APPLIED COMPUTING 2024
The 39th Annual ACM Symposium on Applied Computing

PROCEEDINGS OF THE 2024 ACM SYMPOSIUM ON APPLIED COMPUTING

Avila, Spain
April 8 – April 12, 2024

Organizing Committee

Jiman Hong
Juw Won Park
Marin Lujak
Ana Belén Gil
Hossain Shahriar

Fernando de la Prieta Pintado
Adam Przybyłek
John Kim
Sara Rodríguez Gonzalez
Junyoung Heo

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

Information Systems
(DBDM, DS, KRR, SONAMA)

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

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

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

Hosted by
University of Salamanca, Spain
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<th>Monday 04/08/2024</th>
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| **Opening & Keynote Session I**  
(9:30am – 11:00am) Chamber Hall  
Coffee Break  
(11am – 11:30am)  
AM Breakout Sessions  
(11:30am – 1:00pm) | AM Breakout Sessions  
(9:30am – 11:00am)  
Coffee Break  
(11am – 11:30am)  
AM Breakout Sessions  
(11:30am – 1:00pm)  
AM Posters Session  
(11:00am – 1:00pm) | **Keynote Session**  
(10am – 11:00am) Chamber Hall  
Coffee Break  
(11am – 11:30am)  
AM Breakout Sessions  
(11:30am – 1:00pm)  
AM Posters Session  
(11:00am – 1:00pm) | **SIGAPP Wrap-up Meeting**  
(10am – noon) |
| **SAC Luncheon**  
For all Registered Attendees  
(1:00pm – 2:30pm) Congress Hall | **SAC Luncheon**  
For all Registered Attendees  
(1:00pm – 2:30pm) Congress Hall | **SAC Luncheon**  
For all Registered Attendees  
(1:00pm – 2:30pm) Congress Hall | **The Conference Ends at 12:30pm**  
Thank you for your participation and we hope to see you all next year |
| **PM Breakout Sessions**  
(2:30pm – 4:00pm)  
Coffee Break  
(4:00pm – 4:30pm)  
PM Breakout Sessions  
(4:30pm – 6:00pm)  
SRC Poster Exhibit  
(4:00pm – 6:00pm) | **PM Breakout Sessions**  
(2:30pm – 4:00pm)  
Coffee Break  
(4:00pm – 4:30pm)  
PM Breakout Sessions  
(4:30pm – 5:30pm)  
PM Posters Session  
(3:00pm – 5:00pm) | **PM Breakout Sessions**  
(2:30pm – 4:00pm)  
Coffee Break  
(4:00pm – 4:30pm)  
PM Breakout Sessions  
(4:30pm – 6:00pm)  
SRC Oral Presentations  
(4:00pm – 6:00pm) | |
| **Future SAC Organization Meeting**  
(6:00pm – 7:00pm)  
SIGAPP Reception  
(7:30pm – 9:30pm) Congress Hall | **SIGAPP Annual Business Meeting**  
(5:30pm – 7:00pm) | **Track Chairs Meeting**  
(6:00pm – 7:00pm) | **SAC Banquet**  
(8:00pm – 11:00pm)  
Hotel “Palacio de los Velada” |
### **SAC 2024 Session Schedule**

**Monday April 08, 2024**

**Tutorial Sessions – Please see more on Tutorials Page**

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<tr>
<th>Room 1</th>
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<th>Room 3</th>
<th>Press Room</th>
<th>Room Mirador</th>
<th>Hallway (0 floor)</th>
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<tr>
<td>Opening/Keynote Address #1 (Chamber Hall, 0 floor)</td>
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**Notes:** Please note that the number inside the parentheses is the number of papers scheduled in the session.
Room 1, Room 2, and Room 3 are located on Floor -1 (Basement Floor), while Room Mirador and the Press Room are located on Floor 0 (Ground Floor)

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### Themes and their Tracks

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<td>AI &amp; Agents (9)</td>
<td>AIED(10), EC(3), HIBIO(4), GMLR(4), IRMAS(4), ISDE(5), KNLP(4), MLA(20), SSRAI(7)</td>
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<tr>
<td>Distributed Systems (7)</td>
<td>CC(3), DADS(4), DAPP(4), IE(6), INTOP(3), NET(3), WCN(5)</td>
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<td>Information Systems (4)</td>
<td>DBDM(5), DS(2), KRR(5), SONAMA(4)</td>
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<tr>
<td>Software Design &amp; Development (7)</td>
<td>LASD(7), RE(4), SATT(4), SE(8), SVT(6), ST(5), WE(3)</td>
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<tr>
<td>System Software &amp; Security (5)</td>
<td>CPS(8), EMBS(5), PL(4), SEC(15), SP-OS(6)</td>
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Theme(# of Tracks) / Track Name (# of presentations)
The 39th Annual ACM Symposium on Applied Computing

April 8 – April 12, 2024

SYMPOSIUM CHAIR
Jiman Hong, Soongsil University, South Korea

SYMPOSIUM VICE-CHAIR
Fernando de la Prieta Pintado, University of Salamanca, Spain

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John Kim, Utica University, USA

LOCAL ARRANGEMENT CHAIR
Sara Rodriguez Gonzalez, University of Salamanca, Spain

FINANCIAL CHAIR
John Kim, Utica University, USA

REGISTRATION CHAIR / WEBMASTER
Junyoung Heo, Hansung University, South Korea
About the Sponsoring SIG

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 Tei-Wei Kuo at ktw@csie.ntu.edu.tw or visit the SIGAPP website at http://www.acm.org/sigapp.
Track Chairs

Theme: Artificial Intelligence and Agents

AIED - Artificial Intelligence for Education
Danial Hooshyar, Tallinn University, Estonia
Roger Azevedo, University of Central Florida, USA
Mart Laanpere, Tallinn University, Estonia
Raija Hämäläinen, University of Jyväskylä, Finland
Marcelo Milrad, Linnaeus University, Sweden

EC - Applications of Evolutionary Computing
Federico Divina, Pablo de Olavide University, Spain
Francisco Gómez Vela, Universidad Pablo de Olavide de Sevilla, Spain
Miguel Garcia Torres, Universidad Pablo de Olavide, Spain

HIBIO - Health Informatics and Bioinformatics
Anu Mary Chako, National Institute of Technology Calicut, India
Gopakumar G, National Institute of Technology Calicut, India

GMLR – Graph Models for Learning and Recognition
Alessandro D'Amelio, University of Milan, Italy
Jianyi Lin, Università Cattolica del Sacro Cuore, Italy
Raffaella Lanzarotti, University of Milan, Italy
Giuliano Grossi, University of Milan, Italy

IRMAS - Intelligent Robotics and Multi-Agent Systems
Rui Rocha, University of Coimbra, Portugal

ISDE - Intelligent Systems for Digital Era
Tarmo Robal, Tallinn University of Technology, Estonia
Innar Liiv, Tallinn University of Technology, Estonia
Diana Kalibatienė, Vilnius Gediminas Technical University, Lithuania
Raimundas Matulevicius, University of Tartu, Estonia

KNLP - Knowledge and Natural Language Processing
Mauro Dragoni, Fondazione Bruno Kessler, Italy
Marco Rospocher, Università degli Studi di Verona, Italy
MLA - Machine Learning and its Applications
Jee-Hyong Lee, Sungkyunkwan Univ, Republic of Korea
Keon Myung Lee, Chungbuk National University, Republic of Korea

SSRAI – Safe, Secure and Robust AI
Tommaso Zoppi, University of Florence, Italy
Jeremie Guiochet, University of Toulouse, LAAS CNRS, France
Antonio Pecchia, University of Sannio, Italy
Maura Pintor, University of Cagliari, Italy

Theme: Distributed Systems

CC - Cloud Computing
Priya Chandran, National Institute of Technology Calicut, India
S.D Madhu Kumar, National Institute of Technology Calicut, India

DADS - Dependable and Adaptive Distributed Systems
Rui Oliveira, INESC TEC & University of Minho, Portugal
Karl Goeschka, Vienna University of Technology, Austria
Matti Hiltunen, AT&T, United States

DAPP - Decentralized Applications with Blockchain, DLT and Crypto-Currencies
Jean-Marc Seigneur, University of Geneva, Switzerland
Suzana Moreno, University of Geneva, Switzerland

IE – IoT and Edge Computing
Hong Min, Gachon University, Republic of Korea
Sabur Baidya, University of Louisville, United States

INTOP – Interoperability
Young-Gab Kim, Sejong University, Republic of Korea

NET - Networking
Mario Freire, University of Beira Interior, Portugal
Marilia Curado, University of Coimbra, Portugal
Ivan Ganchev, University of Limerick, Ireland

WCN - Selected Areas of Wireless Communications and Networking
Dongkyun Kim, Kyungpook National University, Republic of Korea
Wei Wang, San Diego State University, United States
Theme: Information Systems

**DBDM - Databases and Big Data Management**
Junping Sun, Nova Southeastern University, United States
Apostolos Papadopoulos, Aristotle University of Thessaloniki, Greece
Ramzi Haraty, Lebanese American University, Lebanon

**DS - Data Streams**
Albert Bifet, Telecom ParisTech, France
Bruno Veloso, INESC TEC, Portugal
Joao Gama, INESC TEC, University of Porto, Portugal
Heitor Gomes, Victoria University of Wellington, New Zealand

**KRR - Knowledge Representation and Reasoning**
Stefano Bistarelli, Università di Perugia, Italy
Martine Ceberio, University of Texas El Paso, United States
Eric Monfroy, University of Angers, France
Francesco Santini, Università di Perugia, Italy
Carlo Taticchi, University of Perugia, Italy

**SONAMA - Social Network and Media Analysis**
Sang-Wook Kim, Hanyang University, Republic of Korea
Yunyong Ko, University of Illinois at Urbana-Champaign, United States
Theme: Software Design & Development

LASD - Lean and Agile Software Development
Adam Przybyłek, Gdańsk University of Technology, Poland

RE - Requirement Engineering
Maria Lencastré Pinheiro de Menezes Cruz, State University of Pernambuco, Portugal
Giovanni Giachetti, Universidad Andres Bello, Chile

SATTA - Software Architecture - Theory, Technology, and Applications
Matteo Camilli, Politecnico di Milano, Italy
Ana Petrovska, Technical University of Munich, Germany
Giovanni Quattrocchi, Politecnico di Milano, Italy

SE - Software Engineering
Eunjee Song, Baylor University, United States
Byungjeong Lee, University of Seoul, Republic of Korea
Geunseok Yang, Hankyong National University, Republic of Korea

SVT - Software Verification and Testing
Georgiana Caltias, University of Twente, The Netherlands
Justyna Petke, University College London, United Kingdom
Peter Lammich, University of Twente, The Netherlands

ST – Semantic Technologies
Sangsoo Sung, Google Inc., United States
Hyoil Han, Illinois State University, United States
Soon Ae Chun, CUNY, United States

WE - Web Engineering
Cristian Mateos, ISISTAN-UNICEN-CONICET, Argentina
Tim A. Majchrzak, University of Agder, Norway
Flavius Frasincar, Erasmus University Rotterdam, Netherlands
Theme: System Software and Security

CPS - Cyber-Physical Systems
Mengying Zhao, Shandong University, China
Qiao Li, Xiamen University, China
Jingtong Hu, University of Pittsburgh, United States
Bruno Rossi, Masaryk University, Czech Republic

EMBS - Embedded Systems
Jalil Boukhobza, ENSTA-Bretagne Lab-STICC, France
Marco D. Santambrogio, Politecnico di Milano, Italy
Chien-Chung Ho, National Cheng Kung University, Taiwan

PL – Programming Language
Barrett Bryant, Texas State University, United States
Rajeev Raje, Indiana University-Purdue University-Indianapolis, USA
Marco Giunti, NOVA School of Science and Technology, Portugal

SEC - Computer Security
Diego Sempreboni, Industry, United Kingdom
Giampaolo Bella, Università di Catania, Italy
Ronald Petrlic, TH Nürnberg, Germany
Christoph Sorge, Saarland University, Germany

SP-OS - Software Platform – Operating System
Joonhyouk Jang, Hannam University, Republic of Korea
Jinman Jung, Inha University, Republic of Korea
Bongjae Kim, Chungbuk National University, Republic of Korea
Kwanghee Won, South Dakota State University, United States
On behalf of the Organizing Committee, I extend a warm welcome to you at the 39th Annual ACM Symposium on Applied Computing (SAC 2024), taking place in Ávila, Spain, and hosted by the University of Salamanca. For more than three decades, this international forum has been dedicated to computer scientists, engineers, and practitioners, providing a platform for presenting their research findings and results in various areas of applied computing. The organizing committee sincerely appreciates your participation in this exciting international event, and we hope that the conference proves interesting and beneficial for all attendees.

SAC 2024 is proudly sponsored by the ACM Special Interest Group on Applied Computing (SIGAPP), whose mission is to further the interests of computing professionals engaged in the design and development of new computing applications, interdisciplinary application areas, and applied research. This conference is committed to the study of applied computing research addressing real-world problems. Additionally, the event serves as a forum for discussing and exchanging new ideas across a wide spectrum of applied computing areas. We all recognize the importance of staying updated on the latest developments and research in our respective areas of expertise.

SAC 2024 offers Technical Tracks and Poster Sessions, and the success of the conference is attributed to the substantial contributions of dedicated Track Chairs and Co-Chairs. Each track maintains a program committee and a team of highly qualified reviewers. We extend our sincere thanks to the Track Chairs, Co-Chairs, Committee Members, and participating reviewers for their hard work and efforts, which contribute to making SAC 2024 a high-quality conference. Our gratitude also goes to our invited keynote speakers, Dr. Xue (Steve) Liu from McGill University, Canada, and Dr. Paulo Novais from University of Minho, Portugal.

Most importantly, we express our deep gratitude to the authors and presenters for sharing their experiences, and to all attendees for joining us in Ávila, Spain, this year.

The organizing committee has played a crucial role in the success of SAC 2024. Our appreciation goes to the Local Arrangement Chair, Dr. Sara Rodriguez Gonzalez, University of Salamanca, Salamanca, Spain. We extend sincere appreciation to the Publication Chair, Dr. Hossain Shahriar, University of West Florida, Florida, USA, for his tremendous effort in compiling the conference proceedings. Special thanks to the Posters Chair, Dr. Marin Lujak Rey Juan Carlos University, Madrid, Spain, for his hard work in creating a successful Poster Program, and to the Tutorial Chair, Dr. Ana Belén Gil, University of Salamanca, Salamanca, Spain, for organizing the Tutorials. Additionally, we acknowledge Dr. John Kim, Utica University, New York, USA, for organizing the Student Research Competition and serving as treasurer, and Dr. Junyoung Heo, Hansung University, Seoul, South Korea, for the role of registration chair and webmaster.

We also express our gratitude to the Program Co-Chairs, Dr. Juw Won Park, University of Louisville, Kentucky, USA, and Dr. Adam Przybylek, Gdańsk University of Technology, Gdańsk, Poland, for coordinating and bringing together an excellent Technical Program.

Once again, we welcome you to SAC 2024, and we hope you thoroughly enjoy the conference. Looking ahead, we invite you to participate in SAC 2025, which will be held in Sicily, Italy.
Welcome to the 39th International Symposium on Applied Computing (SAC 2024). For the past 39 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 2024.

The open Call for Track Proposals and after prescreening the proposals, 34 Tracks were finally accepted for SAC 2024. 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 773 final paper submissions from over 40 different countries. The submitted papers underwent the blind review process and 180 submissions were finally accepted as full papers for inclusion in the Conference Proceedings and presentation during the Symposium. The final acceptance rate for SAC 2024 is (23.3%) for the overall track. In addition to the accepted full papers, 71 submissions that received high enough review scores were accepted as poster papers for the Posters program. The Student Research Competition (SRC) program is designed to provide graduate students the opportunity to meet and exchange ideas with researchers and practitioners in their areas of interest. 36 submissions received and finally 7 (19%) papers were accepted for the SRC program.

The Technical Program of SAC 2024 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 2024 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 2024 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 University of Salamanca, Spain. We wish you have a great time at Avila, Spain in SAC 2024, and you will have the opportunity to share and exchange your ideas and foster new collaborations. We hope to see you all at SAC 2025.
SAC 2024 Keynote

Title: Bridging the Gap: My Experiences in Academia and Industry as an Applied Computing Researcher

Speaker: Dr. Xue (Steve) Liu, School of Computer Science, McGill University, Canada

Abstract

Applied computing research holds immense importance in computer science because it bridges theory and practical applications. It translates cutting-edge computing technologies into tangible solutions that address real-world challenges. In this talk, I will share my experience and lessons learned as an applied computing researcher who has worked in both academia and industry. I will embark on a personal journey - from my decision to transition from a mathematics student to a Ph.D. in computer science, followed by becoming a university professor, and then venture into the dynamic landscapes of startups, entrepreneurship, and corporate R&D, exploring diverse areas including computing systems, networking, and AI/machine learning.

Beyond sharing my experiences, I will discuss the core differences between academic research and industry research, and their pros and cons. Finally, I'll argue why closer collaboration between academia and industry is crucial for the future success of computing, and discuss actionable ways to carry out the collaboration.

Biography

Dr. Xue (Steve) Liu is a Full Professor in the School of Computer Science and a William Dawson Chair Professor at McGill University. He is also a Professor (Courtesy Appointment) of Mathematics and Statistics at McGill University. He served as VP R&D, Chief Scientist, and Co-Director of the Samsung AI Center Montreal, where he led the R&D of AI innovations in multiple areas including telecommunications, mobile computing, IoT, and robotics. He was also the Chief Scientist at Tinder Inc., leading the research and innovation for the world’s largest dating and social discovery app valued at over 10 Billion US$. He also worked briefly as the Samuel R. Thompson Chair Associate Professor in the Department of Computer Science and Engineering at The University of Nebraska-Lincoln, at Hewlett-Packard Labs in Palo Alto, California, and IBM T. J. Watson Research Center in New York.

Dr. Liu is an IEEE Fellow, and a Fellow of the Canadian Academy of Engineering. He is an associate member at the Quebec AI Institute (Mila). His research interests focus on Intelligent Computing and Communications Systems, AI/Machine Learning, Sustainable Computing, IoT and CPS. He has published 5 books and over 400 research papers in major peer-reviewed international journals and conference proceedings, and received 10 best paper awards from IEEE or ACM. He has served as the associate editor/advisor of several international academic journals and has served on the technical and organization committees of over 100 international conferences/workshops. He is a recipient of several awards including the Mitacs Award for Exceptional Leadership — Professor, and the Outstanding Young Canadian Computer Science Researcher Prizes from the Canadian Association of Computer Science. He is the current chair of ACM SIGBED. Dr. Liu has advised several high-tech startups. These startups have raised over 250 million US$ in funding.
Title: Empowering human intelligence with AI integration: Creating more intelligent, intuitive, and understandable systems

Speaker: Dr. Paulo Novais, School of Informatics, University of Minho, Portugal

Abstract

The importance of Artificial Intelligence today, which goes far beyond the limits of “simple” technology, and the need to humanise its application and use in accordance with ecological and ethical principles, serve as the basis for this discussion.

The challenges that lie ahead are enormous and include the development of systems that are necessarily more intelligent, but that meet the requirements of transparency and explainability (as far as possible), and that are fundamentally sensitive to the human presence, with the strictest respect for human values and dignity.

I'd like to present some of the projects I've been involved in that are a step in this direction.

The ability to change the world is in our hands, but we must use it wisely.

Biography

Dr. Paulo Novais is a Full Professor of Computer Science at the Department of Informatics, the School of Engineering, the University of Minho (Portugal), and a researcher at the ALGORITMI Centre.

He is the director of the PhD Program in Informatics and co-founder and Deputy Director of the Master in Law and Informatics at the University of Minho.

He started his career developing scientific research in the field of Intelligent Systems/Artificial Intelligence (AI), namely in Knowledge Representation and Reasoning, Machine Learning and Multi-Agent Systems. His interest, in the last years, was absorbed by the different, yet closely related, concepts of Ambient Intelligence, Decision, Conflict Resolution, Behavioural Analysis, Digital Assistants and the incorporation of AI methods and techniques in these fields.

His main research objective is to make systems a little more smart, reliable, and sensitive to human presence and interaction.

He is the coordinator of the Portuguese Intelligent Systems Associate Laboratory (LASI).

Former president of the Portuguese Association for Artificial Intelligence, Senior member of the IEEE and Chair of the Computational Intelligence Society Portuguese Chapter, Member of the IFIP - TC 12 Artificial Intelligence, and of the executive committee of the IBERAMIA.

He has served as an expert of several institutions such as the EU Commission and FCT (Portuguese agency that supports science, technology, and innovation).
Other Activities

SIGAPP Annual Business Meeting:
Wednesday April 10, from 17:30 to 19:00 (Location: TBD). Open to everyone.

Future SAC Organization Meeting:
Tuesday April 9, from 18:00 to 19:00 (Location: TBD). Open to everyone.

SIGAPP Reception:
Tuesday April 9, from 19:30 to 21:30 (Location: Congress Hall). Open to everyone.

Track Chairs Meeting:
Thursday, April 11, from 18:00 to 19:00 (Location: TBD). Open for the Organizing Committee and Track Chairs.

SAC Banquet:
Thursday, April 11, from 20:00 to 23:00 (Location: Hotel Palacio de los Velada). Open for Banquet Ticket holders. See your tickets for full details.

SAC Best Papers/Best Posters Award:
Thursday, April 11. 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 16:00 to 18:00 (Location: Hallway) and Oral Presentations on Thursday 16:00 to 18:00 (Location: Room Mirador). Medals and certificates will be given to the top three winners during the SAC Banquet.

SIGAPP Wrap-up Meeting:
Friday April 12, from 10:00 to 12:00 (Location: TBD). Open to everyone.
### Monday April 08, 2024

**Mon 14:30 – 18:30**  
Rooms: TBA  
Tutorials  
See tutorial pages for more details

### Tuesday April 09, 2024

**TUE 9:30–11:00**  
Room: Chamber Hall  
Keynote Address  
Dr. Steve X. Liu  
See page 15 for details.

**TUE 11:00 – 11:30**  
Coffee Break

**TUE 11:30 – 13:00**  
Room: 1  
(DAPP) Decentralized Applications with Blockchain, DLT and Crypto-Currencies Track  
Session Chair: Jean-Marc Seigneur

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ACCOUNT DISCOVERY: IDENTIFYING WEB3 SNS ACCOUNTS AT RISK OF DE-ANONYMIZATION  
Daiki Ito, Yuta Takata, Keika Mori, Ryoya Furukawa, Hiroshi Kumagai and Masaki Kamizono

ELECTRICITY CONSUMPTION OF ETHEREUM AND FILECOIN: ADVANCES IN MODELS AND ESTIMATES  
Elitsa Pankovska, Ashish Rajendra Sai, Harald Vranken and Alan Ransil

Iván Abellán Álvarez, Vincent Gramlich and Johannes Sedlmair

A STUDY OF MEV EXTRACTION TECHNIQUES ON A FIRST-COME-FIRST-SERVED BLOCKCHAIN  
Burak Öz, Filip Rezabek, Jonas Gebele, Felix Hoops and Florian Matthes
TOWARDS A LABELING METHOD FOR EDUCATION PROCESS MINING AND A CASE STUDY ON HIGHER EDUCATION
Luiz Fernando Puttow Southier, Marcelo Teixeira, Dalcimar Casanova and Edson Emilio Scalabrin

PETRI NETS FOR SMART GRIDS: THE STORY SO FAR
Mouzhi Ge, Bruno Rossi, Stanislav Chren and José Miguel Blanco

EVALUATING TRUSTWORTHINESS OF ONLINE NEWS PUBLISHERS VIA ARTICLE CLASSIFICATION
John Bianchi, Manuel Pratelli, Marinella Petrocchi and Fabio Pinelli

ON THE RELEVANCE OF VALUE SYSTEM STRUCTURE FOR AUTOMATED VALUE-ALIGNED DECISION-MAKING
Marcelo Karanik, Holger Billhardt, Alberto Fernandez and Sascha Ossowski

FROM SELF-SOVEREIGN IDENTITY TO FIDUCIARY IDENTITY: A JOURNEY TOWARDS GREATER USER PRIVACY AND USABILITY
Frederico Schardong and Ricardo Custodio

WIKI-BASED PROMPTS FOR ENHANCING RELATION EXTRACTION USING LANGUAGE MODELS
Amirhossein Layegh, Amir H. Payberah, Mihhail Matskin, Ahmet Soylu and Dumitru Roman

TOWARD SCALABLE AND TRANSPARENT MULTIMODAL ANALYTICS TO STUDY STANDARD MEDICAL PROCEDURES: LINKING HAND MOVEMENT, PROXIMITY, AND GAZE DATA
Ville Heilala, Sami Lehesvuori, Raija Hämäläinen and Tommi Kärkkäinen

EFFECTIVENESS OF LIGHTWEIGHT AUTOMATED SUPPORT FOR LEARNING ABOUT DYNAMIC SYSTEMS WITH QUALITATIVE REPRESENTATIONS
Marco Kragten and Bert Bredeweg

DECODING THE NATURALLY ARISEN LEADERSHIP IN COLLABORATIVE LEARNING: A BAYESIAN SIMULATION AND HUMAN NETWORK STUDY
Zheng Fang, Jae Young Han, Ahmad Ari Aldino, Zhijie Feng and Toby Cai

SIG-NET: GNN BASED DROPOUT PREDICTION IN MOOCS USING STUDENT INTERACTION GRAPH
Daeyoung Roh, donghee han, Daehee Kim, Keejun Han and Mun Yi

EXPLORING THE EFFECTIVENESS OF READING VS. TUTORING FOR ENHANCING CODE COMPREHENSION FOR NOVICE
Priti Oli, Rabin Banjade, Arun Balajiee Lekshmi Narayanan, Peter Brusilovsky and Vasile Rus
SOFTWARE ARCHITECTURE RECOVERY FROM MULTIPLE DEPENDENCY MODE
Metin Altinisik, Hasan Sozer and Gonca Gursun

ML-ENABLED SERVICE DISCOVERY FOR MICROSERVICE ARCHITECTURE: A QOS APPROACH
Stefano Florio, Karthik Vaidhyanathan, Mauro Caporuscio and Henry Muccini

COMPARING THE SIMILARITY OF OPENAPI-BASED MICROSERVICES
Zhongyi Lu, Declan T Delaney and David Lillis

VAMP: VISUAL ANALYTICS FOR MICROSERVICES PERFORMANCE
Luca Traini, Jessica Leone, Giovanni Stilo and Antinisca Di Marco

TUE 14:30 – 16:00
Room: 2
(HIBIO) Health Informatics and Bioinformatics Track
Session Chairs: Anu Chacko and Gopakumar G

PRIOR-BASED ENHANCED ASD-POCS FOR ARTIFACT SUPPRESSION AND STRUCTURAL PRESERVATION IN SPARSEVIEW CBCT
D M BAPPY, Donghwa Kang, Jinkyu Lee and Hyeongboo Baek

APPLYING DYNAMIC BALANCING TO IMPROVE THE PERFORMANCE OF MPI PARALLEL GENOMICS APPLICATIONS
Alejandro Fernandez-Fraga, Jorge Gonzalez-Dominguez and Maria J. Martin

A NOVEL HIERARCHY-BASED KNOWLEDGE DISCOVERY FRAMEWORK FOR ELUCIDATING HUMAN AGING-RELATED PHENOTYPIC ABNORMALITIES
Cen Wan and Carl Barton Jhaveri, Abdulatif Alabdulatif and Rajkumar Gaur

KNOWLEDGE SYNTHESIS USING LARGE LANGUAGE MODELS FOR A COMPUTATIONAL BIOLOGY WORKFLOW ECOSYSTEM
Hasan Jamil, Steve Krawetz and Alexander Gow

TUE 11:30 – 13:00
Room: Mirador
(SATTA) Software Architecture—Theory, Technology, and Applications Track
Session Chair: Matteo Camilli

FUNCMEM: REDUCING COLD START LATENCY IN SERVERLESS COMPUTING THROUGH MEMORY PREDICTION AND ADAPTIVE TASK EXECUTION
Manish Pandey and Young-Woo Kwon

TUE 13:00 – 14:30
Lunch Break
(Congress Hall)

TUE 14:30 – 16:00
Room: 1
(CC) Cloud Computing Track
Session Chairs: Priya Chandran and SD Madhu Kumar

DISJUNCTIVE MULTI-LEVEL DIGITAL FORGETTING SCHEME
Marwan Darwish and Georgios Smaragdakis

DECENTRALIZED FAAS OVER MULTI-CLOUDS WITH BLOCKCHAIN BASED MANAGEMENT FOR SUPPORTING EMERGING APPLICATIONS
Rabimba Karanjai, Lei Xu, Lin Chen, Nour Diallo and Weidong Shi

TUE 14:30 – 16:00
Room: 3
(CPS-1) Cyber-Physical Systems Track
Session Chair: Yi-Syuan Lin

HARDWARE AND SOFTWARE GENERATION FROM LARGE ACTOR MACHINES IN STREAMING APPLICATIONS
Gareth Callanan and Flavius Gruian
SATELLITE IMAGERY-ASSISTED LINK-BUDGET ANALYSIS ALGORITHM FOR SMART GRID WIRELESS BACKHAUL NETWORK PLANNING
Marina L. S. C. Vieira, Marina de Lara, Marcelo Pellenz, Mauricio Biczkowski, Marcos Alberto Mochinski, Fabrício Enembreck, Edgard Jamhour and Voldi Costa Zambenedetti

MOT-AS: REAL-TIME SCHEDULING FRAMEWORK FOR MULTI-OBJECT TRACKING CAPTURING ACCURACY AND STABILITY
Donghwa Kang, Kilho Lee, Cheol-Ho Hong, Youngmoon Lee, Jinkyu Lee and Hyeongboo Baek

BINARY FOLDING COMPRESSION FOR EFFICIENT SOFTWARE DISTRIBUTION
Jinheng Li, Qiao Li, Hu Wan and Jason Xue

UX-ANALYZER: VISUALIZING THE INTERACTION EFFORT FOR WEB ANALYTICS
Juan Gardey, Julián Grigera, Andrés Rodriguez and Alejandra Garrido

ASYNCSLA: TOWARDS A SERVICE LEVEL AGREEMENT FOR ASYNCHRONOUS SERVICES
Marc Oriol, Abel Gómez and Jordi Cabot

ELYSIA: OPTIMIZING JAVASCRIPT WEB FRAMEWORK
Chayapat Archiwanguprok, Kongkeit Khunpanitchot, Phoomparin Mano and Manachai Toahchoodee

THE TEMPORAL DYNAMICS OF PROCRASTINATION AND ITS IMPACT ON ACADEMIC PERFORMANCE: THE CASE OF A TASK-ORIENTED PROGRAMMING COURSE
Javier Conde, Sonsoles López-Pernas, Enrique Barra and Mohammed Saqr

ON THE RELATION OF CAUSALITY- VERSUS CORRELATION-BASED FEATURE SELECTION ON MODEL FAIRNESS
Mirka Saarela

CHATGPT AS A MATH QUESTIONER? EVALUATING CHATGPT ON GENERATING PRE-UNIVERSITY MATH QUESTIONS
Phuoc Pham, Anh Vu, Nhat Hoang, Xuan Long Do and Anh Tuan Luu

GENERATIVE AI-ENHANCED ACADEMIC WRITING: A STAKEHOLDER-CENTRIC APPROACH FOR THE DESIGN AND DEVELOPMENT OF CHAT4ISP-AI
Mohammed Taiye, Christopher High, Johanna Velander, Khaled Matar, Rihards Okmanis and Marcelo Milrad

CONTEXTUAL EMBEDDINGS AND GRAPH CONVOLUTIONAL NETWORKS FOR CONCEPT PREREQUISITE LEARNING
Jean-Charles Layoun, Amal Zouaq and Michel Desmarais

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CONTEXTUAL EMBEDDINGS AND GRAPH CONVOLUTIONAL NETWORKS FOR CONCEPT PREREQUISITE LEARNING
Jean-Charles Layoun, Amal Zouaq and Michel Desmarais
FORTRESS: SECURING IOT PERIPHERALS WITH TRUSTED EXECUTION ENVIRONMENTS
Peterson Yuhala, James Menetrey, Pascal Felber, Marcelo Pasin and Valerio Schiavoni

SOLVABILITY OF BYZANTINE FAULT-TOLERANT CAUSAL ORDERING: SYNCHRONOUS SYSTEMS CASE
Anshuman Misra and Ajay Kshemkalyani

TUE 16:30 – 18:00
Room: 2
(IRMAS) Intelligent Robotics and Multi-Agent Systems
Session Chair: Rui P. Rocha

TEMPORAL LOGIC FORMALISATION OF ISO 34502 CRITICAL SCENARIOS:
MODULAR CONSTRUCTION WITH THE RSS SAFETY DISTANCE
Jesse Reimann, Nico Mansion, James Haydon, Benjamin Bray, Agnishom Chattopadhyay, Sota Sato, Masaki Waga, Étienne André, Ichiro Hasuo, Naoki Ueda and Yosuke Yokoyama

BRIDGING DNA STORAGE AND COMPUTATION: AN INTEGRATED FRAMEWORK FOR EFFICIENT BIOMOLECULAR DATA MANAGEMENT
Yi-Syuan Lin, Yu-Pei Liang, Yuan-Hao Chang, Wei-Kuan Shih and Wen Sheng Lim

INTELLIGENT COEXISTENCE OF HYBRID VLC-RF AND WI-FI FOR INDOOR WIRELESS CYBER-PHYSICAL SYSTEMS
Yuhan Su, Yuchen Lin, Sicong Liu, Minghui Liwang, Xinqin Liao, Tingzhu Wu and Zhong Chen

TUE 16:30 – 18:00
Room: 3
(CPS-2) Cyber-Physical Systems Track
Session Chair: Hu Wan

INFORMED HETEROGENEOUS ATTENTION NETWORKS FOR METAPATH BASED LEARNING
Lorenz Wendlinger and Michael Granitzer

CHANGE POINT DETECTION IN EVOLVING GRAPH USING MARTINGALE
Shen-Shyang Ho and Tarun Teja Kairamkonda

BEYOND THE ADDITIVE NODES' CONVOLUTIONS: A STUDY ON HIGH-ORDER MULTIPLICATIVE INTEGRATION
Paolo Frazzetto, Luca Pasa, Nicolò Navarin and Alessandro Sperduti

GENDER CLASSIFICATION VIA GRAPH CONVOLUTIONAL NETWORKS ON 3D FACIAL MODELS
Giorgio Blandano, Jacopo Burger, Annalisa Cappella, Claudia Dolci, Giuseppe Maurizio Facchi, Federico Pedersini, Chiarella Sforza and Gianluca M. Tartaglia
A GENETIC ALGORITHM-BASED AUTO-ML SYSTEM FOR SURVIVAL ANALYSIS
Tossapol Pomsuwan and Alex A. Freitas

AN ADAPTIVE BIASED RANDOM-KEY GENETIC ALGORITHM FOR THE TACTICAL BERTH ALLOCATION PROBLEM
Antonio Chaves, Jose F Goncalves, Rudinei M Oliveira and Luiz A Lorena

AN EVOLUTIONARY TRICLUSTERING APPROACH TO DISCOVER ELECTRICITY CONSUMPTION PATTERNS IN FRANCE
David Gutiérrez-Avilés, José F. Torres, Francisco Martínez-Álvarez and Jairo Cugliari

DATA POISONING DETECTION IN FEDERATED LEARNING
Denise-Phi Khuu, Michael Sober, Dominik Kaaser, Mathias Fischer and Stefan Schulte

VALIDATION OF SAFETY METRICS FOR OBJECT DETECTORS IN AUTONOMOUS DRIVING
Andreas Rønnestad, Andrea Ceccarelli and Leonardo Montecchi

CAN YOU TRUST YOUR AGENT? THE EFFECT OF OUT-OF-DISTRIBUTION DETECTION ON THE SAFETY OF REINFORCEMENT LEARNING SYSTEMS
Tom Haider, Karsten Roscher, Benjamin Herd, Felippe Schmoeller Roza and Simon Burton

CAN YOU TRUST YOUR ML METRICS? USING SUBJECTIVE LOGIC TO DETERMINE THE TRUE CONTRIBUTION OF ML METRICS FOR SAFETY
Benjamin Herd and Simon Burton

AN EMPIRICAL STUDY OF THE IMPACT OF WATERFALL AND AGILE METHODS ON NUMBERS OF REQUIREMENTS-RELATED DEFECTS
Anzira Rahman, Luiz Marcio Cysneiros and Daniel Berry

HOW FACIAL RECOGNITION TECHNOLOGIES AFFECT THE TRANSGENDER COMMUNITY?
A SYSTEMATIC MAPPING STUDY
Michel Silva and George Valenca
A CATALOG OF NON-FUNCTIONAL REQUIREMENTS AND PATTERNS FOR MICROSERVICES MIGRATION
Marcio Veronez, Ivonei Freitas da Silva, Victor Francisco Araya Santander and Elder Elisandro Schemberger

A VIEW OF THE TECHNICAL, INDIVIDUAL, AND SOCIAL DIMENSIONS OF SUSTAINABLE SOFTWARE SYSTEMS: A SYSTEMATIC LITERATURE REVIEW
Quelita Ribeiro, Abimael Santos, Karolyne Oliveira, JAE LSON CASTRO and Maria Lencastre Pinheiro de Menezes Cruz

AVOIDING EMPTY INSTANCES AND OFFSET DRIFTS OF BASIC SEQUENCER TASKS IN AUTOMOTIVE OPERATING SYSTEM
Muhammad Tanveer Ali Ahmad, Michael Krisper, Leandro Batista Ribeiro and Marcel Baunach

TRAFFIC SIGNAL PREEMPTION AND PRIORITIZATION FOR HIGH-DENSITY ROAD NETWORKS
Chun Ting Wu, Yung-jen Hsu, Chia-Heng Tu and Shao Hua Wang

ON ENHANCING DATA INTEGRITY WITH LOW-COST RETENTION-REFILLABLE PROGRAMMING SCHEME
Kun-Chi Chiang, Yung-Chun Li, Wei-Chen Wang and Wei-Kuan Shih

PIGMALION: A PARTIAL INCREMENTAL GAUSSIAN MIXTURE MODEL WITH A LOW I/O DESIGN
Meriem Bouzouad, Yasmine Benhamadi, Camelia Slimani and Jalil Boukhobza

FAIR AND STARVATION-FREE SPINLOCK FOR REAL-TIME AUTOSAR SYSTEMS
Drona Nagarajan, Tobias Scheipel and Marcel Baunach

INTEGRATED INTEROPERABILITY BASED PANORAMIC VIDEO SYNOPSIS FRAMEWORK
Palash Ingle and Young-Gab Kim

LINK: SELF-ADAPTIVE SYSTEM WITH HUMAN-MACHINE TEAMING-BASED LOOP FOR INTEROPERABILITY IN IOT ENVIRONMENT
Hongseok Oh, Kyungchang Jeong, Euijong Lee and Ji-Hoon Jeong

RECKG: KNOWLEDGE GRAPH FOR RECOMMENDER SYSTEMS
Junhyuk Kwon, Seokho Ahn and Young-Duk Seo

ARE K-CORES MEANINGFUL FOR TEMPORAL GRAPH ANALYSIS?
Alessio Conte and Davide Rucci

A LARGE LANGUAGE MODEL APPROACH TO DETECT HATE SPEECH IN POLITICAL DISCOURSE USING MULTIPLE LANGUAGE CORPORA
Aillkeen de Oliveira, Cláudio de Souza Baptista, Anderson Almeida Firmino and Anselmo Cardoso de Paiva

ALL POLARIZED BUT STILL DIFFERENT: A MULTI-FACTORIAL METRIC TO DISCRIMINATE BETWEEN POLARIZATION BEHAVIORS ON SOCIAL MEDIA
Celina Treuellier, Sylvain Castagnos and Armelle Brun

COOPERATIVE EMBEDDING - A NOVEL APPROACH TO TACKLE THE OUT-OF- VOCABULARY DILEMMA IN BOT
AKHILA VH and Dr. Anu Mary Chacko

WED 9:30 – 11:00
Room: Mirador
(INTOP) Interoperability Track
Session Chair: Young-Gab Kim

WED 11:00 – 11:30
Coffee Break
MULTI-CONFEDERATED LEARNING: INCLUSIVE NON-IID DATA HANDLING WITH DECENTRALIZED FEDERATED LEARNING
Michael Duchesne, Kaiwen Zhang and Talhi Chamseddine

UNDERSTANDING THE PROCESS OF DATA LABELING IN CYBERSECURITY
Tobias Braun, Irdin Pekaric and Giovanni Apruzzese

DECEPTIVE SKIES: LEVERAGING GANS FOR DRONE SENSOR DATA FALSIFICATION
Mehmed Uludag, Maryna Veksler, Yasin Yilmaz and Kemal Akkaya

EFFICIENT KEY-BASED DATA LINKING THROUGH KEY TRANSFER BETWEEN KNOWLEDGE GRAPHS
Thibaut SOULARD, Fatiha Saïs, Joe Raad and Gianluca Quercini

AN EXPERIMENT IN RETROFITTING COMPETENCY QUESTIONS FOR EXISTING ONTOLOGIES
Reham Alharbi, Valentina Tamma, Floriana Grasso and Terry Payne

TOWARDS OPTIMIZATIONS OF QUANTUM CIRCUIT SIMULATION FOR SOLVING MAX-CUT PROBLEMS WITH QAOA
Yu-Cheng Lin, Chuan-Chi Wang, Chia-Heng Tu and Shih-Hao Hung

OPTIMIZING READ PERFORMANCE OF HBASE THROUGH DYNAMIC CONTROL OF DATA BLOCK SIZES AND KVCACHE
Sangeun Chae, Wonbae Kim, Daegyu Han, Jeongmin Kim and Beomseok Nam

HIGH ENERGY EFFICIENCY MOBILE AR APPLICATIONS UNDER ADAPTIVE OBJECT DETECTION ENGINE AND SELF-LEARNING GOVERNOR
He-Ru Chen, Kun-Sheng Liu, Ya-Shu Chen and Hsiu-Yi Ou Yang

KNOWLEDGE SHARING BASED LIGHTWEIGHT TRANSFORMER FOR CONSTRUCTION SAFETY ACCIDENT PREVENTION
Namgyu Jung, Saebom Lee and Chang Choi Chen

VULNHUNT-GPT: A SMART CONTRACT VULNERABILITIES DETECTOR BASED ON OPENAI CHATGPT
Biagio Boi, Christian Esposito and Sokjoon Lee

GPU MEMORY REALLOCATION TECHNIQUES IN FULLY HOMOMORPHIC ENCRYPTION WORKLOADS
Jake Choi, Sunchul Jung and Heonyoung Yeom
WED 11:30 – 13:00
Room: Mirador
(WCN) Selected Areas of Wireless Communications and Networking Track
Session Chairs: Dongkyun Kim and Wei Wang

DYNAMIC BACKHAUL CLUSTERING FOR ENHANCED SCALABILITY IN CELL-FREE MASSIVE MIMO NETWORKS
Mahnoor Ajmal, Ayesha Siddiqa, Muhammad Ashar Tariq, Malik Muhammad Saad and Dongkyun Kim

EFFICIENT TIME SLOT RECOVERY PROTOCOL FOR WIRELESS NETWORKS
Hicham Lakhlef, Khaled Abid, Ghada Jaber and Fabio D’andreagiovanni

EXPLORING ARCHITECTURAL STRATEGIES FOR MOBILITY EXPERIMENTATION: A SIMULATION-BASED STUDY
Victoria Botelho Martins, Douglas Macedo and Laercio Pioli Junior

OPTIMIZATION BASED ON DISTRIBUTED INTELLIGENT NETWORK SOFTWAREIZATION FOR THE INTERNET OF THINGS
Mohamed Ali Zormati, Hicham Lakhlef and Sofiane Ouni

AN ADAPTIVE TRANSMISSION STRATEGY FOR TILED 360-DEGREE VR VIDEOS IN NOMA SYSTEMS
Hsueh-Wen Tseng, Ting-Ting Yang and Yi Yang

WED 11:30 – 13:00
Room: Press Room
(KRR) Knowledge Representation and Reasoning Track
Session Chair: Eric Monfroy

COLLECTIVE ATTACKS IN ASSUMPTION-BASED ARGUMENTATION
Ofer Arieli and Jesse Heyninck

THE ABSTRACT EXPRESSIVE POWER OF FIRST-ORDER AND DESCRIPTION LOGICS WITH CONCRETE DOMAINS
Franz Baader and Filippo De Bortoli

EQUIPPING ABSTRACT ARGUMENTATION SOLVERS FOR VERIFYING NEGATIVE RESULTS
Wolfgang Dvorak, Alexander Greßler and Stefan Woltran

TOWARDS VALUE-AWARENESS IN ADMINISTRATIVE PROCESSES: AN APPROACH BASED ON CONSTRAINT ANSWER SET PROGRAMMING
Joaquin Arias, Mar Moreno-Rebato, José Antonio Rodriguez-Garcia and Sascha Ossowski

A MATHEMATICAL CONCEPTUALIZATION OF BUNDLE SETS IN DEFEASIBLE LOGIC PROGRAMMING
Yamil Soto, Cristhian Ariel D. Deagustini, Maria Vanina Martinez and Gerardo Simari

WED 13:00 – 14:30
Lunch Break
(Congress Hall)

WED 14:30 – 16:00
Room: 1
(MLA-1) Machine Learning and its Applications Track
Session Chairs: Keon Myung Lee and Jee-Hyong Lee

IDENTIFYING CHINESE HANDWRITING CHARACTERISTICS FOR DETECTING CHILDREN WITH AUTISM
Ling Kai Yen, Jasin Wong and Arbee Chen

NAVIGATING WEBAI: TRAINING AGENTS TO COMPLETE WEB TASKS WITH LARGE LANGUAGE MODELS AND REINFORCEMENT LEARNING
Lucas-Andréï Thil, Mirela Popa and Gerasimos Spanakis

LEVERAGING SENTINEL-2 TIME SERIES FOR BARK BEETLE-INDUCED FOREST DIEBACK INVENTORY
Giuseppina Andresini, Annalisa Appice and Donato Malerba

RAAD: REINFORCED ADVERSARIAL ANOMALY DETECTOR
Simon Woo, Daeyoung Yoon, Yuseung Gim and Eunseok Park

EXPLORING THE EFFICIENT MARKET HYPOTHESIS FOR ACCURATE STOCK MOVEMENT PREDICTION VIA FEATURE-AXIS TRANSFORMER
COMMON LESS TRANSFORMATION PATTERNS
Alena Buchalcevova and Jakub Hermanek

BEYOND TECHNICAL DEBT UNRAVELLING ORGANISATIONAL DEBT CONCEPT
Muhammad Ovais Ahmad and Osama Al-Baik

CHALLENGES TO SUSTAINING AGILITY: AN EXPLORATORY CASE STUDY
Mali Senapathi and Diane E Strode

NAVIGATING CULTURAL DIVERSITY: BARRIERS AND BENEFITS IN MULTICULTURAL AGILE SOFTWARE DEVELOPMENT TEAMS
Daniel Welsch, Luisa Burk, David Mötefindt and Michael Neumann

DEEPFAKE SPEECH DETECTION: A SPECTROGRAM ANALYSIS
Anton Firc, Kamil Malinka and Petr Hanáček

DETECTION OF SLOWLORIS ATTACKS USING MACHINE LEARNING ALGORITHMS
Vinicius De Miranda Rios, Pedro Inácio, Damien Magoni and Mario Freire

EVADING BOTNET DETECTION
Lisa-Marie Geiginger and Tanja Zseby

OASIS: AN ORGANIZATIONAL CERTIFICATELESS AGGREGATE SIGNATURE SCHEME IN DISTRIBUTED NETWORKS FOR IOT
Clementine Gritti

WED 14:30 – 16:00
Room: 2
(LASD-1) Lean and Agile Software Development
Session Chair: Adam Przybyłek

IOT QUERY LATENCY ENHANCEMENT BY RESOURCE-AWARE TASK PLACEMENT IN THE FOG
Fatima Abdullah, Mian Muaz Razaq, Youyang Kim, Limei Peng, Young-kyoon Suh and Byungchul Tak

DCS-ORIENTED IOT ARCHITECTURE FOR ENHANCED CATTLE FEED PRECISION
Guilherme Defalque, Ricardo R. Santos, Pedro A. P. C. Castro, Marcio C. B. Pache and Ricardo Aguiar

ETHEREUM ATTESTATION SERVICE AS A SOLUTION FOR THE REVOCATION OF HARDWARE-BASED PASSWORD-LESS MECHANISMS
Biagio Boi, Christian Esposito and Jung Taek Seo

QUAD-BIOMETRICS FOR FEW-SHOT USER IDENTIFICATION
Christian Esposito, Chang Choi and JunHo Yoon

WED 14:30 – 16:00
Room: 3
(SEC-1) Computer Security Track
Session Chair: Diego Sempreboni

A DECLARATIVE QUERY LANGUAGE ENABLED AUTONOMOUS DEEP WEB SEARCH ENGINE
Kallol Naha and Hasan Jamil

CROSS-LINGUAL LEARNING STRATEGIES FOR IMPROVING PRODUCT MATCHING QUALITY
Andre Alves, Cláudio de Souza Baptista, Luciano Barbosa and Clécio B.M. Araújo

MIGUE-SIM: SPEEDING UP SIMILARITY QUERIES WITH NATIVE RDBMS RESOURCES
Igor Eleuterio, Mirela Cazzolato, Larissa Roberta Teixeira, Marco Antonio Gutierrez, Agma Juci Machado Traina and Caetano Traina Jr.

REGRET MINIMIZATION IN BILLBOARD ADVERTISEMENT UNDER ZONAL INFLUENCE CONSTRAINT
Dildar Ali, Suman Banerjee and Yamuna Prasad
DIAPPROX: DIFFERENTIAL PRIVACY-BASED ONLINE RANGE QUERIES APPROXIMATION FOR MULTIDIMENSIONAL DATA
Ala eddine Laouir and Abdesammad Imine

**Wed 15:00 – 17:00**
PM Poster Session
Posters of the following Tracks: CC, CPS, DADS, DAPP, DBDM, DS, HIBIO, IE, INTOP, KNLP, KRR, LASD, NET, PL, RE, SATTA, SE, SP, ST, SVT
*(See page 25 for detailed list of Posters)*

**Wed 16:00 – 16:30**
Coffee Break

**Wed 16:30 – 17:30**
Room: 2
(LASD-2) Lean and Agile Software Development
Session Chair: Michael Neumann
TECHNICAL DEBT MANAGEMENT IN AGILE CONTEXT: A NEW FRAMEWORK AND CASE STUDY IN A LARGE FINANCIAL INSTITUTION
Gisela Archela, Ana C V Melo and Vagner Luiz Gava
REVISITING TECHNICAL DEBT TYPES AND INDICATORS FOR SOFTWARE SYSTEMS
Dilek Caglayan and Ozden Ozcan-Top
THE USE OF PROTOTYPES AS A TOOL IN AGILE SOFTWARE DEVELOPMENT
Vivian Larrea, Milene Selbach Silveira and Tiago da Silva

**Wed 15:00 – 17:00**
Room: 1
(MLA-2) Machine Learning and its Applications Track
Session Chairs: Keon Myung Lee and Jee-Hyong Lee
A HETEROGENEOUS ENSEMBLE METHOD FOR HANDLING CLASS NOISE IN SUPERVISED MACHINE LEARNING
Rashida Hasan and Chee-Hung Chu
OPTIMIZING MOVIE SELECTIONS: A MULTI-TASK, MULTI-MODAL FRAMEWORK WITH STRATEGIES FOR MISSING MODALITY CHALLENGES
Subham RAJ, Pawan Agrawal, Sriparna Saha, Brijraj Singh and Niranjan Pedankar
ACTION ATTENTION GRU: A DATA-DRIVEN APPROACH FOR ENHANCING PURCHASE PREDICTIONS IN DIGITAL MARKETING
Girim Ban, Simon Woo and David Sung

**Wed 16:30 – 17:30**
Room: 3
(SEC-2) Computer Security Track
Session Chair: Diego Sempreboni
IS THE CANARY DEAD? ON THE EFFECTIVENESS OF STACK CANARIES ON MICROCONTROLLER SYSTEMS
Xi Tan, Sagar Mohan, MD Armanuzzaman, Zheyuan Ma, Gaoxiang Liu, Alex Eastman, Hongxin Hu and Ziming Zhao
OBFUSCATED PHP WEBSHELL DETECTION USING THE WEBSHELL TAILORED TEXTRANK ALGORITHM
Hye Ju Lee, Seon jin Hwang, Millati Pratiwi and Yoon-Ho Choi
GENESIS: A GENERALIZABLE, EFFICIENT, AND SECURE INTRA-KERNEL PRIVILEGE SEPARATION
Seongman Lee, Seoye Kim, Chihyun Song, Byeongsu Woo, Eunyeong Ahn, Junsu Lee, Yeongjin Jang, Jinsoo Jang, Hojoon Lee and Brent ByungHo Kang
RUL PREDICTION OF LITHIUM-ION BATTERIES USING A FEDERATED AND HOMOMORPHICALLY ENCRYPTED LEARNING METHOD
Víctor López, Oscar Fontenla-Romero, Elena Hernández-Pereira, Berta Guijarro-Berdiñas, Carlos Blanco-Seijo and Samuel Fernández-Paz

COST-BASED LOAD BALANCING OF RDF REASONING IN FOG-COMPUTING ENVIRONMENTS
Yuma Kokubo and Toshiyuki Amagasa

JUST CHANGE ON CHANGE: ADAPTIVE SPLITTING TIME FOR DECISION TREES IN DATA STREAM CLASSIFICATION
Daniel Assis, Fabrício Enembreck and Jean Paul Barddal

DETECTING AND EXPLAINING ANOMALIES IN THE AIR PRODUCTION UNIT OF A TRAIN
Narjes Davari, Bruno Veloso, Rita Paula Ribeiro and João Manuel Portela da Gama

GUARDML: EFFICIENT PRIVACY-PRESERVING MACHINE LEARNING SERVICES THROUGH HYBRID HOMOMORPHIC ENCRYPTION
Eugene Frimpong, Khoa Nguyen, Mindaugas Budzys, Tanveer Khan and Antonis Michalas Noh

Thursday April 11, 2024

Thu 10:00-11:00
Room: Chamber Hall (0 floor)
Keynote Address
Dr. Paulo Novais
See page 16 for details.

Thu 11:00 – 11:30
Coffee Break

Thu 11:30 – 13:00
Room: 1
(MLA-3) Machine Learning and its Applications Track
Session Chairs: Keon Myung Lee and Jee-Hyong Lee

DTC-TRANGRU: IMPROVING THE PERFORMANCE OF THE NEXT-DTC PREDICTION MODEL WITH TRANSFORMER AND GRU
Abdul Basit Hafeez, Eduardo Alonso and Atif Riaz

CADE: CONTEXTUAL ANOMALY DETECTION USING AN ISOLATION FOREST
Véronne Yepmo, Grégory Smits, Marie-Jeanne Lesot and Olivier Pivert

CROSS-DOMAIN CORAL IMAGE CLASSIFICATION USING DUAL-STREAM HIERARCHICAL NEURAL NETWORKS
Hongyong Han, Wei Wang, Gaowei Zhang, Mingjie Li and Yi Wang

Final Program Page 12 SAC 2024, April 8 – 12
SECURITY IMPLICATIONS OF DEEPFAKES IN FACE AUTHENTICATION
Milan Šalko, Anton Firc and Kamil Malinka

FINDING HARMONY IN THE NOISE: BLENDING SECURITY ALERTS FOR ATTACK DETECTION
Tom-Martijn Roelofs, Eduardo Barbaro, Svetlana Pekarskikh, Katarzyna Orzechowska, Marta Kwapien, Jakub Tyrlik, Dinu Smadu, Michel van Eeten and Yury Zhauniarovich

PATCH PILGRIMAGE: EXPLORING THE LANDSCAPE OF TCP REFLECTIVE ATTACKS AND USER PATCHING EXPEDITION
Joost Oortwijn and Carlos Ganan

ENERGY EFFICIENT OBFUSCATION OF SIDE-CHANNEL LEAKAGE FOR PREVENTING SIDE-CHANNEL ATTACKS
Shan Jin, Minghua Xu and Yiwei Cai

VERIFICATION OF CONCURRENT MACHINE CODE RUNNING ON A SINGLE-CORE MACHINE
Narges Khakpour

(NEAREST) NEIGHBORS YOU CAN RELY ON: FORMALLY VERIFIED K-D TREE CONSTRUCTION AND SEARCH IN COQ
Nadeem Hamid

RESOURCE CONSTRAINED TEST CASE PRIORITIZATION WITH SIMULATED ANNEALING IN AN INDUSTRIAL CONTEXT
Eric Felding, Per Strandberg, Nils-Hassan Quttineh and Wasif Afzal

QUANTIFYING SOFTWARE CORRECTNESS BY COMBINING ARCHITECTURE MODELING AND FORMAL PROGRAM ANALYSIS
Florian Lanzinger, Christian Martin, Frederik Reiche,

THU 11:30 – 13:00
Room: 2
(SEC-3) Computer Security Track
Session Chair: Diego Sempreboni

Samuel Teuber, Robert Heinrich and Alexander Weigl
A FORMAL FRAMEWORK OF MODEL AND LOGICAL EMBEDDINGS FOR VERIFICATION OF STOCHASTIC SYSTEMS
Susmoy Das and Arpit Sharma

CONCURRENT NETKAT WITH PORTS
Hui Feng and Marcello Bonsangue

THU 11:30 – 13:00
Room: 3
(SVT) Software Verification and Testing
Session Chairs: Sangharatna Godbole and Anders Schlichtkrull

THU 13:00 – 14:30
Lunch Break
(Conference venue)

THU 14:30 – 16:00
Room: 1
(MLA-4) Machine Learning and its Applications Track
Session Chairs: Keon Myung Lee and Jee-Hyong Lee

EFFICIENT DUAL ATTENTION TRANSFORMER FOR IMAGE SUPER-RESOLUTION
Soobin Park, Yuna Jeong and Yong Suk Choi

RESCUING QUIC FLOWS FROM COUNTERMEASURES AGAINST UDP FLOODING ATTACKS
Junseok Lee, Minhyeong Kim, Wonjun Song, Younghoon Kim and Dohyung Kim

CLASSIFICATION OF HOME NETWORK PROBLEMS WITH TRANSFORMERS
Jeremias Dötterl and Zahra Hemmati Fard

VIRTUAL LINK EMBEDDING IN COLLABORATIVE SLICED MULTI-ADMINISTRATIVE MULTI-DOMAIN NETWORKS
Stanislas Pedebearn, Slim Abdellatif, Pascal Berthou, Dariusz Nogalski and Dallal Belabed

Thu 13:00 – 14:30
Lunch Break
(Conference venue)
EXPLAINABLE ARTIFICIAL INTELLIGENCE (XAI) APPROACH FOR REINFORCEMENT LEARNING SYSTEMS
Joelma Peixoto and Akramul Azim

FAST BIPARTITE FORESTS FOR SEMI-SUPERVISED INTERACTION PREDICTION
Pedro Ilídio, André Alves and Ricardo Cerri

IMPROVING SOFT SKILL EXTRACTION VIA DATA AUGMENTATION AND EMBEDDING MANIPULATION
Muhammad Uzair Ul Haq, Paolo Frazzetto, Giovanni Da San Martino and Alessandro Sperduti

Thu 14:30 – 16:00
Room: 2
(SE-1) Software Engineering Track
Session Chair: Geunseok Yang

COLLECTION AND ANALYSIS OF SENSITIVE DATA WITH PRIVACY PROTECTION BY A DISTRIBUTED RANDOMIZED RESPONSE PROTOCOL
Faisal Imran and Rosa Meo

STATE-BASED MODELING AND VERIFICATION OF SMART CONTRACTS
Chiara Braghin, Elvinia Riccobene and Simone Valentini

Thu 14:30 – 16:00
Room: 3
(SE-1) Software Engineering Track
Session Chair: Geunseok Yang

A PRIVACY-AWARE REMAPPING MECHANISM FOR LOCATION DATA
Guilherme Duarte, Mariana Cunha and Joao Vilela

FORGET ABOUT IT: BATCHED DATABASE SANITIZATION
James Wagner and Alexander Rasin

Thu 16:00 – 16:30
Coffee Break

SBOM GENERATION TOOLS UNDER MICROSCOPE: A FOCUS ON THE NPM ECOSYSTEM
Md Fazle Rabbi, Arifa Islam Champa, Costain Nachuma and Minhaz Fahim Zibran

RANKED SYNTAX COMPLETION WITH LR PARSING
Kwanghoon Choi, Sooyeon Hwang, Hyeonah Moon and Isao Sasano

Thu 16:30 – 18:00
Room: 1
(MLA-5) Machine Learning and its Applications Track
Session Chairs: Keon Myung Lee and Jee-Hyong Lee

TRAINING HETEROGENEOUS CLIENT MODELS USING KNOWLEDGE DISTILLATION IN SERVERLESS FEDERATED LEARNING
Mohak Chadha, Pulkit Khera, Jianfeng Gu, Osama Abboud and Michael Gerndt

REWARD SPECIFICATIONS IN COLLABORATIVE MULTI-AGENT LEARNING: A COMPARATIVE STUDY
Maram Hasan and Rajdeep Niyogi

Thu 16:30 – 18:00
Room: 2
(SEC-4) Computer Security Track
Session Chair: Diego Sempreboni

EXPLAINABLE PONZI SCHEMES DETECTION ON ETHEREUM
Letterio Galletta and Fabio Pinelli

AR-SPIDER: TEXT-TO-SQL IN ARABIC
Saleh Almohaimeed, Saad Almohaimeed, Mansour Al Ghanim and Liqiang Wang
COMPILING HASKELL FOR ENERGY EFFICIENCY: EMPIRICAL ANALYSIS OF INDIVIDUAL TRANSFORMATIONS
Bernardo Santos, João Paulo Fernandes, Maja Kirkeby and Alberto Pardo

LIGHTWEIGHT COMPILATION OF METHOD INVOCATION BYTECODES IN JAVA
Harpreet Kaur, Scott Ryan Young, Marius Pirvu and Kenneth Blair Kent

LIGHTWEIGHT DSL FOR DESCRIBING EXTENSIBLE TRANSITION SYSTEMS
Seiji Umatani

AN ASYNCHRONOUS SCHEME FOR ROLLBACK RECOVERY IN MESSAGE-PASSING CONCURRENT PROGRAMMING LANGUAGES
German Vidal

INFORMATION NEEDS IN CONTINUOUS INTEGRATION AND DELIVERY IN LARGE SCALE ORGANIZATIONS: AN OBSERVATIONAL STUDY
Azeem Ahmad, Kristian Sandahl, Daniel Hasselqvist and Pontus Sandberg

A LARGE-SCALE STUDY OF ML-RELATED PYTHON PROJECTS
Samuel Idowu, Yorick Sens, Thorsten Berger, Jacob Krueger and Michael Vierhauser

FROM FINE-TUNING TO OUTPUT: AN EMPIRICAL INVESTIGATION OF TEST SMELLS IN TRANSFORMER-BASED TEST CODE GENERATION
Ahmed Aljohani and Hyunsook Do

METHODOLOGY FOR RESILIENCY ANALYSIS OF MISSION-CRITICAL SYSTEMS
Mahmoud Abdelgawad and Indrakshi Ray
**POSTERS LISTING**

**WED 11:00 - 13:00**

**AM Poster Session**
(Panorama)

(AIED) EQUITY CHALLENGES IN ONLINE LEARNING IN THE AGE OF CHATGPT
Hasan Jamil

(AIED) UTILIZING EXPLAINABLE AI TO ENHANCE REAL-TIME STUDENT PERFORMANCE PREDICTION IN EDUCATIONAL SERIOUS GAMES
Manuel J. Gomez, Álvaro Armada Sánchez, Mariano Albolaedo-González, Félix J. García Clemente and José A. Ruízpérez-Valiente

(AIED) OPEN PLAYER MODELING - USING AI TO HELP REFLECTION AND LEARNING IN SERIOUS GAMES
Sai Siddartha Maram, Jennifer Villareale, Jichen Zhu and Magy Seif El-Nasr

(AIED) AN INSTRUCTOR'S LENS INTO THE ROLE OF AI IN TEACHING EXPERIMENTAL RESEARCH VIA GAMIFICATION
Sai Siddartha Maram, Anna Amato, Giovanni M Troiano, Steven C Sutherland, Camilla Matuk, Edward Melcer, Elin Carstensdottir, Casper Hartevedl and Magy Seif El-Nasr

(AIED) AUTHORING WORKED EXAMPLES FOR JAVA PROGRAMMING WITH HUMAN AI COLLABORATION
Mohammad Hassany, Jiaze Ke, Peter Brusilovsky, Arun Balajiee Lekshmi Narayanan and Kamil Akhuseyinoglu

(AIED) AUTHORING WORKED EXAMPLES FOR JAVA PROGRAMMING WITH HUMAN AI COLLABORATION
Mohammad Hassany, Jiaze Ke, Peter Brusilovsky, Arun Balajiee Lekshmi Narayanan and Kamil Akhuseyinoglu

(AIED) AN INTEGER LINEAR PROGRAMMING MODEL BASED ON COMPETENCES FOR STUDENT-INDUSTRY PLACEMENT ALLOCATION
Moumena Salah Yassen, Victor Sanchez-Anguix, Juan M. Alberola and Fulgencia Villa

(AIED) DUTY VS. CONSEQUENCE: EXPLORING TEACHERS' ASSESSMENT OF THE ETHICAL DIMENSIONS OF GENERATIVE AI TECHNOLOGIES
Stephen Aguilar and Changzhao Wang

(EC) EVOLUTIONARY FEATURE SELECTION FOR TIME-SERIES FORECASTING
María Lourdes Linares-Barrera, Manuel J. Jiménez-Navarro, Isabel Sofia Brito, José C. Riquelme-Santos and María Martinez-Ballesteros

(EMBS) PROFILING VS STATIC ANALYSIS: THE IMPACT ON PRECISION TUNING
Lev Denisov, Gabriele Magnani, Daniele Cattaneo, Giovanni Agosta and Stefano Cherubin

(EMBS) PACKET-TYPE AWARE SCHEDULING OF MOLDABLE STREAMING TASKS ON MULTICORE SYSTEMS WITH DVFS
Michail Boulaakis, Christoph Kessler, Flavius Gruian, Jörg W Keller and Sebastian Litzinger

(EMBS) INCREASING TESTING ROBUSTNESS OF GPU SOFTWARE IN EMBEDDED CRITICAL SYSTEMS
Javier Barrera, Leonidas Kosmidis, Enrico Mezzetti, Jaume Abella and Francisco J Cazorla

(GMLR) LEARNING TO SOLVE COMBINATORIAL OPTIMIZATION PROBLEMS ON GRAPHS WITH STATE-AWARE MULTI-RELATION AGGREGATION
Hui-Ju Hung, Wang-Chien Lee, Tao-Yang Fu, Chih-Ya Shen and Zhen Lei

(GMLR) LESS IS MORE: A STREAMLINED GRAPH-BASED FASHION OUTFIT RECOMMENDATION WITHOUT MULTIMODAL DEPENDENCY
Daeehee Kim, donghee han, Daeyoung Roh, Keejun Han and Mun Yong Yi

(IRMAS) BAYESIAN SOFT ACTOR-CRITIC: A DIRECTED ACYCLIC STRATEGY GRAPH BASED DEEP REINFORCEMENT LEARNING
Qin Yang and Ramviyas Parasuraman

(ISDE) POTHOLEVISION: AN AUTOMATED POTHOLE DETECTION AND REPORTING SYSTEM USING COMPUTER VISION
Zachary Jeffreys, Kshama Kumar, Zhuoqing Xie, Wan Bae, Shyama Alkobaisi and Sada Narayanappa
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<td>Mustapha Kamal BENRAMDANE, Elena Komyshova, Sébastien Ruelle and Charles Vidal</td>
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<td>(MLA) A MODEL FOR DETECTING ABNORMALITY IN ACTIVITIES OF DAILY LIVING SEQUENCES USING INVERSE REINFORCEMENT LEARNING</td>
<td>Fateme Akbari and Kamran Sartipi</td>
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<td>(MLA) M-DBSCAN: MODIFIED DBSCAN CLUSTERING ALGORITHM FOR DETECTING AND CONTROLLING OUTLIERS</td>
<td>Momotaz Begum, Mehedi Hasan Shuvo, Md. Golam Mostofa, ABM Kamrul Islam Riad, Md Arabin Islam Talukder, Mst Shapna Akter and Hossain Shahriar</td>
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<td>(MLA) DECOUPLING DECISION-MAKING IN FRAUD PREVENTION THROUGH CLASSIFIER CALIBRATION FOR BUSINESS LOGIC ACTION</td>
<td>Emanuele Luzio, Moacir Ponti, Christian Ramirez Arevalo and Luis Argerich</td>
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<td>(MLA) ENHANCING VIDEO CAPTURE IN MOBILE APPLICATIONS FOR POWER SAVING THROUGH MACHINE LEARNING</td>
<td>Tzu-Heng Chen, Sheng-Da Tsai and Chun-Han Lin</td>
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<td>(MLA) ELEVATING CTR PREDICTION: FIELD INTERACTION, GLOBAL CONTEXT INTEGRATION, AND HIGH-ORDER REPRESENTATIONS</td>
<td>Sojeong Kim, Dongjun Lee and Jaekwang Kim</td>
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<td>(MLA) DROPACTER : COMPACTER-BASED TUNING WITH LAYER FREEZING IN PRE-TRAINED LANGUAGE MODEL</td>
<td>Saurabh Anand, Shubham Malaviya, Manish Shukla and Sachin Lodha</td>
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<td>(MLA) REBALANCING SHARED MOBILITY SYSTEMS BY USER INCENTIVE SCHEMES: STATE-ACTION REPRESENTATION DESIGN AND ANALYSIS</td>
<td>Matthew Schofield, Ning Wang and Shen-Shyang Ho</td>
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<td>(MLA) OPEN- VOCABULARY AND MULTITASK IMAGE SEGMENTATION</td>
<td>Lihu Pan, Yunting Yang, Zhengkui Wang, Wen Shan and Jiali Yin</td>
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<td>(MLA) AN EFFECTIVE AND EFFICIENT GREEN FEDERATED LEARNING METHOD FOR ONE-LAYER NEURAL NETWORKS</td>
<td>Oscar Fontenla-Romero, Berta Guijarro-Berdiñas, Elena Hernández-Pereira and Beatriz Pérez-Sánchez</td>
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<td>(MLA) EVALUATING KNOWLEDGE RETENTION IN CONTINUOUS LEARNING</td>
<td>Andrii Krutsylo</td>
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<td>(MLA) MULTIMODAL FUSION OF HETEROGENEOUS REPRESENTATIONS FOR ANOMALY CLASSIFICATION IN SATELLITE IMAGERY</td>
<td>Youngsun Jang, Maryam Moshrefizadeh, Abir Mohammad Hadi, Kwanghee Won and John Kim</td>
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<td>(MLA) TOWARDS AIRCRAFT TRAJECTORY PREDICTION USING LSTM NETWORKS</td>
<td>Jorge Silvestre, Paula Mielgo, Miguel A. Martinez-Prieto, Anibal Bregon and Pedro C. Alvarez-Esteban</td>
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<td>(MLA) CONTROLLING THE LATENT SPACE OF GANS THROUGH REINFORCEMENT LEARNING: A CASE STUDY ON TASK-BASED IMAGE-TO-IMAGE TRANSLATION</td>
<td>Mahyar Abbasian, Taha Rajabzadeh, Ahmadreza Moradipari, Seyed Amir Hossein Aqajari, Hongsheng Lu and Amir M. Rahmani</td>
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<td>(MLA) THE PERFORMANCE OF SEQUENTIAL DEEP LEARNING MODELS IN DETECTING PHISHING WEBSITES USING CONTEXTUAL FEATURES OF URLs</td>
<td>Saroj Gopali, Akbar S. Namin, Faranak Abri and Keith S. Jones</td>
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<td>(MLA) IDENTIFYING OUT-OF-STOCK ITEMS AT RETAIL STORES USING COMPUTER VISION</td>
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**WED 15:00 - 17:00**

**PM Poster Session**

**Panorama**

**(CC) SADHE: SECURE ANOMALY DETECTION FOR GPS TRAJECTORY BASED ON HOMOMORPHIC ENCRYPTION**

Priyanka Singh, Jash Rathi and Priyankaben Babulal Patel

**(CPS) CANLP: NLP-BASED INTRUSION DETECTION SYSTEM FOR CAN**

Kavya Balasubramanian, Adithya Gowda Baragur, Denis Donadel, Dinuka Sahabandu, Alessandro Brighente, Bhaskar Ramasubramanian, Mauro Conti and Radha Poovendran

**(CPS) OLIVE: FLEXIBLE, PORTABLE, AND SUSTAINABLE V2X MULTI-FACTOR AUTHENTICATION**

Marco De Vincenzi, Chiara Bodei and Ilaria Matteucci

**(CPS) AUTOENCODER-BASED CONTINUOUS OUTLIER CORRELATION DETECTION FOR REAL-TIME TRAFFIC FLOW PREDICTION**

Himanshu Choudhary and Marwan Hassani

**(DADS) ON THE RELIABILITY OF TIME-SENSITIVE NETWORK INFRASTRUCTURES**

Willi Brekenfelder, Tom Reincke, Helge Parzyjegla, Peter Daniels, Omer Hanif Khan and Gero Muehl

**(DAPP) USING BLOCKCHAIN FOR INCENTIVE-DRIVEN FHIR-BASED HEALTH RECORD EXCHANGE**

Moritz Rosar and Kun-Ta Chuang

**(DAPP) FORMALIZATION AND VERIFICATION OF DELEGATE CONTRACT SIGNING MECHANISM BASED ON SMART CONTRACT USING CSP**

BANGJIE ZHU, JIAQI YIN, Sini Chen and Huibiao Zhu

**(DBDM) EMBEDDB: A HIGH-PERFORMANCE DATABASE FOR RESOURCE-CONSTRAINED EMBEDDED SYSTEMS TOO SMALL FOR SQLITE**

Justin Schoenit, Seth Akins and Ramon Lawrence

**(DBDM) MODELLING AND EVOLUTION MANAGEMENT OF MULTI-MODEL DATA**

Jachym Bartik, Pavel Koupil and Irena Holubova

**(DS) WHERE DO WE GO FROM HERE? LOCATION PREDICTION FROM TIME-EVOLVING MARKOV MODELS**

Thiago Andrade and João Gama

**(DS) DRIFTGAN: USING HISTORICAL DATA FOR UNSUPERVISED RECURRING DRIFT DETECTION**

Christofer Fellicious, Sahib Julka, Lorenz Wendlinger and Michael Granitzer

**(HIBIO) ANALYSIS OF VOICE RECORDINGS FEATURES FOR CLASSIFICATION OF PARKINSON’S DISEASE**

Beatriz Pérez-Sánchez, Noelia Sánchez-Maroño and Miguel A. Díaz-Freire

**(HIBIO) FEDERATED LEARNING FOR UNSUPERVISED ANOMALY DETECTION OF ADLS IN SINGLE-RESIDENT ELDERLY SMART HOMES**

Zahraa Shahid, Saguna Saguna, Christer Åhlund and Karan Mitra

**(IE) IMPROVING PRIVACY IN FEDERATED LEARNING-BASED INTRUSION DETECTION FOR IOT NETWORKS**

Lamine Syne, Pino Caballero-Gil and Candelaria Hernández-Goya

**(INTOP) CROSS-CHAIN PAYMENTS ON BLOCKCHAIN NETWORKS: AN APARTMENT BOOKING USE-CASE**

Dušan Morháč, Viktor Valaštin, Kristian Kostal and Ivan Kotuliak

**(KNLP) IMPACT OF POSITION BIAS ON LANGUAGE MODELS IN TOKEN CLASSIFICATION**

Mehdi Ben Amor, Michael Granitzer and Jelena Mitrović

**(KRR) CLASSIFYING WORDS WITH 3-SORT AUTOMATA**

Djordje Markovic, Simon Vandeveldt, Linde Vanbesien, Joost Vennekens and Marc Denecker

**(LASD) UMASK-AFL: UNMASKING ALL REACHABLE TARGETS FOR COMPREHENSIVE AGILE FUZZING**

SANGHARATNA GODBOLEY, Bikash Singha, Monika Rani Golla and P. R Krishna

**(LASD) IMPLEMENTING ACTION ITEMS OVER IMPROVING THE FORMAT OF RETROS**

Yen Ying Ng and Ryszard Kuduk
(NET) GENERATING APPROXIMATE STEINER TREE FROM A FULLY DYNAMIC APPROXIMATE MST OF A PLANAR GRAPH
Hemraj Raikwar, Miki Maheshbhai Patel and Sushanta Karmakar

(NET) MICRO-CHAIN: TOWARDS THE USE OF NDN MICROSERVICES
Otavio Augusto da Cruz, Carlos Eduardo Pereira, Edison Pignatton de Freitas, Antonio Arlis Santos da Silva, Denis Lima Do Rosário, Eduardo Coelho Cerqueira, Paulo Mendes and Julio Cesar Santos dos Anjos

(PL) A DOMAIN-SPECIFIC LANGUAGE FOR AUGMENTED REALITY GAMES
Michel Bourdelles, Jamal EL HACHEM and Salah Sadou

(RE) HYBRID ACTIVE TEACHING METHODOLOGY FOR LEARNING DEVELOPMENT - A SELF-ASSESSMENT CASE STUDY REPORT IN COMPUTER ENGINEERING
Renan Lima Baima, Tiago Miguel Barão Caetano, Ana Carolina Oliveira Lima, Emilia Leal, Tiago Candeias and Silvia Pedro Reboçuas

(SATTA) FINE-GRAINED AUTHORIZATION IN MICROSERVICE ARCHITECTURE: A DECENTRALIZED APPROACH
Niklas Sänger and Sebastian Abeck

(SE) A PRACTICAL TOOL FOR DETECTING CROSS-LANGUAGE CODE PAIRS WITH SIMILAR CONTROL STRUCTURES
Feng DAI and Shigeru Chiba

(SE) TOWARDS THE INTEGRATION SUPPORT FOR MACHINE LEARNING OF INTER-MODEL RELATIONS IN MODEL VIEWS
James Pontes Miranda, Hugo Bruneliere, Massimo Tisi and Gerson Sunye

(SE) SUPPORTING SECURE CODING FOR ERLANG
Melinda Toth and Istvan Bozo

(SP-OP) SECURE CROWDSOURCE-BASED OPEN-SOURCE CODE VERIFICATION (SC)^2V
Mor Nahum, Edita Grolman, Inbar Maimon, Dudu Mimran, Oleg Brodt, Aviad Elyashar, Yuval Elovici and Asaf Shabtai

(SP-OP) SCALABLE AND AUTOMATED EVALUATION OF BLUE TEAM CYBER POSTURE IN CYBER RANGES
Federica Bianchi, Enrico Bassetti and Angelo Spognardi

(SP-OP) EFFICIENT SNN MODEL GENERATION FOR NEUROMORPHIC HARDWARE
Seoyeon Kim, Jinsung Cho, Bongjae Kim and Jinman Jung

(SP-OP) AUDIO CAPTURE DEVICES FOR MOBILE PLATFORMS USING SBC
Chanwoo Lee, SeongJin Kim, Kang Choi, Seongbin Cho, Junghyeon Yun and Junyoung Heo

(ST) A TWO-STAGE CALIBRATION APPROACH FOR MITIGATING BIAS AND FAIRNESS IN RECOMMENDER SYSTEMS
Rodrigo Souza and Marcelo Manzato

(ST) DESIGNING METADATA FOR THE USE OF ARTIFICIAL INTELLIGENCE IN ACADEMIA
Javier Conde, Gonzalo Martinez, Pedro Reviriego, Joaquín Salvachúa and José Alberto Hernández

(ST) A NEWS ARTICLE TAG CATEGORIZATION ONTOLOGY
Lisa Ehrlinger, Harald Holzner, Nora Hemelmayr and Wolfram Wöß

(ST) KGSAW: ONE SIZE DOES NOT FIT ALL-PLANNING METHODS FOR DATA FRAGMENTATION FOR EFFICIENTLY CREATING KNOWLEDGE GRAPHS
Enrique Iglesias and Maria-Esther Vidal

(SVT) ISABELLE-VERIFIED CORRECTNESS OF DATALOG PROGRAMS FOR PROGRAM ANALYSIS
Anders Schlichtkrull, René Rydhof Hansen and Flemming Nielson
Student Research Competition Program

(AIED) INVESTIGATING AI MODEL LIMITATIONS IN RECOGNIZING FACES AND BODIES IN SUPPORT OF INTELLIGENT BALLROOM DANCE EDUCATION
Lewen Ivy Huang

(EMBS) REAL-TIME 3D REGISTRATION AND FUSION WITH SRAM-BASED ANALOG IN-MEMORY COMPUTING
Xin-You Liu

(IRMAS) COORDINATION OF MARINE MULTI-ROBOT SYSTEMS WITH COMMUNICATION CONSTRAINTS
Antoni Martorell-Torres, José Guerrero-Sastre and Gabriel Oliver-Codina

(ISDE) DETECTION OF WAR-CAUSED AGRICULTURAL FIELD DAMAGES USING SENTINEL-2 SATELLITE DATA WITH MACHINE LEARNING AND ANOMALY DETECTION
Sofiia Drozd

(SSRAI) ENHANCING SAFETY IN CYBER-PHYSICAL SYSTEMS THROUGH RUNTIME ENFORCEMENT
Ignacio D. Lopez-Miguel

(ST) MARS RANK: SPECIFICITY OF SEARCH RESULTS
Mahdi Cherif

(WE) LEAST PRIVILEGE PERSISTENT-STORAGE ACCESS IN WEB BROWSERS
Gayatri Priyadarsini Kancherla

SAC 2025 INVITATION

Please check the registration desk for handouts and a poster or visit the SAC 2025 website at https://www.sigapp.org/sac/sac2025/

End of Program