 – 14:00) At Researchers Forum	SAC Luncheon For all Registered Attendees (12:30 – 14:00) At Researchers Forum	The Conference Ends at 12:30.
Tutorials (14:00 – 17:30) Tutorials Program Coffee Break (15:30 – 16:00)	PM Breakout Sessions (14:00 – 15:30) Coffee Break (15:30 – 16:00) PM Breakout Sessions (16:00 – 18:00) SRC Posters Exhibit (14:00 – 16:00)	PM Breakout Sessions (14:00 – 15:30) Coffee Break (15:30 – 16:00) PM Breakout Sessions (16:00 – 18:00) PM Posters Session (14:30 – 16:30)	PM Breakout Sessions (14:00 – 15:30) Coffee Break (15:30 – 16:00) PM Breakout Sessions (16:00 – 18:00) SRC Oral Presentations (16:00 – 18:00)	
	SIGAPP Annual Business Meeting (18:00 – 18:30) SIGAPP Reception (19:00 – 21:00) At Researchers Forum	Future SAC Organization Meeting (18:00 – 19:00)	SAC Banquet (19:00 – 22:30) At Lennusadam (Maritime Museum)	

**** SAC 2023 Session Schedule ****

Monday March 27, 2023
Tutorial Sessions – Please see more on Tutorials Page

Tuesday March 28, 2023				
Room	9:30am – 10:40am	11:10am – 12:30pm	2:00pm - 3:30pm	4:00pm - 6:00pm
A325	Opening/Keynote #1 (Plenary hall : A002)	AIED(3)	GMLR(4)	IRMAS(5)
A121		MCA(2)	WCN(4)	NET(2)/INTOP(3)
A402		PDP(2)	OS-1(4)	OS-2(2)/SP(3)
A346		IAR(2)	KRR-1(4)	SONAMA(5)
A224		WE(3)	SWA(4)	SE(5)
A046			SRC Poster Exhibit (2:00-4:00pm)	

Wednesday March 29, 2023				
Room	9:00am – 10:30am	11:00am – 12:30pm	2:00pm - 3:30pm	4:00pm - 6:00pm
A325	MLA(4)	MLA(4)	MLA(4)	MLA(5)
A121	IE-1(4)	IE-2(4)	DADS-1(4)	DADS-2(3)/GIA(2)
A402	SEC-1(4)	SEC-2(4)	EMBS(4)	CPS(5)
A346	DS(4)	DBDM(5)		SRC ORAL Presentation
A224	SATTA(3)	LASD(5)	RE(3)	SVT(5)
A046	AM Poster Session (10:30am-12:30pm)		PM Poster Session (2:30-4:30pm)	

Thursday March 30, 2023				
Room	9:30am – 10:30am	11:00am – 12:30pm	2:00pm - 3:30pm	4:00pm - 6:00pm
A325	Keynote #2 (Plenary hall : A002)	EC(2)	HIBIO-1(4)	HIBIO-2(4)
A121		CC(4)	DAPP-1(4)	DAPP-2(3)
A402		PL(3)	KNLP-1(4)	KNLP-2(3)
A346		DM(4)	ISDE-1(4)	ISDE-2(2)/KRR-2(1)

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

Themes and their Tracks	
AI & Agents (8)	AIED(3), EC(2), HIBIO(8), GMLR(4), IRMAS(5), ISDE(6), MLA(17), KNLP(7)
Distributed Systems (9)	CC(4), DADS(7), DAPP(7), GIA(2), IE(8), INTOP(3), MCA(2), NET(2), WCN(4)
Information Systems (6)	DBDM(5), DM(4), DS(4), IAR(2), KRR(5), SONAMA(5)
Software Design & Development (7)	LASD(5), RE(3), SATTA(3), SE(5), SVT(5), SWA(4), WE(3)
System Software & Security (7)	CPS(5), EMBS(4), OS(6), PDP(2), PL(3), SEC(8), SP(3)

- Theme (# of Tracks) / Track Name (# of presentations)

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SAC 2023

Introduction

SAC 2023 is a premier international conference on applied computing and technology. Attendees have the opportunity to hear from expert practitioners and researchers about the latest trends in research and development in their fields. SAC 2016 features two keynote speakers on Tuesday and Thursday, from 9:00 to 10:40. The technical program of the symposium consists of 37 tracks on different research topics, which run from Monday, April 4 through Friday, April 8, 2016. Regular oral presentation sessions start at 9:00 and end at 18:10 in five parallel sessions. Two poster tracks also run on Wednesday, April 6, from 10:40 to 12:50 and from 16:00 to 18:10. In the Student Research Competition (SRC) program, SRC posters display session runs on Tuesday from 14:30 to 18:10 and SRC Presentations session runs on Thursday from 14:30 to 16:30.

ACM SIGAPP

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

Support

Local support for SAC 2023 is provided by Tallinn University and Tallinn University of Technology. Their support has been essential to the success of the Symposium, and it is greatly appreciated. In addition, the City of Tallinn (https://visittallinn.ee) proudly sponsors the conference. Finally, the SAC 2023 Student Research Competition Program is sponsored by ACM.

Symposium Chair Message

Jiman Hong
Conference Chair

Maart Lanperne
Conference Chair

On behalf of the Organizing Committee, we welcome you to the 38th Annual ACM Symposium on Applied Computing (SAC 2023), hosted virtually. 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 2023 offers Technical Tracks and Poster Sessions. The success of the conference can be attributed to the substantial contribution of dedicated Track Chairs and Co-Chairs. Each track maintains a program committee and a set of highly qualified reviewers. We wish to thank the Track Chairs, Co-Chairs, Committee Members and participating reviewers for their hard work and effort to make SAC 2023 a high-quality conference. We also thank our invited keynote speakers Dr. Pekka Abrahamsson from the University of Jyväskylä in Finland, and Dr. Ted Chang, from Quanta Computer known as the world's biggest computer ODM and laptop computer maker in Taiwan. Most of all, we would like to especially thank the authors and presenters for sharing their experience with the rest of us, and all attendees for joining us in Tallinn, Estonia this year.

The organizing committee has been a major contributor to the success of the SAC 2023 conference. Our gratitude goes to the Honorable Conference Chair, Dr. Peeter Normak, the Conference Vice Chair Dr. Juri Uljas, and the Local Arrangement Co-Chairs, Dr. Daniel Irabien Peniche, and Sirli Pdea from Tallinn University, Estonia. We extend our sincere appreciation to the Publication Chair, Dr. Hossain Shahriar, Kennesaw State University, USA, for his tremendous effort in putting together the conference proceedings, to the Posters Chairs, Dr. Lenuta Alboaie, Alexandru Ioan Cuza University, Romania, and Gunnar Piho, Tallinn University of Technology, Estonia for their hard work to make a successful Poster Program, and to the Tutorial Chair Dr. Vladimir Tomberg, Tallinn University, Estonia, and Dr. Mati Mottus, Tallinn University, Estonia, for organizing the Student Research Competition, as well as to Dr. John Kim, Utica University, USA, for playing the roles of treasurer, and Dr. Junyoung Heo, Hansung University, South Korea, for the role of registration chair and webmaster. Also special thanks to our Program Co-Chairs, Dr. Juw Won Park, University of Louisville, USA, and Dr. Tomas Cerny, Baylor University, USA for coordinating and bringing together an excellent Technical Program.

Again, we welcome you to SAC 2023. We hope you enjoy the conference and stay tuned for next year, we invite you to participate in SAC 2024.

Program Chairs Message

Juw Won Park
University of Louisville, Kentucky, USA

Tomas Cerny
Baylor University , Texas, USA

Welcome to the 38th International Symposium on Applied Computing (SAC 2023). For the past 37 years, SAC has become a major international venue for computing researchers and applied practitioners to convene and share ideas on recent developments in a variety of applied areas of information technology. The success of SAC has been the consolidation of a wide range of applied areas into specialized modules called Tracks. Each of the Tracks is then organized and administered by experts in the respective areas by instituting program committees, carrying out blind reviews according to the ACM guidelines, and finally selecting the highly qualified papers for the Track. Since its inception nine 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 2023.

The open Call for Track Proposals and after prescreening the proposals, 35 Tracks were finally accepted for SAC 2023. 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 over 738 final paper submissions from over 50 different countries. The submitted papers underwent the blind review process and 175 submissions were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2023 is (23.8%) for the overall track. In addition to the accepted full papers, 94 submissions that received high enough review scores were accepted as poster papers for the Posters program. The Student Research Competition (SRC) program, sponsored by ACM, is designed to provide students the opportunity to meet and exchange ideas with researchers and practitioners in their areas of interest. 45 submissions were received and finally, 5 (11%) papers were accepted for the SRC program. Student works can be seen at a poster session on Tuesday from 2 to 4 pm.

The Technical Program of SAC 2023 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 2023 Technical Sessions a huge success. Some of the popular Tracks had an unprecedented submissions and having three blind reviews for each paper was certainly a major challenge. Once again this year, we

follow the previous years' tradition in organizing various tracks into five different themes. The Symposium Proceedings and the technical presentations are focused around these themes to form a series of related track sessions. On behalf of the entire SAC 2023 Organizing Committee, we congratulate all the authors for having their papers accepted in their respective Tracks, and we wish to thank all of those who made this year's technical program a great success. Specifically, we wish to thank the speakers, posters chair, track chairs, reviewers, technical program committee members, session chairs, presenters, and all the attendees. We also wish to convey our special thanks to the local organizing committee lead by Tallinn University, Estonia. We wish you have a great time at SAC 2023, and you will have the opportunity to share and exchange your ideas and foster new collaborations. We hope to see you all at SAC 2024.

SAC 2023 Themes

This year SAC tracks are divided into five themes: related themes will be associated to one room, hence related tracks will take place sequentially in the same room in most cases, so as to promote sharing and cross-fertilization of ideas through the whole audience of a theme. Check the program schedule for details. The five themes of SAC 2023 are listed below:

(AIA) AI and Agents: Tracks: AIED, EC, HIBIO, GLMR, IRMAS, ISDE, MLA, KNLP

(DS) Distributed Systems: Tracks: CC, DADS, DAPP, GIA, IE, INTOP, MCA, NET, WCN

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

(SD) Software Design and Development: Tracks: LASD, RE, SATTA, SE, SVT, SWA, WE

(SSS) System Software and Security: Tracks: CPS, EMBS, OS, PDP, PL, SEC, SP

Keynote Speakers
Room: A325

Tuesday, March 28, 2023   9:30 - 10:40 AM

Dr. Ted Chang
Chief Technology Officer (CTO)
Vice President and General Manager,
Quanta Computer

Metaverse that Matters

Abstract

Our world is facing different kinds of challenges from radical climate change, energy, food, water shortage to the rapid growth of elderly population. Moreover, COVID pandemics mare the situation even more complicated. The whole society has urgent needs for new digital innovation to accelerate the smart transformation against all these instant threats in the new zero contact economics. In this talk, we, as world's largest computer maker, shall share our approach to architect an end-to-end cloud platform, by integrating AI, Big Data, Cloud Computing, IoT, Edge Computing, 5G as well as FinTech, to enable Digital Twins and Metaverse as new tools for real world human-centric computing problems that really matters.

Speaker's Bio

Dr. Ted Chang is Chief Technology Officer (CTO), Vice President and General Manager of Quanta Computer, known as the world's biggest computer ODM and laptop computer maker. Along with his role as CTO, he oversees corporate technology strategy and global research partnership. Dr. Chang takes lead of Quanta Research Institute (QRI) for advanced technology research and BU12, a business unit dedicated to AIoT solutions for e-Heath, Smart Medicine and Smart Agriculture.

Appointed by the President of Taiwan (ROC), Dr. Chang has served as the representative to APEC Business Advisory Council (ABAC) since 2019. He serves as Co-Chair of Digital Working Group in ABAC 2022 and as Co-Convenor of Supporting Emergent Technology Taskforce with focus on AI and digital health for ABAC 2021.

Academic wise, Dr. Chang holds various guest professorships in EECS colleges of National Taiwan University (NTU), National Cheng-Kung University (NCKU), Asia University (AU) and AI college of National YangMing Chao-Tung University (NYCU).

Dr. Chang serves as member of the board for Epoch Foundation, Spring Foundation, Quanta Culture and Education Foundation (QCEF), Chines Medical Advancement Foundation and Ming Dao Culture and Education Foundation. He is member of many advisory and project committees of Ministry of Economic Affairs (MoEA), Ministry of Science and Technology (MoST), Ministry of Health and Welfare (MoHW) as well as major universities in Taiwan on innovation, entrepreneurship and advanced technology

Thursday March 30, 2023   9:30 - 10:40AM

Prof. Pekka Abrahamsson
Professor of software engineering,
Tampere University,
Finland

AI-Assisted Coding Changes Software Development Profoundly

Abstract

For many decades now, the software industry has attempted to bridge the productivity gap, develop higher quality code and manage the ever growing complexity of software-intensive systems. The results have been mixed, and as a result, a great majority of today's software is still written manually by human developers. This is about to change rapidly as recent developments in the field of Artificial Intelligence show promising results. While artists and designers have been taken by surprise by OpenAI's DALL-E 2's capabilities in designing unique art, ChatGPT has astonished the rest of the world with its capability of understanding human interaction. AI-assisted coding solutions such as Github's Copilot and Replit's Ghostwriter, among many others, are rapidly developing in a direction where AI generates new code that runs fast with high quality. Little is known about the true capabilities of AI programmers and their impact on the software development industry, education, and research. This talk sheds light on the current state of AI-assisted coding, highlights the research gaps, and proposes a way forward.

Speaker's Bio

Dr Pekka Abrahamsson works as a full professor of software engineering at Tampere University in Finland. He received his PhD in Software Engineering in 2002 from the University of Oulu. Before his current position, he served as a full professor at the University of Helsinki (Finland), Free University of Bozen Bolzano (Italy), Norwegian University of Science and Technology (Norway) and the University of Jyväskylä (Finland). He also worked at VTT Technical Research Centre of Finland as a research professor of software technologies. His research interests are in empirical software engineering, emerging software technologies and the ethics of artificial intelligence. Prof. Abrahamsson is widely recognized for his academic achievements. He is a pioneer in research on Agile software engineering methods and processes. Prof. Abrahamsson is the most cited software engineering researcher in Finland, and he is the first professor of Software Engineering at the Finnish Academy of Science and Letters. He was recently ranked in the all-time top 1% of software engineering scientists globally. He is the co-founder of the Software Startup Research Network (SSRN) and a seasoned expert in leading large research projects.

Other Activities

SIGAPP Annual Business Meeting: Tuesday, March 28, from 18:00 to 18:30 (Location: TBD). Open to everyone.

SIGAPP Reception: Tuesday, March 28, from 19:00 to 21:00 (Location: Researchers Forum: Astra building first floor at street level). Open to everyone.

Future SAC Organization Meeting: Wednesday, March 29, from 18:00 to 19:00 (Location: TBD). Open to everyone.

Track Chairs Business Meeting: Thursday, March 31, from 10:30 to 12:30 (Location: TBD). Open for the Organizing Committee and (potential) Track Chairs.

SAC Banquet: Thursday, March 30, from 19:00 to 22:30. Open for Banquet Ticket holders. See your ticket for full details. During the SAC Banquet, Program Chairs and Posters Chairs 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 from 14:00-16:00 (Location: A046). The works will be presented on Thursday at 16:00 (A346). Medals and certificates will be given to the top three winners.

Monday March 27, 2023

Mon 14:00 – 17:30
Rooms: A121, A224, A018, A007
Tutorials

T#1: Interaction Design for Behaviour Change
Farhat-ul-Ain
Tallinn University, Estonia

T#2: Microservice API Pattern Detection with Call Graphs
Alexander Bakhtin, and Prof. Davide Taibi
The University of Oulu

T#3: Safe and Certifiable Software Design for Trustworthy AI Enabled Cyber-Physical Systems
Sandeep K.S. Gupta, and Ayan Banerjee
Arizona State University (ASU),
Imane Lamrani
Nikola Motor Company (NMC)

T#4: Microservice-Based System Visualization Methodology
Tomas Cerny and his research team members
(Patrick Harris, Mia Gortney and Amr El-Sayed)
Baylor University

Mon 15:30 – 16:00
Coffee Break
(Researchers Forum - first floor)

Tuesday March 28, 2023

TUE 9:30–10:40
Room: A002
(Auditorium Maximum)

Keynote Address
Dr. Ted Chang
See page 9 for details.

TUE 10:40 – 11:10
Coffee Break
(Researchers Forum - first floor)

TUE 11:10 – 12:30
Room: A325

(AIED) Artificial Intelligence for Education
Session Chair: Danial Hooshyar,
Tallinn University, Estonia

EdGCon: Auto-Assigner of Iconicity Ratings Grounded by Lexical Properties to Aid in Generation of Technical Gestures
Sameena Hossain, Payal Kamboj, Aranyak Maity,
Tamiko Azuma, Ayan Banerjee and Sandeep K. S. Gupta

Image4Assess: Automatic Learning Processes Recognition Using Image Processing
Hsin-Yu Lee, Maral Hooshyar, Chia-Ju Lin,
Wei-Sheng Wang, and Yueh-Min Huang

Analysis of AI Models for Student Admissions: A Case Study
Kelly Van Busum and Shiaofen Fang

TUE 11:10 – 12:30
Room: A121

(MCA) Mobile Computing
and Applications
Session Chair: Hong Va Leong, The Hong Kong
Polytechnic University, Hong Kong

**CrossChat: Instant Messaging across
Different Apps on Mobile Devices**
Menglong Cui, Mingsong Lv, Chuancai Gu, Tao Yang,
Qiulin Chen and Nan Guan

**Adaptive Context Caching for Efficient Distributed
Context Management Systems**
Shakthi Y. Weerasinghe, Arkady Zaslavsky, Seng Loke,
Amin Abken, Alireza Hassani and Alexey Medvedev

TUE 11:10 – 12:30
Room: A402

(PDP) Privacy by Design in Practice
Session Chair: Ronald Petrlic, TH Nuremberg, Germany

**Privacy Compliance in Software Development: A Guide
to Implementing the LGPD Principles**
Lucas Dalle Rocha, Geovana Ramos Sousa Silva and Edna Dias Canedo

**Privacy by Design in Software Engineering:
An Update of a Systematic Mapping Study**
Shirlei Aparecida de Chaves and Fabiane Barreto Vavassori Benitti

TUE 11:10 – 12:30
Room: A346

(IAR) Information Access and Retrieval
Session Chair: Gabriella Pasi, Università degli Studi di
Milano Bicocca -DISCo, Italy

**Multiple Choice Online Algorithms for Technology-
Assisted Reviews**
Otto Benjamin Piramuthu

**On the Effect of Low-Ranked Documents: A New
Sampling Function for Selective Gradient Boosting**
Claudio Lucchese, Federico Marcuzzi and Salvatore Orlando

TUE 11:10 – 12:30
Room: A224

(WE) Web Engineering
Session Chair: Flavius Frasincar, Erasmus School of
Economics, Netherlands

**Weighted Neural Collaborative Filtering:
Deep Implicit Recommendation with Weighted
Positive and Negative Feedback**
Stan Hennekes and Flavius Frasincar

**Million.js: A Fast Compiler-Augmented
Virtual DOM for the Web**
Aiden Y. Bai

**Semantic-based Adaptation of Quality of Experience in
Web Multimedia Streams**
Giuseppe Loseto, Floriano Scioscia, Michele Ruta,
Filippo Gramegna and Ivano Bilenchi

TUE 12:30 – 14:00
Lunch Break
(Conference venue)

TUE 14:00 – 15:30
Room: A325

(GLMR) Graph Models for
Learning and Recognition
Session Chair: Alessandro D'Amelio, University of Milan,
Department of Computer Science, Italy

**SymptomGraph: Identifying Symptom Clusters from
Narrative Clinical Notes Using Graph Clustering**
Fattah Muhammad Tahabi, Susan Storey and Xiao Luo

**G-HIN2Vec: Distributed Heterogeneous Graph
Representations for Cardholder Transactions**
Farouk Damoun, Hamida Seba, Jean Hilger and Radu State

**Topology Preserving Maps as Aggregations for
Graph Convolutional Neural Networks**
Paolo Frazzetto, Luca Pasa, Nicolò Navarin and Alessandro Sperduti

**Quasi-CliquePool: Hierarchical Graph
Pooling for Graph Classification**
Waqar Ali, Sebastiano Vascon, Thilo Stadelmann and Marcello Pelillo

TUE 14:00 – 15:30
Room: A121

(WCN) Wireless Communications and Networking
Session Chair: Dongkyun Kim, Kyungpook National University, South Korea

Scalable Simultaneous Connectivity with Multiple APs and Virtual UEs in CF-Networks
Ayesha Siddiqa, Junho Seo, Malik Muhammad Saad, Bomi Jeong and Dongkyun Kim

Fairness Analysis of Deep Reinforcement Learning based Multi-Path QUIC Scheduling
Ernesto Quevedo Caballero, Michael Jeff Donahoo and Tomas Cerny

An Efficient Dual Encryption of IoMT Data Using Lightweight Security Scheme for Cloud Based IoT Environment
Sanjay Kumar, Kumar Abhishek, Rutvij H. Jhaveri, Abdulatif Alabdulatif and Rajkumar Gaur

Towards the Support of Industrial IoT Applications with TSCH
Ivanilson F. Vieira Junior, Marilia Curado and Jorge Granjal

TUE 14:00 – 15:30
Room: A402

(OS-1) Operating Systems
Session Chair: Bongjae Kim, Chungbuk National University, South Korea

Nioh-PT: Virtual I/O Filtering for Agile Protection against Vulnerability Windows
Mana Senuki, Kenta Ishiguro and Kenji Kono

MFence: Defending Against Memory Access Interference in a Disaggregated Cloud Memory Platform
Jinhoon Lee, Yeonwoo Jung, Suyeon Lee, Safdar Jamil, Sungyong Park, Kwangwon Koh, Hongyeon Kim and Youngjae Kim

An Efficient Profiling Tool for Baseboard Management Controllers
Jaeseop Kim, Juw Won Park, Sung Y. Shin, Austin Hanson, Jaehoon An, Younghwan Kim and Jiman Hong

Hibernation Execution Interval based Hybrid Boot for Baseboard Management Controllers
Ajung Kim, Gwangyong Kim, Bongjae Kim and Jiman Hong

TUE 14:00 – 15:30
Room: A346

(KRR-1) KRR - Knowledge Representation and Reasoning
Session Chair: Stefano Bistarelli, Università di Perugia, Italy

Reasoning about Non-Deterministic Observability and Hypothetical Action Occurrences in Multi-Agent Domains
Loc Huu Pham, Tran Cao Son and Enrico Pontelli

Dynamic Controllability of Parameterized CSTNUs
Marco Franceschetti, Roberto Posenato, Carlo Combi and Johann Eder

Treating Role Assertions as First-class Citizens in Repair and Error-tolerant Reasoning
Franz Baader, Francesco Kriegel and Adrian Nuradiansyah

Representing and Manipulating Large Sequences of Argumentation Labellings
Odinaldo Teixeira Rodrigues

TUE 14:00 – 15:30
Room: A224

(SWA) Semantic Web and Applications
Session Chair: Jun Miyazaki, Tokyo Institute of Technology, Japan

Ontology-Mediated Data Migration: Deriving Migration Rules by Reasoning on Schema Descriptions
Loris Bozzato and Luciano Serafini

Inferring Threatening IoT Dependencies using Semantic Digital Twins Toward Collaborative IoT Device Management
Amal Guittoum, Francois Aissaoui, Sebastien Bolle, Fabienne Boyer and Noel De Palma

DISO: A Domain Ontology for Modeling Dislocations in Crystalline Materials
Ahmad Zainul Ihsan, Said Fathalla and Stefan Sandfeld

Automatic Extraction of Effective Relations in a Knowledge Graph for a Recommendation Explanation System
Shi-Jun Luo, Hyoil Han, Qiong Chang and Jun Miyazaki

TUE 14:00 – 16:00

SRC Posters Exhibition

Room: A046

Why and Where Software Developers are (not) using Project Data in Agile Retrospectives
Leon Bein

Unsupervised Key Term Extraction of Tornado Narratives from NOAA Storm Events Database
Emma L. McDaniel

SplitChain, Blockchain with Fully Decentralised Dynamic Sharding Resilient to Fast Adaptive Adversaries
Arthur Rauch

A Hybrid Approach to Design Embedded Software Using JavaScript's Non-Blocking Principle
Fernando Oliveira

TUE 15:30 – 16:00

Coffee Break

(Researchers Forum - first floor)

TUE 16:00 – 18:00
Room: A325

(IRMAS) Intelligent Robotics and Multi-Agent Systems

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

A Formalization of Multi-Agent Planning with Explicit Agent Representation
Alessandro Trapasso, Sofia Santilli, Luca Iocchi and Fabio Patrizi

Multi-Robot Expansive Planning and Trajectory Evaluation for Tracking and Localization of Marine Life
Kehlani A. Fay, Michael Giordano, Alberto Soto, Christopher M. Clark, Emily Spurgeon, James Anderson and Christopher G. Lowe

Autonomous Topological Optimisation for Multi-Robot Systems in Logistics
Zuyuan Zhu, Gautham P. Das and Marc Hanheide

Low-Power Footprint Inference with a Deep Neural Network Offloaded to a Service Robot through Edge Computing
Pedro Silva and Rui P. Rocha

A Hierarchical Game-Theoretic Decision-Making for Cooperative Multi-Agent Systems under the Presence of Adversarial Agents
Qin Yang and Ramviyas Parasuraman

TUE 16:00 – 18:00
Room: A121

(NET) Networking
Session Chair: Mário M. Freire, University of Beira Interior, Portugal

(INTOP) Interoperability
Session Chair: Young-Gab Kim Department of Computer & Information Security, Sejong University, South Korea

PKache: A Generic Framework for Data Plane Caching
Roy Friedman, Or Goaz and Dor Hovav

Topology Analysis of the XRP Ledger
Vytautas Tumas, Sean Rivera, Damien Magoni and Radu State

Interoperability of Heterogeneous Systems of Systems: Review of Challenges, Emerging Requirements and Options
Mersedeh Sadeghi, Alessio Carenini, Oscar Corcho, Matteo Rossi, Riccardo Santoro and Andreas Vogelsang

Relation Modeling on Knowledge Graph for Interoperability in Recommender Systems
SeungJoo Lee, Seokho Ahn and Young-Duk Seo

Model-Driven Integration and the OSLC Standard: A Mapping of Applied Studies
Bruno Marcelo Soares Ferreira, Fábio Paulo Basso, Rafael dos Santos Torres, Rafael Zancan Frantz, Diego Kreutz, Maicon Bernardino and Elder de Macedo Rodrigues

TUE 14:00 – 15:30
Room: A402

(OS-2) Operating Systems
Session Chair: Bongjae Kim, Chungbuk National University, South Korea

(SP) Software Platforms
Session Chair: Jinman Jung, Inha University, South Korea

Spidermine: Low Overhead User-Level Prefetching
Jiwoong Won, Sangwoon Yun, Ahn Jemin, Jong-Chan Kim and Kyungtae Kang

zCeph: Achieving High Performance On Storage System Using Small Zoned ZNS SSD
Jin Yong Ha and Heon Young Yeom

Comparing Modern Build Automation Tools for an Insurance Company
Arne Koschel, Kim Chi Tran, Alexander Grunewald, Moritz Lange, Anna Pakosch and Irina Astrova

Detecting Suspicious Conditional Statement using
App Execution Log
Sumin Lee, Minho Park and Jiman Hong

Security Verification Software Platform of
Data-Efficient Image Transformer Based on
Fast Gradient Sign Method
In-pyo Hong, Gyu-ho Choi, Pan-koo Kim and Chang Choi

TUE 16:00 – 18:00
Room: A346

(SONAMA) Social Network and
Media Analysis
Session Chair: Sang-Wook Kim, Hanyang University,
South Korea

A Cross-Domain Aspect-Based Sentiment Classification
by Masking the Domain-Specific Words
Junhee Lee, Flavius Frasincar and Maria Mihaela Trușcă

SocioPedia: Visualizing Social Knowledge over Time
Tra My Nguyen and Jason Jung

Personalized Prediction of Offensive News Comments
by Considering the Characteristics of Commenters
Teruki Nakahara and Taketoshi Ushiama

Topic Aware Influential Member Detection in Meetup
Arpan Dam, Suryansh Kumar, Debarati Bhattacharjee,
Sayan Pathak and Bivas Mitra

Detecting and Measuring the Polarization
Effects of Adversarial Botnets on Twitter
Yeonjung Lee, Mert Ozer, Steven R. Corman and Hasan Davulcu

TUE 16:00 – 18:00
Room: A224

(SE) Software Engineering
Session Chair: Byungjeong Lee, University of Seoul,
South Korea

Specialization of Run-Time Configuration Space at
Compile-time: An Exploratory Study
Xhevahire Tërnava, Mathieu Acher and Benoit Combemale

PyLC: A Framework for Transforming and
Validating PLC Software using Python and
Pynguin Test Generator
Mikael Ebrahimi Salari, Eduard Paul Enoiu,
Wasif Afzal and Cristina Seceleanu

Survey on Trust in Software Engineering for
Autonomous Dynamic Ecosystems
Barbora Buhnova, David Halasz, Danish Iqbal and Hind Bangui

Applying Gamification to Prioritize
Requirements in Agile Projects
Daniel Silva, Maria Lencastre
Pinheiro de Menezes E. Cruz, João Pimentel,
Jaelson Castro and Luiza Lira

MCRepair: Multi-Chunk Program Repair via
Patch Optimization with Buggy Block
Jisung Kim and Byungjeong Lee

Wednesday March 29, 2023

WED 9:00 – 10:30
Room: A325

(MLA) Machine Learning and its
Applications
Session Chair: Jee-Hyong Lee, Sungkyunkwan University,
South Korea

Prediction of Readmissions in Hospitalized Children
and Adolescents by Machine Learning
Nayara C. da Silva, Marcelo K. Albertini,
Andre R. Backes and Georgia G. Pena

Exploring Candlesticks and Multi-Time Windows for
Forecasting Stock-Index Movements
Kanghyeon Seo and Jihoon Yang

FedFAME: A Data Augmentation Free Framework
based on Model Contrastive Learning for
Federated Semi-Supervised Learning
Shubham Malaviya, Manish Shukla, Pratik Korat and Sachin Lodha

Analysis of Active Semi-Supervised Learning
Lilian Berton, Felipe Baz Mitsuishi and Didier Vega Oliveros

WED 9:00 – 10:30
Room: A121

(IE-1) IoT and Edge Computing
Session Chair: Sabur Baidya, University of Louisville, USA

An Energy-Efficient FaaS Edge Computing Platform
over IoT Nodes: Focus on Consensus Algorithm
David Fernandez Blanco, Frederic Le Mouel,
Trista Lin and Julien Ponge

Software Aging in a Real-Time Object
Detection System on an Edge Server
Kengo Watanabe, Fumio Machida, Ermeson Andrade,
Roberto Pietrantuono and Domenico Cotroneo

Dynamic Load Balancing of RDF Reasoning in
Fog-Computing Environments
Yuma Kokubo and Toshiyuki Amagasa

Reducing Power Consumption during Server Maintenance on Edge Computing Infrastructures
Felipe Pfeifer Rubin, Paulo Severo Souza and Tiago Ferreto

WED 9:00 – 10:30
Room: A402

(SEC-1) Computer Security
Session Chair: Sasa Radomirovic, School of Mathematical and Computer Sciences, Heriot-Watt University, UK

Free Willy: Prune System Calls to Enhance Software Security
Charlie Groh, Sergej Proskurin and Apostolis Zarras

CryptSan: Leveraging ARM Pointer Authentication for Memory Safety in C/C++
Konrad Hohentanner, Philipp Zieris and Julian Horsch

ARGANIDS: A Novel Network Intrusion Detection System based on Adversarially Regularized Graph Autoencoder
Andrea Venturi, Matteo Ferrari, Mirco Marchetti and Michele Colajanni

Realism versus Performance for Adversarial Examples Against DL-Based NIDS
Huda Ali Alatwi and Charles Morisset

WED 9:00 – 10:30
Room: A346

(DS) Data Streams
Session Chair: Joao Gama, University of Porto, Portugal

An Active Learning Budget-Based Oversampling Approach for Partially Labeled Multi-Class Imbalanced Data Streams
Gabriel J. Aguiar and Alberto Cano

Aging and Rejuvenating Strategies for Fading Windows in Multi-Label Classification on Data Streams
Martha Roseberry, Saso Dzeroski, Albert Bifet and Alberto Cano

A DTW Approach for Complex Data A Case Study with Network Data Streams
Paula Silva, João Vinagre and Joao Gama

Transformer based Early Classification for Real-Time Human Activity Recognition in Smart Homes
Tae-Hoon Lee, Hyunju Kim and Dongman Lee

WED 9:00 – 10:30
Room: A224

(SATTA) Software Architecture: Theory, Technology, and Applications
Session Chair: Matteo Camilli, Politecnico di Milano, Italy

Using Automatically Recommended Seed Mappings for Machine Learning-Based Code-to-Architecture Mappers
Sebastian Herold and Zipani Tom Sinkala

A Theoretical Framework for Self-Adaptive Systems: Specifications, Formalisation, and Architectural Implications
Ana Petrovska, Thomas Hutzelmann and Stefan Kugele

Expressive and Systematic Risk Assessments with Instance-Centric Threat Models
Stef Verreydt, Dimitri Van Landuyt and Wouter Joosen

WED 10:30 – 11:00
Coffee Break
(Researchers Forum - first floor)

WED 10:30 – 12:30
AM Poster Session
Room: A046
See page 23 for details.

WED 11:00 – 12:30
Room: A325

(MLA) Machine Learning and Its Applications
Session Chair: Session Chair: Jee-Hyong Lee, Sungkyunkwan University, South Korea

S-ViT: Sparse Vision Transformer for Accurate Face Recognition
Geunsu Kim, Gyudo Park, Soohyeok Kang and Simon Woo

Finite Multivariate McDonald's Beta Mixture Model Learning Approach in Medical Applications
Darya Forouzanfar, Narges Manouchehri and Nizar Bouguila

Sec2vec: Anomaly Detection in
HTTP Traffic and Malicious URLs
Mateusz Gniewkowski, Henryk Maciejewski,
Tomasz Surmacz and Wiktor Walentynowicz

Semi-Supervised Hybrid Predictive Bi-Clustering
Trees for Drug-Target Interaction Prediction
André Alves, Pedro C. B. Ilídio and Ricardo Cerri

WED 11:00 – 12:30
Room: A121

(IE-2) IoT and Edge Computing
Session Chair: Sabur Baidya, University of Louisville, USA

The Not-So-Easy Task of Taking Heavy-Lift ML Models
to the Edge: A Performance-Watt Perspective
Lucas Caetano Meireles Pereira, Bruna Guterres, Kauê Sbrissa,
Amanda Mendes, Francisca Vermeulen, Lisl Lain, Marié Smith,
Javier Martinez, Paulo Drews, Nelson Duarte Filho,
Vinicus Oliveira, Silvia Botelho and Marcelo Pias

Swapping Training Optimizers and Tiny
Partial Datasets to Improve Performance of
Lighter Neural Networks for Edge Devices
Alexandre M. Nascimento, Vinicius V. Melo and Marcio P. Basgalupp

Design and Implementation of a Blockchain-Based
e-Voting System by using the Algorand Platform
Christian Esposito and Chang Choi

Towards Deployment of Mobile Robot Driven
Preference Learning for User-State-Specific
Thermal Control in A Real-World Smart Space
Geon Kim, Hyunju Kim, Dongman Lee and Youngjae Kim

WED 11:00 – 12:30
Room: A402

(SEC-2) Computer Security
Session Chair: Sasa Radomirovic, School of Mathematical
and Computer Sciences, Heriot-Watt University, UK

RMC-PVC: A Multi-Client Reusable
Verifiable Computation Protocol
Gael Marcadet, Pascal Lafourcade and Léo Robert

The EVIL Machine: Encode, Visualize and
Interpret the Leakage
Valence Cristiani, Maxime Lecomte and Philippe Maurine

Scalable Coercion-Resistant E-Voting under
Weaker Trust Assumptions
Thomas Haines, Johannes Müller and Iñigo Querejeta-Azurmendi

Generic Privacy Preserving Private
Permissioned Blockchains
Frederic A. Hayek, Mirko Koscina, Pascal Lafourcade and
Charles Olivier-Anclin

WED 11:00 – 12:30
Room: A346

(DBDM) Databases and Big Data
Management
Session Chair: Dr. Bongjae Kim, Chungbuk National
University, Korea

A Comparative Performance Evaluation of Multi-Model
NoSQL Databases and Polyglot Persistence
Dimitri Van Landuyt, Vincent Reniers, Julien Benaouda, Ansar Rafique
and Wouter Joosen

NF-Log: Revisiting Log Writes in Relational Database
for Efficient Persistent Memory Utilization
Sara Zguem, Qichen Chen and Heon Young Yeom

Exploring Alternatives of Complex Event Processing
Execution Engines in Demanding Cases
Styliani Kyrama and Anastasios Gounaris

OCC2T: An Early-Read Dual-Track OCC Algorithm
for Mixed Mode Systems
Abdullah A. Alhajri, Arshad h. Jhumka and Richard Kirk

MUTUAL: Multi-Domain Sentiment Classification via
Uncertainty Sampling
Katerina Katsarou, Roxana Maria Jeney and Kostas Stefanidis

WED 11:00 – 12:30
Room: A224

(LASD) Lean and Agile Software
Development
Session Chair: Adam Przybylek, Gdansk University of
Technology

Towards a Recommender System-Based Process for
Managing Risks in Scrum Projects
Ademar França de Sousa Neto, Felipe Ramos,
Danyllo Albuquerque, Emanuel Dantas, Mirko Perkusich,
Hyggo Almeida and Angelo Perkusich

Tailoring Hybrid Software Processes in a
Medium-Size Software Company
Jacqueline Marín, Julio Ariel Hurtado,
María Cecilia Bastarrica and Luis Silvestre

Challenges in Large-Scale Agile Software
Development Projects*
Hina Saeeda, Muhammad Ovais Ahmad and Tomas Gustavsson

An Exploratory Study About Non-functional
Requirements Documentation Practices in Agile Teams
Shahraz Nasir, Eduardo Guerra, Luciana Zaina and Jorge Melegati

Which Challenges Do Exist with
Agile Culture in Practice?
Thorben Kuchel, Michael Neumann,
Philipp Diebold and Eva-Maria Schön

WED 12:30 – 14:00
Lunch Break
(Conference venue)

WED 14:00 – 15:30
Room: A325

(MLA) Machine Learning and its Applications
Session Chair: Keon Myung Lee,
Chungbuk National University, Cheongju, Korea

**Are Alternatives to Backpropagation useful for Training Binary Neural Networks?
An Experimental Study in Image Classification**
Ben Crulis, Barthelemy Serres, Cyril DE RUNZ and Gilles Venturini

SLResNet: Neural-Network-Based End-to-End Structure Light 3D Reconstruction for Endoscope
Chi-Sheng Shih, Yu-Shian Lin, Kai Ju Chang and Chin Kang Chang

Machine Learning Applied on Hydraulic Actuator Control
Thomaz Pereira da Silva Junior, Everson da Silva Flores,
Vagner Santos da Rosa and Fabio Augusto Pires Borges

MultiPathGAN: Structure Preserving Stain Normalization using Unsupervised Multi-Domain Adversarial Network with Perception Loss
Haseeb Nazki, Ognjen Arandjelović, InHwa Um and
David James Harrison

WED 14:00 – 15:30
Room: A121

(DADS-1) Dependable and Adaptive Distributed Systems
Session Chair: Karl M. Göschka,
Vienna University of Technology

Detection of Adversarial Attacks by Observing Deep Features with Structured Data Algorithms
Tommaso Puccetti, Andrea Ceccarelli,
Tommaso Zoppi and Andrea Bondavalli

SOTERIA: Preserving Privacy in Distributed Machine Learning
Cláudia Brito, Pedro Ferreira, Bernardo Portela,
Rui Oliveira and João Paulo

Deduplication vs Privacy Tradeoffs in Cloud Storage
Rodrigo Marques Silva, Cláudio Jose Correia,
Miguel Correia and Luís Rodrigues

Acala: Aggregate Monitoring for Geo-Distributed Cluster Federations
Chih-Kai Huang and Guillaume Pierre

WED 14:00 – 15:30
Room: A402

(EMBS) Embedded Systems
Session Chair: Chien-Chung Ho,
National Cheng Kung University, Taiwan

A Software-Only Approach to Enable Diverse Redundancy on Intel GPUs for Safety-Related Kernels
Nikolaos Andriotis, Alejandro Serrano-Cases, Sergi Alcaide,
Jaume Abella, Francisco J Cazorla, Yang Peng, Andrea Baldovin,
Michael Paulitsch and Vladimir Tsymbal

Tracking Coherence-Related Contention Delays in Real-Time Multicore Systems
Roger Pujol, Mohamed Hassan, Hamid Tabani,
Jaume Abella and Francisco J Cazorla

A Makespan and Energy-Aware Scheduling Algorithm for Workflows under Reliability Constraint on a Multiprocessor Platform
Atharva Tekawade and Suman Banerjee

CAT: Context Aware Tracing for Rust Asynchronous Programs
Tsung-Yen Wang, Shao-Hua Wang, Chia-Heng Tu and Wen-Yew Liang

WED 14:00 – 15:30
Room: A224

(RE) Requirement Engineering
Session Chair: Maria Lencastre,
Universidade de Pernambuco, Brazil

A Multi-layered Collaborative Framework for Evidence-driven Data Requirements Engineering for Machine Learning-based Safety-critical Systems
Sangeeta Dey and Seok-Won Lee

Towards a FAIR Dataset for Non-Functional Requirements
María Isabel Limaylla Lunarejo,
Nelly Condori Fernandez and Miguel Luaces

Building User Stories and Behavior Driven Development Scenarios with a Strict Set of Concepts: Ontology, Benefits and Primary Validation
Samedi Heng, Konstantinos Tsilionis and Yves Wautelet

Why and Where Software Developers are (not) using Project Data in Agile Retrospectives
Leon Bein

Unsupervised Key Term Extraction of Tornado Narratives from NOAA Storm Events Database
Emma L. McDaniel

SplitChain, Blockchain with Fully Decentralised Dynamic Sharding Resilient to Fast Adaptive Adversaries
Arthur Rauch

A Hybrid Approach to Design Embedded Software
Using JavaScript's Non-Blocking Principle
Fernando Oliveira

WED 14:30 – 16:30

PM Poster Session

Room: A046

WED 15:30 – 16:00

Coffee Break

(Researchers Forum - first floor)

WED 16:00 – 18:00
Room: A325

(MLA) Machine Learning and its
Applications
Session Chair: Keon Myung Lee, Chungbuk National
University, Cheongju, Korea

Discrete Wavelet Coefficient-Based Embeddable Branch
for Ultrasound Breast Masses Classification
Mingue Song and Yanggon Kim

ACL TA-DA: A Dataset for Text
Summarization and Generation
Min Su Park and Eunil Park

Gradient-based Counterfactual Generation for Sparse
and Diverse Counterfactual Explanations
Chan Sik Han and Keon Myung Lee

Rotated-DETR: An End-to-End Transformer-Based
Oriented Object Detector for Aerial Images
Jinbeom Kim, GilJun Lee, Taejune Kim and Simon Woo

Interpretable ML Enhanced CNN Performance
Analysis of cuBLAS, cuDNN and TensorRT
Zhumakhan Nazir, Vladislav Yarovenko and Jurn-Gyu Park

WED 16:00 – 18:00
Room: A121

(DADS-2) Dependable and Adaptive
Distributed Systems
Session Chair: Karl M. Göschka, Vienna University of
Technology

(GIA) GeoInformation Analytics
Session Chair: Luis.Miralles, Technological University Dublin,
Ireland

Cost-Effective Data Upkeep in
Decentralized Storage Systems
Racin Nygaard, Hein Meling and John Ingve Olsen

Stateful Adaptive Streams with Approximate
Computing and Elastic Scaling
Joao Francisco, Miguel E. Coimbra, Pedro Fernandes Neto,
Felix Freitag and Luis Veiga

Fluidity: Location-Awareness in
Replicated State Machines
Johannes Köstler, Hans P. Reiser,
Franz J. Hauck and Gerhard Habiger

Graph-Based Semi-Supervised Classification for
Similar Wildfire Dynamics
Lilian Berton, Pedro Leyria de Oliveira and Didier Vega Oliveros

POI Types Characterization based on
Geographic Feature Embeddings
Salatiel Dantas Silva, Claudio E. C. Campelo and
Maxwell Guimaraes de Oliveira

WED 16:00 – 18:00
Room: A402

(CPS) Cyber-Physical Systems
Session Chair: Chun-Han Lin, National Taiwan Normal
University, Taiwan

RAB: Recomputation Aided Backup for
Energy Efficient Non-volatile Processors
Shuo Xu, Huichuan Zheng, Hao Zhang and Mengying Zhao

CCFlash: A Correlation-Aware Compression
Approach in Flash Memory
Jianqiang Chen, Qiongxia Huang, Jiebin Zhai and Zhirong Shen

BcBench: Exploring Throughput Processor
Designs based on Blockchain Benchmarking
Xiurui Pan, Yue Chen, Shushu Yi and Jie Zhang

Enhancing Polar Codes Efficiency on 3D Flash Memory
by Exploiting Multiple Error Variations
Yajuan Du, Ziye Wang, Yao Zhou and Taiyu Zhou

Traffic Intersections as Agents: A Model Checking Approach for Analysing Communicating Agents
Thamilselvam B, Yenda Ramesh,
Subrahmanyam Kalyanasundaram and MVP Rao

WED 16:00 – 18:00
Room: A346

SRC ORAL Presentation

WED 16:00 – 18:00
Room: A224

(SVT) Software Verification and Testing
Session Chair: Pascale Le Gall, CentraleSupélec Paris-Saclay University, France

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Formalizing an Efficient Runtime Assertion Checker for an Arithmetic Language with Functions and Predicates
Thibaut Benjamin and Julien Signoles

Ownership-Based Owicki-Gries Reasoning
Mikhail Semenyuk and Brijesh Dongol

Multi-Thread Combinatorial Test Generation with SMT Solvers
Andrea Bombarda, Angelo Gargantini and Andrea Calvagna

An Efficient Black-Box Support of Advanced Coverage Criteria for Klee
Nicolas Berthier, Steven De Oliveira, Nikolai Kosmatov, Delphine Longuet and Romain Soulat

Exhaustive Branch Coverage with TreeFrog
Nicky Williams

Thursday March 30, 2023

THU 9:30 – 10:30   Auditorium
Keynote Address
Prof. Pekka Abrahamsson
See page 10 for details.

THU 10:30 – 11:00
Coffee Break
(Researchers Forum - first floor)

THU 11:00 – 12:30
Room: A325

(EC) Applications of
Evolutionary Computing
Session Chair: Angela Troncoso, Universidad Pablo de Olavide - CtraSpain

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Quality Diversity Evolutionary Learning of Decision Trees
Andrea Ferigo, Leonardo Lucio Custode and Giovanni Iacca

A Bioinspired Ensemble Approach for Multi-Horizon Reference Evapotranspiration Forecasting in Portugal
Manuel Jesús Jiménez Navarro, Martínez Ballesteros, Isabel Sofia Brito, Francisco Martinez Alvarez and Gualberto Asencio Cortes

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THU 11:00 – 12:30
Room: A121

(CC) Cloud Computing
Session Chair: S D Madhu Kumar, NIT Calicut, India

A Semantic Evidence-Based Approach to Continuous Cloud Service Certification
Christian Banse, Immanuel Kunz, Nico Haas and Angelika Schneider

Digital Forgetting Using Key Decay
Marwan Adnan Darwish and Apostolis Zarras

On the Measurement of Performance Metrics for Virtualization-Enhanced Architectures
Swapneel Chandrakant Mhatre and Priya Chandran

COSTA: A Cost-Driven Solution for Migrating Applications in Multi-Cloud Environments
Leandro Costa Silva, Robson Wagner Albuquerque de Medeiros and Nelson Souto Rosa

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THU 11:00 – 12:30
Room: A402

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

Type-Based Termination Analysis for Parsing Expression Grammars
Elton M. Cardoso, Regina Sarah Monferrari Amorim de Paula, Daniel Freitas Pereira, Leonardo Vieira Santos Reis and Rodrigo Geraldo Ribeiro

Optimizing the Order of Bytecode Handlers in Interpreters using a Genetic Algorithm
Wanhong Huang, Stefan Marr and Tomoharu Ugawa

Anticipation of Method Execution in Mixed Consistency Systems
Marco Giunti, Herve' Paulino and António Ravara

THU 11:00 – 12:30
Room: A346

(DM) Data Mining
Session Chair: Hasan Jamil, Univeersity of Idaho, USA

Elastic Data Binning for Transient Pattern Analysis in Time-Domain Astrophysics
Thanapol Phungtua-eng, Yoshitaka Yamamoto and Shigeyuki Sako

Real-Life Performance of Fairness Interventions - Introducing A New Benchmarking Dataset for Fair ML
Daphne Lenders and Toon Calders

Enforcement of Minimal Size and Area Constraints before and while Mining Patterns in Fuzzy Tensors
Loïc Cerf

Identify "Dangerous" Rules to Reduce Side Effects in Association Rule Hiding
Peng Cheng and James Pang Yan

THU 12:30 – 14:00
Lunch Break
(Conference venue)

THU 14:00 – 15:30
Room: A325

(HIBIO-1) Health Informatics and Bioinformatics
Session: Chair: Anu Mary Chacko, National Institute of Technology Calicut, India

A Synthetic Dataset Generation for the Uveitis Pathology Based on MedWGAN Model
Heithem Sliman, Imen Megdiche, Sami Yangui, Aida Drira, Ines Drira and Elyes Lamine

Mapping Strategies for Declarative Queries over Online Heterogeneous Biological Databases for Intelligent Responses
Hasan Jamil and Kallol Naha

MGCMA: Multi-Scale Generator with Channel-Wise Mask Attention to Generate Synthetic Contrast-Enhanced Chest Computed Tomography
Jeongho Kim, Yun-Gyoo Lee, Donggeun Ko, Taejune Kim, Soo-Youn Ham and Simon Woo

Automatic Detection of Signalling Behaviour from Assistance Dogs as they Forecast the Onset of Epileptic Seizures in Humans
Hitesh Raju, Ankit Sharma, Aoife Smeaton and Alan Smeaton

THU 14:00 – 15:30
Room: A121

(DAPP-1) Decentralized Applications with Blockchain, DLT and Crypto-Currencies
Session Chair: Jean-Marc Seigneur, University of Geneva

SBvote: Scalable Self-Tallying Blockchain-Based Voting
Ivana Stančíková and Ivan Homoliak

Ethereum Proof-of-Stake under Scrutiny
Ulysse Pavloff, Yackolley Amoussou-Guenou and Sara Tucci

DEDACS: Decentralized and Dynamic Access Control for Smart Contracts in a Policy-Based Manner
Kristof Jannes, Vincent Reniers, Wouter Lenaerts, Bert Lagaisse and Wouter Joosen

Distributed Key Generation with Smart Contracts using zk-SNARKs
Michael Sober, Max Kobelt, Giulia Scaffino, Dominik Kaaser and Stefan Schulte

THU 14:00 – 15:30
Room: A402

(KNLP-1) Knowledge and Natural Language Processing
Session Chair: Mauro Dragoni, Fondazione Bruno Kessler, Trento, Italy

Dynamic Named Entity Recognition
Tristan Luiggi, Vincent Guigue, Laure Soulier, Siwar Jendoubi and Aurelien Baelde

FREDA: Flexible Relation Extraction Data Annotation
Michael Strobl, Amine Trabelsi and Osmar Zaïane

Zero-Shot Taxonomy Mapping for Document Classification
Lorenzo Bongiovanni, Giuseppe Rizzo, Fabrizio Dominici and Luca Bruno

REFORMIST: Hierarchical Attention Networks for Multi-Domain Sentiment Classification with Active Learning
Katerina Katsarou, Nabil Douss and Kostas Stefanidis

THU 14:00 – 15:30
Room: A346

(ISDE-1) Intelligent Systems for Digital Era
Session Chair: Tarmo Robal, TalTech, Estonia

Finding Indicator Diseases of Psychiatric Disorders in BigData using Clustered Association Rule Mining
Markus Bertl, Mahtab Shahin, Peeter Ross and Dirk Draheim

Improving the Quality of Public Transportation by Dynamically Adjusting the Bus Departure Time
Shuheng Cao, Syauki Aulia Thamrin and Arbee L.P. Chen

Multimodal Semantographic Metalanguage (MSM): A Novel Methodology for Digital Enablement of Semi-Literates
Prawaal Sharma, Poonam Goyal and Navneet Goyal

Modeling a Conversational Agent using BDI Framework
Alexandre Yukio Ichida and Felipe Meneguzzi

THU 15:30 – 16:00
Coffee Break
(Researchers Forum - first floor)

THU 16:00 – 18:00
Room: A425

(HIBIO-2) Health Informatics and Bioinformatics
Session Chair: Anu Mary Chacko, India

Personalized Graph Attention Network for Multivariate Time-Series Change Analysis: A Case Study on Long-Term Maternal Monitoring
Yuning Wang, Iman Azimi, Mohammad Feli, Amir M. Rahmani and Pasi Liljeberg

Diversity-Promoting Ensemble for Medical Image Segmentation
Mariana-Iuliana Georgescu, Radu Tudor Ionescu and Andreea Iuliana Miron

Automatic Pain Assessment with Ultra-Short Electrodermal Activity Signal
xinwei ji, Tianming Zhao, Wei Li and Albert Y. Zomaya

The Case for tinyML in Healthcare CNNs for Real-Time On-Edge Blood Pressure Estimation
Bailian Sun, Safin Bayes, Abdelrhman Mohamed Abotaleb and Mohamed Hassan

THU 16:00 – 18:00
Room: A121

(DAPP-2) Decentralized Applications with Blockchain, DLT and Crypto-Currencies
Session Chair: Jean-Marc Seigneur, University of Geneva

A Technology Readiness Level for Blockchain
Garry Clawson

Towards Automated Verification of Bitcoin-Based Decentralised Applications
Stefano Bistarelli, Andrea Bracciali, Rick Klomp and Ivan Mercanti

PoRt: Non-Interactive Continuous Availability Proof of Replicated Storage
Reyhaneh Rabaninejad, Bin Liu and Antonis Michalas

THU 16:00 – 18:00
Room: A402

(KNLP-2) Knowledge and Natural Language Processing
Session Chair: Mauro Dragoni, Fondazione Bruno Kessler, Trento, Italy

BERTEPro : A New Sentence Embedding Framework for the Education and Professional Training Domain
Guillaume Lefebvre, Haytham Elghazel, Theodore Guillet, Alexandre Aussem and Matthieu Sonnati

Arabic Aspect Category Detection for Hotel Reviews based on Data Augmentation and Classifier Chains
Asma Ameur, Sana Hamdi and Sadok Ben Yahia

A Biomedical Entity Extraction Pipeline for Oncology Health Records in Portuguese
Hugo Oliveira Sousa, Alípio Mario Jorge, Arian Pasquali, Catarina Sousa Santos and Mario Amorim Lopes

THU 16:00 – 18:00
Room: A346

(ISDE-2) Intelligent Systems for Digital Era
Session Chair: Tarmo Robal, TalTech, Estonia

(KRR-2) Knowledge Representation and Reasoning
Session Chair: : Stefano Bistarelli, Università di Perugia, Italy

On The Shift to Decentralised Identity Management in Distributed Data Exchange Systems
Mariia Bakhtina, Raimundas Matulevicius, Ahmed Awad and Petteri Kivimaki

Deep-Learning based Trust Management with Self-Adaptation in the Internet of Behavior
Hind Bangui, Emilia Cioroaica, Mouzhi Ge and Barbora Buhnova

Optimal Repairs in Ontology Engineering as Pseudo-Contractions in Belief Change
Franz Baader

Friday March 31, 2023

POSTERS LISTING

WED 10:30 – 12:30
AM Poster Session
Room: A046

(CC) Cloud Computing

CEDCES: A Cost Effective Deadline Constrained Evolutionary Scheduler for Task Graphs in Multi-Cloud System
Atharva Tekawade and Suman Banerjee

AI Enabled Cloud Service to Detect Conversion Fraud in E-Commerce
ABHAY NARAYAN, Disha Galve and anu Chacko

(DADS) Dependable, Adaptive, and Secure Distributed Systems

An Extensible Framework for Implementing Byzantine Fault-Tolerant Protocols
hanish gogada, hein meling, Leander Jehl and John Ingve Olsen

Proof of Swarm Based Ensemble Learning for Federated Learning Applications
Ali Raza, Kim Phuc Tran, Ludovic Koehl and Shujun Li

Defektor: An Extensible Tool for Fault Injection Campaign Management in Microservice Systems
Goncalo Baptista, Jaime Correia, Andre Bento, Joao Soares, Antonio Ferreira, Joao Duraes, Raul Barbosa and Filipe Araujo

Maude Specification of Nets-Within-Nets: A Formal Model of Adaptable Distributed Systems
lorenzo capra and Michael Köhler-Bußmeier

(DAPP) Decentralized Applications with Blockchain, DLT and Crypto-Currencies

NFT Trust Survey
Jean-Marc Seigneur and Suzana Moreno

RESTChain: A Blockchain-Based Mediator for REST Interactions in Service Choreographies
Francesco Donini, Alessandro Marcelletti, Andrea Morichetta and Andrea Polini

Alleviating High Gas Costs by Secure and Trustless Off-chain Execution of Smart Contracts
Soroush Farokhnia and Amir Kafshdar Goharshady

(EC) Applications of Evolutionary Computing

Evolutionary Computation to Explain Deep Learning Models for Time Series Forecasting
Angela del Robledo Troncoso Garcia, Alicia Troncoso Lora, Francisco Martínez-Álvarez and Maria Martinez Ballesteros

Optimal Location of Charging Stations for Electric Vehicles: An Effective and Efficient Heuristic Approach
Alfredo Cuzzocrea, Luigi Canadà, Riccardo Nicolicchia and Luca Roldo

(GIA) GeoInformation Analytics

Detecting Road Intersections from Satellite Images using Convolutional Neural Networks
Fatmaelzahraa Eltaher, Luis Miralles-Pechuán, Jane Courtney and Susan Mckeever

A General Methodology for Building Multiple Aspect Trajectories
Francesco Lettich, Chiara Pugliese, Chiara Renso and Fabio Pinelli

(HIBIO) Health Informatics and Bioinformatics

Parallel Construction of RNA Databases for Extensive lncRNA-RNA Interaction Prediction
Iñaki Amatria-Barral, Jorge González-Domínguez and Juan Touriño

Unsupervised Forecasting and Anomaly Detection of ADLs in Single-resident Elderly Smart Homes
Zahraa Shahid, Saguna Saguna and Christer Åhlund

Mobile Freeze-Net with Attention-Based Loss Function for Covid-19 Detection from an Imbalanced CXR Dataset
Santanu Roy and Rahul Khurana

Patient-GAT: Sarcopenia Prediction using Multi-Modal Data Fusion and Weighted Graph Attention Networks
Cary Xiao, Nam Pham, Erik A. Imel and Xiao Luo

An ML Model for Mental Health Monitoring using Facial Emotion Detection and Analyzing Social Media Posts
Shafna V and SD Madhu Kumar

(IE) IoT and Edge Computing

MP-DDPG: Optimal Latency-Energy Dynamic Offloading Scheme in Collaborative Cloud Networks
Jui Mhatre and Ahyoung Lee

Efficient Resource Augmentation of Resource Constrained UAVs Through EdgeCPS
Sangil Ha, Euteum Choi, Dongbeom Ko, Sungjoo Kang and Seongjin Lee

(INTOP) Interoperability

Interoperable Access Control Framework for Services Demanding High Level Security among Heterogeneous IoT Platforms
Jahoon Koo, Giluk Kang and Young-Gab Kim

WiFi-enabled Occupancy Monitoring in Smart Buildings with a Self-Adaptive Mechanism
Muhammad Salman, Young-Duk Soe and Youngtae Noh

(IRMAS) Intelligent Robotics and Multi-Agent Systems

Optimising Redundancy in Distributed Sensor Networks
Cyril Monette and James Wilson

An Empirical Method for Benchmarking Multi-Robot Patrol Strategies in Adversarial Environments
James C. Ward and Edmund R. Hunt

(ISDE) Intelligent Systems for Digital Era

An Efficient Feature-Based Method for People Counting
Daniel Helmer, Heiko Hinkelmann and Thomas Hollstein

Migration from HL7 Clinical Document Architecture (CDA) to Fast Health Interoperability Resources (FHIR) in the Infectious Disease Information System of Estonia
Igor Bossenko, Kerli Linna, Gunnar Piho and Peeter Ross

AI4CITY - An Automated Machine Learning Platform for Smart Cities
Pedro José Pereira, Carlos Gonçalves, Lara Lopes Nunes, Paulo Cortez and Andé Pilastri

(MCA) Mobile Computing and Applications

Exploiting Machine-Learning Prediction for Enabling Real-Time Pixel-Scaling Techniques in Mobile Camera Applications
Shih-En Wei, Sheng-Da Tsai and Chun-Han Lin

(MLA) Machine Learning and its Applications

Prediction of Readmissions in Hospitalized Children and Adolescents by Machine Learning
Nayara C. da Silva, Marcelo K. Albertini, Andre R. Backes and Georgia G. Pena

Robust DeepFake Detection Method based on Ensemble of ViT and CNN
Hyunsoo Ha, Minsang Kim, Songhun Han and Sangjun Lee

ComplAI: Framework for Multi-Factor Assessment of Black-Box Supervised Machine Learning Models
Arkadipta De, Satya Swaroop Gudipudi, Sourab Panchanan and Maunendra Sankar Desarkar

Estimating Phenotypic Characteristics of Tuberculosis Bacteria
Derek James Sloan, Evelin Dombay, Wilber Sabiiti, Bariki Mtafya and Ognjen Arandelović

Show, Prefer and Tell: Incorporating User Preferences into Image Captioning
Annika Lindh, Robert Ross and John Kelleher

IMG-NILM: A Deep Learning NILM Approach Using Energy Heatmaps
Jonah Edmonds and Zahraa S. Abdallah

Convolutional Method for Modeling Video Temporal Context Effectively in Transformer
Hae Sung Park and Yong Suk Choi

Federated Hyperparameter Optimisation with Flower and Optuna
Juan Marcelo Parra-Ullauri, Xunzheng Zhang, Anderson Bravalheri, Reza Nejabati and Dimitra Simeonidou

Classification by Frequent Association Rules
Md Rayhan Kabir and Osmar Zaïane

MAFD: A Federated Distillation Approach with Multi-Head Attention for Recommendation Tasks
Aming Wu and Young-Woo Kwon

Adaptive Feature Selection Using an Autoencoder and Classifier: Applied to a Radiomics Case
N. Netten, Mortaza Shoae Bargh, Sunil Choenni, Tony Busker and Reza Zare Hassanpour

(NET) Networking

Time-Limited Bloom Filter
Ana Rodrigues, Ariel Shtul, Carlos Baquero and Paulo Sergio Almeida

A Lightweight Authentication and Privacy Preservation Scheme for MQTT
Sijia Tian and Vassilios Vassilakis

(WCN) Wireless Communications and Networking

Machine Learning for VRUs Accidents Prediction using V2X Data
Bruno Ribeiro, Maria Joao Nicolau and Alexandre Santos

WED 14:30 – 16:30
PM Poster Session
Room: A046

(CPS) Cyber-Physical Systems

Efficient Sanitization Design for LSM-based Key-Value Store over 3D MLC NAND Flash
Liang-Chi Chen, Shu-Qi Yu, Chien-Chung Ho, Wei-Chen Wang and Yung-Chun Li

Towards a High-Interaction Physics-aware Honeynet for Industrial Control Systems
Marco Lucchese, Massimo Merro, Federica Paci and Nicola Zannone

IoMiRCA: Root cause Analysis in IoT-Extended 5G Microservice Environments
Zeno Heeb, Onur Kalinagac, Wissem Soussi and Gürkan Gür

(DBDM) Databases and Big Data Management

HSMR-RAID: Enabling a Low Overhead RAID-5 System over a Host-Managed Shingled Magnetic Recording Disk Array
Ting-Yu Lin and Tseng-Yi Chen

On Evaluating Text Similarity Measures for Customer Data Deduplication
Paweł Boiński, Mariusz Sienkiewicz, Robert Wrembel, Bartosz Bębel and Witold Andrzejewski

EHS: An Efficient Hashing Scheme for Persistent Memory
Dereje Regassa, Dongkyu Sung, Sunggon Kim, Heon Young Yeom and Yongseok Son

(DM) Data Mining

A Fully Automated and Scalable Parallel Data Augmentation for Low Resource Languages using Image and Text Analytics
Prawaal Sharma, Poonam Goyal, Navneet Goyal and Vishnupriyan K. R

Summarizing Fuzzy Tensors with Sub-Tensors
Victor Henrique Silva Ribeiro and Loïc Cerf

Discovering Process Models that Support Desired Behavior and Avoid Undesired Behavior
Ali Norouzifar and Wil van der Aalst

Multivariate Time Series Evapotranspiration Forecasting using Machine Learning Techniques
Chalachew Muluken Liyew, Rosa Meo, Elvira Di Nardo and Stefano Ferraris

(DS) Data Streams

Accelerating the Quality Control of Genetic Sequences through Stream Processing
Óscar Castellanos-Rodríguez, Roberto R. Expósito and Juan Touriño

Online Adaptive Learning for Out-of-Round Railway Wheels Detection
Afonso Lourenço, Jorge Meira and Goreti Marreiros

Estimating Instantaneous Vehicle Emissions
Thiago Andrade and Joao Gama

(EMBS) Embedded Systems

ASCOM: Affordable Sequence-Aware COntention Modeling in Crossbar-based MPSoCs
Jeremy Jens Giesen León, Enrico Mezzetti, Jaume Abella and Francisco J Cazorla

(KRR) Knowledge Representation and Reasoning

Breaking Symmetry for Knowledge Compilation
Andrea Balogh and Barry O'Sullivan

Translating FOL-Theories into SROIQ-Tboxes
Fatima Danash and danielle ziebelin

(LASD) Lean and Agile Software Development

Agile GUI Testing by Computing Novel Mobile App Coverage Using Appium Tool
Sangharatna Godboley, Debasish Dalei, Ravichandra Sadam and Durga Prasad Mohapatra

Differences in Performance, Scalability, and Cost of using Microservice and Monolithic Architecture
Przemysław Jatkiewicz and Szymon Okrój

(OS) Operating Systems

Hot-Patching Platform for Executable and Linkable Format Binary Application for System Resilience
haegeon jeong, Jinsung An and Kyungtae Kang

Comparative Study on Fuchsia and Linux Device Driver Architecture
Taejoon Song and YoungJin Kim

(PL) Programming Languages

Synchronous Cooperative Threading Model in MSSL
Darine Rammal, Wadoud Bousdira and Frédéric Dabrowski

(SE) Software Engineering

Source Code Metrics for Software Defects Prediction
Dominik Arne Rebro, Stanislav Chren and Bruno Rossi

Deriving Metrics for Software Architectures from the "Protected Entry Points" Security Patterns
Monica Johana Buitrago, Isabelle Borne and Jérémy Buisson

Optimization of the Product Configuration System of Renault
hao xu, Souheib Baarir, Tewfik Ziadi, Siham Essodaigui, Yves Bossu and Lom Messan Hillah

A Performant and Secure Single Sign-On System Using Microservices
Mahyar Tourchi Moghaddam, Andreas Edal Pedersen, William Walter Lillebroe Bolding and Torben Worm

(SONAMA) Social Network and Media Analysis

Cyber Security and Online Safety Education for Schools in the UK: Looking through the Lens of Twitter Data
Jamie Knott, Haiyue Yuan, Matthew Boakes and Shujun Li

Graph Convolutional Neural Network for Multimodal Movie Recommendation
Prabir Mondal, Daipayan Chakder, Subham Raj, Sriparna Saha and Naoyuki Onoe

(SP) Software Platforms

Hierarchical Platform Design for the Comprehensive Test and Validation of Future Power Device using DT, RTDS, and PHILS
Jeongtaek Lim, Minho Kim, Kyung Sun Ham and Taehyoung Kim

Optimal Charging Method for Effective Li-ion Battery Life Extension Based on Reinforcement Learning
Minho Kim, Jeongtaek Lim, Kyung Sun Ham and Taehyoung Kim

(SVT) Software Verification and Testing

A Formal Analysis of Dutch Generic Integral Tunnel Design Models
Kevin H.J. Jilissen, Peter Dieleman and Jan Friso Groote

BlueCov: Integrating Test Coverage and Model Checking with JBMC
Matthias Güdemann and Peter Schrammel

(SWA) Semantic Web and Applications

An Ontology-Driven Approach for Process-Aware Risk Propagation
Gal Engelberg, Mattia Fumagalli, Adrian Kuboszek, Dan Klein, Pnina Soffer and Giancarlo Guizzardi

CEM: an Ontology for Crime Events in Newspaper Articles
Federica Rollo, Laura Po and Alessandro Castellucci

(KNLP) Knowledge and Natural Language Processing

Call Reason Prediction using Hierarchical Models
Vijay Varna Malladi and Suman Roy

A General and NLP-Based Architecture to Perform Recommendation: A Use Case for Online Job Search and Skills Acquisition
Ruben Alonso, Danilo Dessì, Antonello Meloni and Diego Reforgiato Recupero

Impact of Character n-Grams Attention Scores for English and Russian News Articles Authorship Attribution
Liliya Makhmutova, Robert Ross and Giancarlo Salton

(WE) Web Engineering

Usability Heuristics and Guidelines for RESTful APIs and Application to a Case Study
Eduardo Mosqueira-Rey, David Alonso-Rios and Nerea Vazquez-Callejon

Proxy-based Web Prefetching Exploiting Long Short-Term Memory
Jiwoong Won, Wenbo Zou, Ahn Jemin, Jiseoup Lim, Gun-woo Kim and Kyungtae Kang

Venue

Astra Building, Narva Road 29,
in Tallinn University,
Tallinn, Estonia

Welcome Reception

March 28, 2023
Tuesday at 7:00pm
Researchers Forum
Astra Building 1st Floor

Banquet

March 30, 2023
Thursday at 7:00pm
Lennusadam
Maritime Museum