

The logo for KES International, featuring a stylized 'KES' in blue and white, followed by the word 'International' in a dark red serif font.

# KES International

## Conference Programme

# KES2025

**29th International Conference on  
Knowledge-Based and Intelligent  
Information & Engineering Systems**

10 - 12 September 2025

Osaka, Japan &  
KES Virtual Conference Centre



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## Chairs' Welcome

Welcome to the 29th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2025), organised by KES International during 10-12 September 2025 in Osaka, Japan.

KES 2025 is the 29th event in a series of broad-spectrum intelligent systems conferences first held in Adelaide, Australia in 1997. The main aim of this KES conference series is to provide an internationally respected forum for the dissemination of research results and the discussion of issues relating to the theory, technologies and applications of intelligent engineering and information systems.

The conference is being held at Ritsumeikan University - Osaka Ibaraki Campus (OIC) in Osaka, Japan. Osaka is a large port city and commercial center on the Japanese island of Honshu, known for its modern architecture, nightlife, and street food. Its main historical landmark is the 16th-century shogunate Osaka Castle, surrounded by a moat and park.

The conference proceedings are published in Elsevier's *Procedia Computer Science* open access journal, available in ScienceDirect and submitted to be indexed/abstracted in CPCi (ISI conferences and part of Web of Science), Engineering Index, and Scopus. The conference is ranked 'B in the CORE conference ranking system'.

Although the conference is primarily a live event with physical attendance in Osaka, delegates unable to take advantage of the opportunity to visit this wonderful location will be able to present virtually over the KES Virtual Conference Centre.

This truly international conference attracted submissions from a large number of researchers and practitioners from all over the world, who submitted their papers to four general track sessions and over 60 invited sessions. Each paper was peer-reviewed by at least two members of the International Program Committee. From them, 644 high-quality papers were accepted for oral presentation and publication in *Procedia Computer Science*, submitted for indexing in Conference Proceedings Citation Index (CPCI), Scopus and INSPEC.

The conference chairs would like to express their gratitude to the Keynote Speakers:

- **Prof. Rossi Setchi**, Cardiff University, UK, title of talk 'The role of neuro-symbolic AI in human-centred robotics'
- **Prof. Jacek Mańdziuk**, Warsaw University of Technology, Poland, title of talk to be notified
- **Prof. Hajime Nagahara**, Osaka University, Japan, title of talk 'Deep Sensing: Jointly optimizing imaging and processing'
- **Assoc. Prof. Ahmed Samet**, INSA Strasbourg, France, title of talk 'Knowledge Discovery and Intelligent Modeling in the Context of Industry X.0'
- **Assoc. Prof. Matteo Cristani**, University of Verona, Italy, title of talk 'Business Process Compliance: the quest for automation'

We would like to acknowledge the Programme Co-Chairs, the General Track chairs, and the International Programme Committee members and reviewers for their valuable efforts in the review process, helping us to guarantee the highest quality possible for the conference. We would also like to thank the organisers and chairs of the special sessions which make an essential contribution to the success of the conference. Lastly, we would like to thank all the authors, presenters and delegates for their valuable contribution to making this a very successful event.

KES International hopes and intends that KES2025 makes a significant contribution to international research collaboration and understanding, an essential task for the promotion of scientific joint work and excellence.

***Prof. Yen-Wei Chen, Ritsumeikan University, Japan***

***Prof. Robert J. Howlett, KES International Research & Cardiff Metropolitan University, Wales, UK***

***Prof. Lakhmi C. Jain, University of Piraeus, Athens, Greece***

***Associate Professor Sebastian A. Rios, University of Chile, Chile***

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KES2025 is part of the KES Conference Series.

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General Track Sessions

Code	Track Title	Track Chair
G01	Machine Learning, Artificial Neural Networks and Deep Learning	Assoc. Prof. Ahmed Samet
G02	Knowledge Based and Expert Systems	Prof. Anne Hakansson
G03	Intelligent Information and Engineering Systems	Assoc. Prof. Franco Giustozzi
G04	Industry Applications	Assoc. Prof. Claudio Tomazzoli

## Invited Sessions

Code	Session	Session Chair
<b>IS01</b>	Networks for Innovation, Knowledge Creation and Sharing	Assit. Prof, Arkadiusz Januszewski, Kinga Krupcała,
<b>IS02</b>	Aspects of intelligent learning systems: e-Learning across various educational contexts	Prof. Dr. Hiroshi Ueda, Associate Prof. Dr. Mohammad Nehal, Associate Prof. Dr. Hiroya Suno, Associate Prof. Mr. Hisashi Hatakeyama
<b>IS03</b>	RAG – Robust, Adaptive and Generative AI	Aya Saad, Prof. Anne Håkansson
<b>IS04</b>	Classification, forecasting and decision support	Prof. Rafal Deja
<b>IS05</b>	Knowledge and data engineering in medicine and health care	Associate Professor Paja Wieslaw, Assoc. Prof. Pancerz Krzysztof, Assoc.Prof Stoean Catalin, Assoc. Prof. Wosiak Agnieszka
<b>IS07</b>	Digitalization and Knowledge Management in Health Data Acquisition and Processing	Ralf Seepold, Juan Antonio Ortega, Natividad Martínez Madrid, Aaron Raymond See, Maksym Gaiduk, Wilhelm Daniel Scherz
<b>IS08</b>	The 2nd edition of Leveraging Digital Twins in Healthcare (LDTH) Invited Session	Dr. Laura Verde, Dr. Jan Vrba, Dr. Roberta De Fazio
<b>IS09</b>	Networks for Innovation, Knowledge Creation and Sharing	Prof. Hironori Takeuchi
<b>IS10</b>	Cyber Security and Big Data	Dr. Francesco Mercaldo
<b>IS11</b>	Multi-Criteria Decision-Analysis methods – theory and their applications	Prof. Wojciech Sałabun
<b>IS12</b>	Intelligent Systems in advancing sustainable solutions, management and strategies	Prof. Dr. inż. Adam Sulich, dr inż. Letycja Sołoducho-Pelc, mgr inż. Tomasz Zema
<b>IS13</b>	nterdisciplinary Approaches in Data Science Practice (IADSP 2025)	Prof. Ivan Luković, Prof. Ralf-Christian Härting
<b>IS14</b>	Interdisciplinary Approaches in Digital Transformation (IADT 2025)	Prof. Ralf-Christian Härting, Prof. Ivan Luković

Code	Session	Session Chair
<b>IS15</b>	Smart Generative AI and Data Visualization Technologies	Professor Dr. Cesar Sanin, Professor Dr. Edward Szczerbicki, Dr Rafiqul Islam
<b>IS16</b>	The 9th Special Session on Eye Movement Data Processing and Analysis	Prof. Katarzyna Harezlak, Prof. Pawel Kasprowski, Prof. Jacek Matulewski
<b>IS17</b>	AI, Robotics, and Digital Technologies for Medical/Healthcare Systems	Prof. Hiroharu Kawanaka, Dr. Yulia Hicks, Dr Mohamed Bennisar, Professor Rossi Setchi
<b>IS18</b>	Computational Systems and Synthetic Biology	Dr Eugen Czeizler, Dr Victor Mitrana, Dr Ion Petre
<b>IS19</b>	Models in Smart System Theory and Practice (MSTP)	Professor Natalia A. Serdyukova, Professor Lakhmi C. Jain
<b>IS20</b>	Computational Culture, Arts, and Interaction	Prof. Ryosuke Yamanishi, Prof. Mitsunori Matsushita, Prof. Satoshi Nakamura, Prof. Yoko Nishihara
<b>IS21</b>	Security Informatics, Predictive Policing Strategies in Law Enforcement	Prof. Fu-Ching Tsai, Prof. Chih-Hung Shih, Prof. Da-Yu Kao
<b>IS22</b>	Faculty Development for the Next Digital Era	Professor Kayoko Kurita, Professor. Takashi, Associate Professor Goichi Hagiwara
<b>IS23</b>	Smart Education: Learning environment using technology	Prof. Nobuyuki Ogawa, Prof. Hideyuki Kanematsu, Prof. Kuniaki Yajima, Prof. Dana Barry, Associate Professor. Katsuko T. Nakahira, Prof. Kazunori Nishino
<b>IS24</b>	Knowledge-based Data Analysis for Complex Data	Prof. Mika Sato-Ilic
<b>IS25</b>	Generative AI in the healthcare system: friend of foe?	Associate Prof Smaranda Belciug, Prof Lakhmi C. Jain
<b>IS26</b>	Intelligent Decision Support and Process Optimization Under Uncertainty	Dr Aleksandra Radomska-Zalas, Prof. Andrzej Perec, Prof. Paweł Ziemia, Prof. Jarosław Becker, Dr Łukasz Lemieszewski

Code	Session	Session Chair
<b>IS27</b>	Reasoning-based Intelligent Applied Systems	Dr Jair Minoro Abe, Dr Ari Aharari
<b>IS28</b>	Complex and dispersed classifiers (CDC 2025)	Prof. Małgorzata Przybyła-Kasperek, Dr Rafał Skinderowicz
<b>IS29</b>	Dynamic System Modeling and Simulation	Prof. Zeev Volkovich, Prof. Oleg Granichin, Dr. Renata Avros
<b>IS30</b>	Intelligent Methods in Maritime Engineering, Transport and Logistics	Prof. Andrzej Banaszek
<b>IS31</b>	The impact of artificial intelligence on business	Prof. Larisa IVASCU, Assoc.prof. Florin DRAGAN, Prof. Marius PISLARU
<b>IS32</b>	Knowledge-Based Systems for e-Business	Professor Kazuhiko Tsuda, Professor Masakazu Takahashi, Professor Nobuo Suzuki
<b>IS33</b>	Advances in Health Informatics	Daniela GIFU, Ireneusz CZARNOWSKI, Ahmed RAGAB, Liviu DINU
<b>IS34</b>	Detection of Complex Attacks	Prof. Pierre Parrend
<b>IS35</b>	Knowledge Engineering and Data Mining - theory and practice	Assoc Prof. Agnieszka Nowak-Brzezińska, Dr. Agnieszka Konys
<b>IS36</b>	Signal Processing and Edge AI Algorithms for Embedded Systems and Sensors	Chair: Prof. Paolo Crippa, Dr. Giorgio Biagetti
<b>IS37</b>	Healthcare systems using artificial intelligence, deep learning and vision transformers techniques	Prof. Yen-Wei Chen, Dr. Mihaela Luca, Dr. Liviu Andrei Scutelnicu, Dr. Vlad Constantin Crăciun
<b>IS38</b>	Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy	Dr Lukasz, Dr Aldona Podgórnjak-Krzykacz
<b>IS39</b>	Future-Ready: Harnessing Intelligent Systems for Smart Societies	Lenuța Alboaie, Adrian Iftene
<b>IS40</b>	Intelligent Data Analytics for Internet of Things Environments	Dr. Maha Driss, Prof. Wadli Boulila, Dr. Mounira Kezadri, Dr. Idriss Moumen

Code	Session	Session Chair
<b>IS41</b>	Computational learning theory and advances from Heuristics to Hyperheuristics: new trends and applications in hard optimization and constraint reasoning	Dr. Hajer Ben Othman, Dr. Moez Hammami, Pr. Sadok Bouamama
<b>IS43</b>	Information, Innovation and Technology as a basis for sustainable business and society	Prof. Katarzyna Szopik-Depczyńska, Prof. Katarzyna Cheba
<b>IS44</b>	Global and Constrained Optimization: Algorithms and Applications (6 th Edition)	Prof. Abdellah Chehri, Prof. Sara Séguin, Prof. Chaïbi Hasna, Prof. Imran Ahmed
<b>IS45</b>	Science of Tooling - Framing A Design Science for Digital Tools in the Urban Context	Prof. Dr.-Ing. Jörg Rainer Noennig
<b>IS46</b>	Knowledge-Based Engineering Systems with Physiological Insights for Social Innovation and Well-Being	Atsuko K. Yamazak, Hiroshi Hasegawa, Kayoko H. Murakami
<b>IS47</b>	Organisational networks based on knowledge, innovation and intelligent systems	Associate Professor Eng. Ph.D. Robert Kucęba, Ph.D. Dariusz Dudek, Ph.D. Grzegorz Chmielarz
<b>IS48</b>	Data Pre-processing Strategies and Machine Learning	Ireneusz Czarnowski, Antonio J. Tallón-Ballesteros
<b>IS49</b>	Specialized Decision Techniques for Data Mining, Transportation and Project Management	Prof. Ewa Ratajczak-Ropel, Prof. Ireneusz Czarnowski, Prof. Piotr Jędrzejowicz, Prof. Dariusz Barbuscha
<b>IS50</b>	Software Engineering and IT Intensive Systems	Prof. Dr. Sergey V. Zykov, Dr. Hadi M. Saleh
<b>IS51</b>	The 3rd International Symposium on Intelligent and Resilient Systems for Industry 5.0	Dr. Olfa Belkahla DRISS, Prof. Ouajdi KORBA, Dr. Housseem Eddine NOURI, Dr. Bilel MARZOUKI
<b>IS52</b>	Management of safety, security, production, and human factors for cyber-physical systems	Dr. HAMAGUCHI, Takashi, Dr. NODA, Masaru, Dr. TAKEDA, Kazuhiro, Dr. KIMURA Naoki
<b>IS54</b>	Harnessing AI in Knowledge and Intelligent Systems for Business Innovation	Prof. Celina Olszak, Prof. Pawel Kasprowski, Prof. Jan Kozak, Dr Barbara Probiez

Code	Session	Session Chair
<b>IS55</b>	Design of Nigiwai: Places Embracing Values	Prof. Akinori Abe, Prof. Yukio Ohsawa, Prof. Sae Kondo
<b>IS56</b>	Decision-making in companies and the economy. Navigating Risks and Opportunities	Associate Professor dr Małgorzata Porada-Rochon
<b>IS57</b>	Smart Sustainable Agriculture and Food Production	Prof. Robert J. Howlett
<b>IS58</b>	Information Disorder Challenges in the Era of AI-Generated Contents Manipulation: Security, Trustability and Faithfulness of Shared Knowledge	Prof. Fiammetta Marulli, Dr. Maria Stella De Biase, Prof. Lelio Campanile
<b>IS59</b>	New Generation Computing in Engineering, Life Science and Economy	Prof. Piotr Nikończuk, Prof. Norbert Chamier-Gliszczyński, Dr. Roma Strulak-Wójcikiewicz, Dr. Agnieszka Deja, PhD Cand. Norbert Lech
<b>IS60</b>	SOAP4EARTH: Smart Observation And Preservation for Earth	Stefano Marrone, Maria Stella De Biase, Gaetano Settembre
<b>IS61</b>	Sustainable Innovation for the Digital IT era	Prof. Yoshimasa Masuda, Prof. Alfred Zimmermann, Prof. Rainer Schmidt, Prof. Rashmi Jain

## Plenary Talks

**Prof. Rossi Setchi**

Cardiff University, UK

### *The role of neuro-symbolic AI in human-centred robotics*

**Abstract:** The keynote explores how neuro-symbolic AI advances human-centred robotics by enhancing perception, reasoning, adaptability, and explainability, paving the way for more intuitive and beneficial human-robot interactions. Neuro-symbolic AI combines the strengths of neural networks and symbolic reasoning: neural networks excel at perception and pattern recognition, enabling robots to interpret complex data and dynamic scenes, while symbolic reasoning provides structured knowledge modelling, logical planning, and understanding of human goals and contexts. The keynote highlights examples from recent projects at the Research Centre in AI, Robotics and Human-Machine Systems (IROHMS) at Cardiff, where neuro-symbolic AI improves human-robot collaboration by enabling robots to comprehend both implicit and explicit aspects of human behaviour. This integration also supports decision transparency, fostering trust and acceptance. Moreover, neuro-symbolic systems can adapt to dynamic environments by learning from data while adhering to logical constraints, ensuring safety and reliability. These capabilities are critical in many fields, where alignment with human values is paramount. Finally, the keynote explores opportunities for leveraging neuro-symbolic AI to boost productivity and redefine roles across industry, education, and public services.



**Biography:** Professor Rossi Setchi is Fellow of the Learned Society of Wales and Professor of High-Value Manufacturing at the School of Engineering. She is Director of the Research Centre in AI, Robotics and Human-Machine Systems (IROHMS) and Co-Director of the Centre for Advanced Manufacturing Systems at Cardiff (CAMSAC). She has a distinguished track record of research in a range of areas including AI, robotics, systems engineering, additive manufacturing, industrial sustainability, Cyber-Physical Systems and Industry 4.0, and, in particular,

has built an international reputation for excellence in knowledge-driven symbolic AI, computational semantics and human-machine systems. Professor Setchi has worked with more than 150 co-authors and contributed over 280 peer reviewed publications including 16 edited books and over 120 journal articles, secured external grant support totalling more than £26 million and supervised to successful completion 28 PhD

students. She has collaborated with over 20 UK and 30 overseas universities, 15 research organisations and 30 industrial companies from more than 20 countries in Europe, Asia and Australia. She has provided research leadership on over 30 collaborative projects funded by UK and overseas funding bodies, including the Royal Society, Royal Academy of Engineering, EPSRC and the European Commission.

**Prof. Jacek Mańdziuk**

Warsaw University of Technology, Poland

***Abstract Visual Reasoning: Still a challenge for AI***

**Abstract:** Abstract Visual Reasoning (AVR) involves a suite of tasks that require the ability to discover common concepts underlying the set of images through an analogy-making process, similar to how humans solve IQ tests. In this keynote, I will summarize the main types of AVR problems along with possible solution approaches. In the second part of the talk, I will delve into Bongard Problems (BPs) which pose a fundamental AVR challenge, mainly due to the requirement to combine visual reasoning with verbal description. In particular, I will pose a question whether multimodal large language models (MLLMs), inherently designed to combine vision and language, are capable of tackling BPs. To answer it, the results of applying state-of-the-art MLLMs to solving BPs (composed of either synthetic or real-world images) will be presented and analysed, revealing significant AVR limitations of contemporary models.



**Biography:** Prof. Jacek Mańdziuk, Ph.D., D.Sc., is a full professor at the Faculty of Mathematics and Information Science, Warsaw University of Technology, Head of Division of Artificial Intelligence and Computational Methods, and Head of Doctoral Program in Computer Science at this faculty. He was General Co-Chair of the 2021 IEEE Congress on Evolutionary Computation, Krakow, Poland, and Chair of the annual IEEE SSCI Symposium on Computational Intelligence for Human-like Intelligence 2013-2023. He is a recipient of the Fulbright Senior Research Award (UC Berkeley and ICSI

Berkeley, USA) and the Robert Schuman Foundation Fellowship (CNRS, Besancon, France). He is a Founding Chair of the IEEE ETTC Task Force on Toward Human-like Intelligence. He presented his research at numerous invited conference and university talks all over the world.

His research interests include application of Computational Intelligence and Artificial Intelligence methods to dynamic and bilevel optimization problems, abstract visual reasoning, games, and human-machine cooperation in problem solving. He is also interested in the development of human-like learning and problem-solving methods.

**Prof. Hajime Nagahara**  
Osaka University, Japan

***Deep Sensing: Jointly optimizing imaging and processing***

**Abstract:** Deep neural network (DNN) is a powerful tool for solving image processing and computer vision tasks such as image and video reconstructions, object recognition, and scene understanding, etc. However, DNN have been used for only digital domain in the imaging pipeline, such as the feature extractor and classifier models after an image is captured and digitized. In this research, we propose a new framework called "deep sensing". The proposed framework also models the analog layer to the neural network model and jointly optimizes the parameters in optics and sensor designs of a camera, as well as reconstruction and classification models by the same training strategy.



**Biography:** Hajime Nagahara is a professor at D3 Center, Osaka University, since 2024. He received Ph.D. degree in system engineering from Osaka University in 2001. He was a research associate of the Japan Society for the Promotion of Science from 2001 to 2003. He was an assistant professor at the Graduate School of Engineering Science, Osaka University, Japan from 2003 to 2010. He was an associate professor in Faculty of information science and electrical engineering at Kyushu University from 2010 to 2017. He was a professor at Institute for Datability Science, Osaka

University, from 2017 to 2024.

He was a visiting associate professor at CREA University of Picardie Jules Verns, France, in 2005. He was a visiting researcher at Columbia University in 2007-2008 and 2016-2017.

Computational photography and computer vision are his research areas. He received IPSJ Nagao Special Researcher Award in 2012, ICCP2016 Best Paper Runners-up, and SSII Takagi Award in 2016. He is a program chair for ICCP2019, General Chair for upcoming ACCV2026 Osaka, Associate Editor for IEEE Transaction on Computational Imaging in 2019-2022, and Director of Information Processing Society of Japan in 2022-2024.

**Assoc. Prof. Ahmed Samet**  
INSA Strasbourg, France

### ***Knowledge Discovery and Intelligent Modeling in the Context of Industry X.0***

**Abstract:** This presentation explores data-driven approaches for knowledge discovery and intelligent modeling in the evolving context of Industry X.0—a concept that encompasses both Industry 4.0, focused on automation, IoT, and data-driven decision-making, and Industry 5.0, which emphasizes human-centric, sustainable, and resilient industrial systems. The talk presents three representative case studies illustrating how data mining and machine learning can support the development of smart, adaptive systems. In predictive maintenance, pattern mining is used to identify frequent sequences that precede system failures in production lines, although expert interpretation remains crucial for deriving actionable insights. In the domain of inventive design, text mining techniques are applied to patents to identify TRIZ contradictions, thereby supporting cross-disciplinary innovation. Finally, for energy management, a neural regression model is introduced to predict the remaining useful life (RUL) of lithium-ion batteries based on operational usage data, contributing to improved efficiency and reliability in energy systems. Altogether, these examples demonstrate how integrating domain knowledge with advanced data-centric methods can drive innovation, reliability, and sustainability in the era of Industry X.0.

**Biography:** Ahmed Samet is an Associate Professor with Habilitation (HDR) at INSA Strasbourg and a member of the Data and Knowledge Science team at the ICube Laboratory in France. He has over 10 years of experience in R&D projects, including postdoctoral research positions at the Université de Technologie de Compiègne, INRIA in France and Oxford Brookes University in the UK. His research interests focus on machine learning, data mining, and their applications in the context of Industry X.0. He also has more than 5 years of experience applying data mining and natural language processing techniques to inventive design. He currently coordinates several projects, including the Horizon Europe ENERGETIC project (2023-2026), and serves as the scientific lead of the ANR-funded XQUALITY (2023-2026) project at INSA Strasbourg. In parallel, he manages industrial collaborations with major stakeholders in the energy sector such as EDF, EIFFAGE Energy. Ahmed Samet is an elected board member of the French Association for Artificial Intelligence (AFIA), the official French branch of the European Association for Artificial Intelligence (EurAI). He has served as a track chair in international conferences such as KES and actively contributes to the organization of major national AI events such as PFIA, ESIA, and others.

**Assoc. Prof. Matteo Cristani**

University of Verona , Italy

### ***Business Process Compliance: the quest for automation***

**Abstract:** The Compliance of Business Processes towards a normative background is one of the most compelling adventures of the recent developments in a variety of fields including Information Systems, Artificial Intelligence and Knowledge Engineering. It is so, for three main reasons: (1) because the need for automation is emerging due to the rising cost of human labour onto compliance check and the simultaneous expansion of the relevant backgrounds in the globalization era, where also conflictual international juridical scenarios and soft law issues including certifications, product production policies, standards and other private international agreements emerged, (2) in effect of the growth of the complexity of processes, especially those involving the supply chain, again due to the globalization processes and (3) for the strict need of anticipating the risks of the dynamics of production, commercialization and administration on a mutating background. Since the birth of the discipline, the community has been struggling with the emersion of these difficulties, and has been studying the qualitative techniques that can be used to perform such tasks. A specific line of investigation has been successful, that is based on the usage of representing in a unitary framework both normative background and process structure: Defeasible Deontic Logic. This framework has been used to solve the issues of Compliance throughout the whole lifecycle of a Business Process: by design, on test, on audit, at correction time, at migration time, and others. In this speech I shall provide a general picture of the domain of research, devise a forecast for the future developments and discuss open issues and their nature.



**Biography:** Matteo Cristani is Associate Professor in the University of Verona (Italy), Department of Computer Science. He is employed by the University of Verona since 1997. His first research interest has been Natural Language Processing, and then Temporal Reasoning, the theme on which he wrote the doctoral dissertation. His subsequent main research interest is Artificial Intelligence, in particular Ontology on the Web, Spatial reasoning. He has published in outstandingly International Conferences and Journals. He has thenceforth developed a strong interest in the topic of legal reasoning

and its applications to Business Process Compliance, on which he became an active member of the international research community of Regulatory Technologies. He has been recently applying this topics towards the domains of Process Management and Analysis.

# Welcome Drinks Reception and Early Registration

Tuesday 9<sup>th</sup> September

Welcome Drinks Reception	
18:00 - 20:00 JST	Ritsumeikan University - Osaka Ibaraki Campus

# In-person Timetable – Wednesday 10 September

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
9:00 - 9:15 JST	Opening Ceremony Jonathan Flearmoy & Prof Lakhmi Jain				
09:15 -10:15 JST	Keynote Speaker 1 Prof. Rossi Setchi Talk Title: The role of neuro-symbolic AI in human-centred robotics				
10:15 - 10:35 JST	Networking Break				

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
10:35 - 12:35 JST	G01-A Machine Learning, Artificial Neural Networks and Deep Learning Prof. Ahmed Samet	G02-A A Knowledge Based and Expert Systems Prof. Anne Hakansson	G03-A Intelligent Information and Engineering Systems Assoc. Prof. Franco Giustozzi	G04-A Industry Applications Assoc. Prof. Claudio Tomazzoli	IS01 - A Information Technology and Information Systems in Accounting, Finance and Controlling Assis. Prof, Arkadiusz Januszcwski
12:35 - 13:35 JST	Lunch Break				
13:35 - 14:35 JST	<p>Keynote Speaker 2 Prof. Jacek Mańdziuk</p> <p>Talk Title: Abstract Visual Reasoning: Still a challenge for AI</p>				

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
14:35 - 15:05 JST	Networking Break				
15:05 - 17:35 JST	GO1-B Machine Learning, Artificial Neural Networks and Deep Learning Prof. Ahmed Samet	IS05 Knowledge and data engineering in medicine and health care Assoc. Prof. Paja Wieslaw	G02-B Knowledge Based and Expert Systems Prof. Anne Hakansson	G03-B Intelligent Information and Engineering Systems Assoc. Prof. Franco Giustozzi	IS24 Knowledge-based Data Analysis for Complex Data Prof. Mika Sato-Ilic
	Evening Social - TBC				

Rooms	Room 6	Room 7	Room 8	Room 9
9:00 - 9:15 JST	Opening Ceremony Jonathan Flearmoy & Prof Lakhmi Jain			
09:15 -10:15 JST	Keynote Speaker 1 Prof. Rossi Setchi Talk Title: The role of neuro-symbolic AI in human-centred robotics			
10:15 - 10:35 JST	Networking Break			

Rooms	Room 6	Room 7	Room 8	Room 9
10:35 - 12:35 JST	IS17 - A AI, Robotics, and Digital Technologies for Medical/Healthcare Systems Prof. Hiroharu Kawanaka	IS25 & IS08 Generative AI in the healthcare system: friend of foe? & The 2nd edition of Leveraging Digital Twins in Healthcare (LDTH) Invited Session Assoc. Prof Smaranda Belciug & Dr. Laura Verde	IS41 - A Computational learning theory and advances from Heuristics to Hyperheuristics: new trends and applications in hardoptimization and constraint reasoning Dr. Hajer Ben Othman	IS45 Science of Tooling - Framing A Design Science for Digital Tools in the Urban Context Prof. Dr.-Ing. Jörg Rainer Noennig
12:35 - 13:35 JST	Lunch Break			
13:35 - 14:35 JST	<p>Keynote Speaker 2 Prof. Jacek Mańdziuk</p> <p>Talk Title: Abstract Visual Reasoning: Still a challenge for AI</p>			

Rooms	Room 6	Room 7	Room 8	Room 9
14:35 - 15:05 JST	Networking Break			
15:05 - 17:35 JST	IS20-A Computational Culture, Arts, and Interaction Prof. Ryosuke Yamanishi	IS12 - A Intelligent Systems in advancing sustainable solutions, management and strategies Prof. Dr. inż. Adam Sulich	G04 - B Industry Applications Assoc. Prof. Claudio Tomazzoli	IS17 - B AI, Robotics, and Digital Technologies for Medical/Healthcare Systems Prof. Hiroharu Kawanaka
	Evening Social - TBC			

# In-person Timetable – Thursday 11 September

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
09:00 - 10:00 JST	Keynote Speaker 3 Assoc. Prof. Ahmed Samet Talk Title: Knowledge Discovery and Intelligent Modeling in the Context of Industry X.0				
10:00 - 10:30 JST	Networking Break				
10:45 - 12:30 JST	G01-C Machine Learning, Artificial Neural Networks and Deep Learning Ahmed Samet	IS02 Aspects of intelligent learning systems: e-Learning across various educational contexts Prof. Dr. Hiroshi Ueda	IS22 Faculty Development for the Next Digital Era Prof. Kayoko Kurita	IS13 - A & IS57 Interdisciplinary Approaches in Data Science Practice (IADSP 2025) & Smart Sustainable Agriculture and Food Production Ivan Luković & Prof. Robert J. Howlett	IS12 - B Intelligent Systems in advancing sustainable solutions, management and strategies Prof. Dr. inż. Adam Sulich
12:30 - 13:30 JST	Lunch Break				

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
13:30 - 15:00 JST	G03 - C Intelligent Information and Engineering Systems Assoc. Prof. Franco Giustozzi	IS32-A Knowledge-Based Systems for e-Business Prof. Kazuhiko Tsuda	IS23 - B Smart Education: Learning environment using technology Prof. Nobuyuki Ogawa	IS35 - A Knowledge Engineering and Data Mining - theory and practice Assoc Prof. Agnieszka Nowak-Brzezińska	IS40 Intelligent Data Analytics for Internet of Things Environments Dr. Maha Driss
15:00 - 15:30 JST	Networking Break				

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
15:35 - 17:35 JST	IS54 - A Harnessing AI in Knowledge and Intelligent Systems for Business Prof. Celina Olszak & Prof. Pawel Kasprowski	IS24 - B & IS61 Knowledge-based Data Analysis for Complex Data & Sustainable Innovation for the Digital IT era Prof. Mika Sato-Ilic & Prof. Yoshimasa Masuda	IS23 - C & Workshop AIN Smart Education: Learning environment using technology Prof. Nobuyuki Ogawa	IS03 - A RAG – Robust, Adaptive and Generative AI Prof. Aya Saad	IS59 - D New Generation Computing in Engineering, Life Science and Economy Prof. Piotr Nikończuk
	Gala Dinner - Meet TBC				

Rooms	Room 6	Room 7	Room 8	Room 9
09:00 - 10:00 JST	<p>Keynote Speaker 3</p> <p>Assoc. Prof. Ahmed Samet</p> <p>Talk Title: Knowledge Discovery and Intelligent Modeling in the Context of Industry X.0</p>			
10:00 - 10:30 JST	Networking Break			
10:45 - 12:30 JST	<p>IS20 - B</p> <p>Computational Culture, Arts, and Interaction</p> <p>Prof. Ryosuke Yamanishi</p>	<p>IS52 - A</p> <p>Management of safety, security, production, and human factors for cyber-physical systems</p> <p>Dr. HAMAGUCHI, Takashi</p>	<p>IS55</p> <p>Design of Nigiwai: Places Embracing Values</p> <p>Prof. Akinori Abe</p>	<p>IS59 - A</p> <p>New Generation Computing in Engineering, Life Science and Economy</p> <p>Prof. Piotr Nikończuk</p>
12:30 - 13:30 JST	Lunch Break			

Rooms	Room 6	Room 7	Room 8	Room 9
13:30 - 15:00 JST	IS09 Networks for Innovation, Knowledge Creation and Sharing Prof. Hironori Takeuchi	IS11 - A Multi-Criteria Decision- Analysis methods – theory and their applications Prof. Wojciech Sałabun	IS59-C New Generation Computing in Engineering, Life Science and Economy Prof. Piotr Nikończuk	IS52 - B Management of safety, security, production, and human factors for cyber-physical systems Dr. HAMAGUCHI, Takashi
15:00 - 15:30 JST	Networking Break			

Rooms	Room 6	Room 7	Room 8	Room 9
15:35 - 17:35 JST	IS09 Networks for Innovation, Knowledge Creation and Sharing Prof. Hironori Takeuchi	IS11 - D Multi-Criteria Decision- Analysis methods – theory and their applications Prof. Wojciech Sałabun	IS32-B Knowledge-Based Systems for e-Business Prof. Kazuhiko Tsuda	IS14-A Interdisciplinary Approaches in Digital Transformation (IADT 2025) Prof. Ralf-Christian Härting
	Gala Dinner - Meet TBC			

## Online Timetable – Thursday 11 September

Room Type	Room 1 VIRTUAL ROOM (Run via KES Online)	Room 2 VIRTUAL ROOM (Run via KES Online)	Room 3 VIRTUAL ROOM (Run via KES Online)	Room 4 VIRTUAL ROOM (Run via KES Online)	Room 5 VIRTUAL ROOM (Run via KES Online)
10:00 - 12:00 JSP	G01-D Machine Learning, Artificial Neural Networks and Deep Learning Prof. Ahmed Samet	IS03 Robust, Adaptive and Generative AI Prof. Aya Saad	IS15 Smart Generative AI and Data Visualization Technologies Prof. Dr. Cesar Sanin	IS28 & IS36 Complex and dispersed classifiers (CDC 2025) & Signal Processing and Edge AI Algorithms for Embedded Systems and Sensors Prof. Małgorzata Przybyła-Kasperek & Prof. Paolo Crippa	IS43-B Information, Innovation and Technology as a basis for sustainable business and society Prof. Katarzyna Szopik-Depczyńska
12:00 - 13:00 JSP	Lunch Break				

Room Type	Room 1 VIRTUAL ROOM (Run via KES Online)	Room 2 VIRTUAL ROOM (Run via KES Online)	Room 3 VIRTUAL ROOM (Run via KES Online)	Room 4 VIRTUAL ROOM (Run via KES Online)	Room 5 VIRTUAL ROOM (Run via KES Online)
13:00 - 15:00 JST	GO1-E Machine Learning, Artificial Neural Networks and Deep Learning Prof. Ahmed Samet	G02-C Knowledge Based and Expert Systems Prof. Anne Hakansson	IS56 & IS54 Decision-making in companies and the economy. Navigating Risks and Opportunities & Harnessing AI in Knowledge and Intelligent Systems for Business Innovation Assoc.Prof. Małgorzata Porada- Rochoń & Prof. Celina Olszak & Prof. Pawel Kasprowski	IS11-B Multi-Criteria Decision-Analysis methods – theory and their applications Prof. Wojciech Salaun	IS02 Aspects of intelligent learning systems: e-Learning across various educational contexts Prof. Dr. Hiroshi Ueda

Room Type	Room 6 VIRTUAL ROOM (Run via KES Online)	Room 7 VIRTUAL ROOM (Run via KES Online)	Room 8 VIRTUAL ROOM (Run via KES Online)	Room 9 VIRTUAL ROOM (Run via KES Online)	Room 10 VIRTUAL ROOM (Run via KES Online)
10:00 - 12:00 JSP	IS48-A Data Pre- processing Strategies and Machine Learning Prof. Ireneusz Czarnowski	IS11-A Multi-Criteria Decision-Analysis methods – theory and their applications Prof. Wojciech Sałabun	IS35 Knowledge Engineering and Data Mining - theory and practice Assoc Prof. Agnieszka Nowak- Brzezińska	IS27-A Reasoning-based Intelligent Applied Systems Dr Jair Minoro Abe	IS59-B New Generation Computing in Engineering, Life Science and Economy Prof. Piotr Nikończuk
12:00 - 13:00 JSP	Lunch Break				

Room Type	Room 6 VIRTUAL ROOM (Run via KES Online)	Room 7 VIRTUAL ROOM (Run via KES Online)	Room 8 VIRTUAL ROOM (Run via KES Online)	Room 9 VIRTUAL ROOM (Run via KES Online)	Room 10 VIRTUAL ROOM (Run via KES Online)
13:00 - 15:00 JST	IS04-A Classification, forecasting and decision support Prof. Rafal Deja	IS59-E New Generation Computing in Engineering, Life Science and Economy Prof. Piotr Nikończuk	IS23-A Smart Education: Learning environment using technology Prof. Nobuyuki Ogawa	IS26 - A Intelligent Decision Support and Process Optimization Under Uncertainty Dr Aleksandra Radomska-Zalas	IS44 Global and Constrained Optimization: Algorithms and Applications (6 <sup>th</sup> Edition) Prof. Abdellah Chehri

Room Type	Room 11 VIRTUAL ROOM (Run via KES Online)	Room 12 VIRTUAL ROOM (Run via KES Online)	Room 13 VIRTUAL ROOM (Run via KES Online)	Room 14 VIRTUAL ROOM (Run via KES Online)
10:00 - 12:00 JSP	G03-E Intelligent Information and Engineering Systems Assoc. Prof. Franco Giustozzi	G04-C Industry Applications Assoc. Prof. Claudio Tomazzoli	IS37-A Healthcare systems using artificial intelligence, deep learning and vision transformers techniques Prof. Yen Wei Chen	IS17 AI, Robotics, and Digital Technologies for Medical/Healthcare Systems Prof. Hiroharu Kawanaka
12:00 - 13:00 JSP	Lunch Break			

Room Type	Room 11 VIRTUAL ROOM (Run via KES Online)	Room 12 VIRTUAL ROOM (Run via KES Online)	Room 13 VIRTUAL ROOM (Run via KES Online)	Room 14 VIRTUAL ROOM (Run via KES Online)
13:00 - 15:00 JST	G03-F Intelligent Information and Engineering Systems Assoc. Prof. Franco Giustozzi	IS39 Future-Ready: Harnessing Intelligent Systems for Smart Societies Lenuța Alboai	IS25 Generative AI in the healthcare system: friend of foe? Assoc. Prof Smaranda Belciug	IS08 & IS07 The 2nd edition of Leveraging Digital Twins in Healthcare (LDTH) Invited Session & Digitalization and Knowledge Management in Health Data Acquisition and Processing Dr. Laura Verde & Prof. Ralf Seepold

## In-person Timetable – Friday 12 September

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
09:00 - 10:00 JST	Keynote Speaker 4 Assoc. Prof. Matteo Cristani Talk Title: Business Process Compliance: the quest for automation				
10:00 - 10:30 JST	Networking Break				
10:30 - 12:30 JST	IS27 & IS29 Reasoning-based Intelligent Applied Systems Dr Jair Minoro Abe	IS10 & IS34 Cyber Security and Big Data & Detection of Complex Attacks Dr. Francesco Mercaldo & Prof. Pierre Parrend	G04-B Industry Applications Assoc. Prof. Claudio Tomazzoli	IS07 - A Digitalization and Knowledge Management in Health Data Acquisition and Processing Prof. Ralf Seepold	IS50-A Software Engineering and IT Intensive Systems Prof. Dr. Sergey V. Zykov
12:30 - 13:30 JST	Lunch break				

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
13:30 - 14:30 JST	Keynote Speaker 5 Prof. Hajime Nagahara Talk Title: Deep Sensing: Jointly optimizing imaging and processin				
14:30 - 15:00 JST	Networking Break				

Rooms	Main Plenary	Room 2	Room 3	Room 4	Room 5
15:00 - 17:00 JST	<p>IS37 - B Healthcare systems using artificial intelligence, deep learning and vision transformers Prof. Yen Wei Chen</p>	<p>IS39 &amp; IS18 Harnessing Intelligent Systems for Smart Societies &amp; Computational Systems and Synthetic Biology Lenuța Alboaie &amp; Dr Eugen Czeizler</p>	<p>IS07 - B Digitalization and Knowledge Management in Health Data Acquisition and Processing Prof. Ralf Seepold</p>	<p>IS15 - A Smart Generative AI and Data Visualization Technologies Prof. Dr. Cesar Sanin</p>	<p>IS16 &amp; IS21 The 9th Special Session on Eye Movement Data Processing and Analysis &amp; Security Informatics, Predictive Policing Strategies in Law Enforcement Prof. Katarzyna Harezlak &amp; Prof. Pawel Kasprowski &amp; Prof. Fu-Ching Tsai</p>
17:00 - 17:15 JST	Closing Ceremony				

Rooms	Room 6	Room 7	Room 8	Room 9
09:00 - 10:00 JST	<p>Keynote Speaker 4</p> <p>Assoc. Prof. Matteo Cristani</p> <p>Talk Title: Business Process Compliance: the quest for automation</p>			
10:00 - 10:30 JST	Networking Break			
10:30 - 12:30 JST	<p>IS14 -B</p> <p>Interdisciplinary Approaches in Digital Transformation (IADT 2025)</p> <p>Prof. Ralf-Christian Härting</p>	<p>IS37 - A</p> <p>Healthcare systems using artificial intelligence, deep learning and vision transformers techniques</p> <p>Prof. Yen Wei Chen</p>	<p>IS32-C</p> <p>Knowledge-Based Systems for e-Business</p> <p>Prof. Kazuhiko Tsuda</p>	<p>IS31</p> <p>The impact of artificial intelligence on business</p> <p>Prof. Larisa IVASCU</p>
12:30 - 13:30 JST	Lunch break			

Rooms	Room 6	Room 7	Room 8	Room 9
13:30 - 14:30 JST	Keynote Speaker 5 Prof. Hajime Nagahara Talk Title: Deep Sensing: Jointly optimizing imaging and processin			
14:30 - 15:00 JST	Networking Break			

Rooms	Room 6	Room 7	Room 8	Room 9
15:00 - 17:00 JST	<p>IS46 Knowledge-Based Engineering Systems with Physiological Insights for Social Innovation and Well-Being Prof. Atsuko-K.yamazak</p>	<p>IS44 &amp; IS33 Global and Constrained Optimization: Algorithms and Applications (6th Edition) &amp; ADVANCES IN HEALTH INFORMATICS Prof. Abdellah Chehri &amp; Prof. Daniela Gifu</p>	<p>IS38 - B Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy Dr. Lukasz Kozar</p>	<p>IS47 - A Organisational networks based on knowledge, innovation and intelligent systems Associate Professor Eng. Ph.D. Robert Kucęb</p>
17:00 - 17:15 JST	Closing Ceremony			

## Online Timetable – Friday 12 September

Room Type	Room 1 VIRTUAL ROOM (Run via KES Online)	Room 2 VIRTUAL ROOM (Run via KES Online)	Room 3 VIRTUAL ROOM (Run via KES Online)	Room 4 VIRTUAL ROOM (Run via KES Online)	Room 5 VIRTUAL ROOM (Run via KES Online)
10:00 - 12:00 JSP	G01-F Machine Learning, Artificial Neural Networks and Deep Learning Prof. Ahmed Samet	IS48-B & IS41 Data Pre-processing Strategies and Machine Learning & Computational learning theory and advances from Heuristics to Hyperheuristics: new trends and applications in hardoptimization and constraint reasoning Prof. Ireneusz Czarnowski & Dr. Hajer Ben Othman	G02-D Knowledge Based and Expert Systems Prof. Anne Hakansson	IS04-B Classification, forecasting and decision support Prof. Rafal Deja	IS60 SOAP4EARTH: Smart Observation And Preservation for Earth Stefano Marrone
12:00 - 13:00 JSP	Lunch break				

Room Type	Room 1 VIRTUAL ROOM (Run via KES Online)	Room 2 VIRTUAL ROOM (Run via KES Online)	Room 3 VIRTUAL ROOM (Run via KES Online)	Room 4 VIRTUAL ROOM (Run via KES Online)	Room 5 VIRTUAL ROOM (Run via KES Online)
13:00 - 15:00 JST	G01-G Machine Learning, Artificial Neural Networks and Deep Learning Prof. Ahmed Samet	IS47-B Organisational networks based on knowledge, innovation and intelligent systems Associate Professor Eng. Ph.D. Robert Kucęb	IS19 Models in Smart System Theory and Practice (MSTP) Prof. Natalia A. Serdyukova	IS50 & IS59-F Software Engineering and IT Intensive Systems & New Generation Computing in Engineering, Life Science and Economy Prof. Dr. Sergey V. Zykov & Prof. Piotr Nikończuk	IS16 The 9th Special Session on Eye Movement Data Processing and Analysis Prof. Katarzyna Harezlak & Prof. Pawel Kasprowski

Room Type	Room 6 VIRTUAL ROOM (Run via KES Online)	Room 7 VIRTUAL ROOM (Run via KES Online)	Room 8 VIRTUAL ROOM (Run via KES Online)	Room 9 VIRTUAL ROOM (Run via KES Online)	Room 10 VIRTUAL ROOM (Run via KES Online)
10:00 - 12:00 JSP	IS26-B Intelligent Decision Support and Process Optimization Under Uncertainty Dr Aleksandra Radomska-Zalas	IS47-A Organisational networks based on knowledge, innovation and intelligent systems Associate Professor Eng. Ph.D. Robert Kucęb	IS38-A Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy Dr. Lukasz Kozar	IS12-A Intelligent Systems in advancing sustainable solutions, management and strategies Prof. Dr. inż. Adam Sulich	IS13 Interdisciplinary Approaches in Data Science Practice (IADSP 2025) Prof. Ivan Luković
12:00 - 13:00 JSP	Lunch break				

Room Type	Room 6 VIRTUAL ROOM (Run via KES Online)	Room 7 VIRTUAL ROOM (Run via KES Online)	Room 8 VIRTUAL ROOM (Run via KES Online)	Room 9 VIRTUAL ROOM (Run via KES Online)	Room 10 VIRTUAL ROOM (Run via KES Online)
13:00 - 15:00 JST	IS12-B Intelligent Systems in advancing sustainable solutions, management and strategies Prof. Dr. inż. Adam Sulich	IS38-B Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy Dr. Lukasz Kozar	IS01 & IS31 Information Technology and Information Systems in Accounting, Finance and Controlling & The impact of artificial intelligence on business Assis. Prof, Arkadiusz Januszewski & Prof. Larisa IVASCU	IS43-A Information, Innovation and Technology as a basis for sustainable business and society Prof. Katarzyna Szopik-Depczyńska	G03-D Intelligent Information and Engineering Systems Assoc. Prof. Franco Giustozzi

Room Type	Room 11 VIRTUAL ROOM (Run via KES Online)	Room 12 VIRTUAL ROOM (Run via KES Online)	Room 13 VIRTUAL ROOM (Run via KES Online)	Room 14 VIRTUAL ROOM (Run via KES Online)
10:00 - 12:00 JSP	IS10 Cyber Security and Big Data Dr. Francesco Mercaldo	IS30 & IS05 & IS51 Intelligent Methods in Maritime Engineering, Transport and Logistics & Knowledge and data engineering in medicine and health care & The 3rd International Symposium on Intelligent and Resilient Systems for Industry 5.0 Prof. Andrzej Banaszek & Assoc. Prof. Paja Wieslaw & Dr. Olfa Belkahla DRISS	IS40-A Intelligent Data Analytics for Internet of Things Environments Dr. Maha Driss	IS21/IS58/IS52 Security Informatics, Predictive Policing Strategies in Law Enforcement & Information Disorder Challenges in the Era of AI-Generated Contents Manipulation: Security, Trustability and Faithfulness of Shared Knowledge & Management of safety, security, production, and human factors for cyber-physical systems Prof. Fu-Ching Tsai & Prof. Fiammetta Marulli & Dr. HAMAGUCHI, Takashi
12:00 - 13:00 JSP	Lunch break			

Room Type	Room 11 VIRTUAL ROOM (Run via KES Online)	Room 12 VIRTUAL ROOM (Run via KES Online)	Room 13 VIRTUAL ROOM (Run via KES Online)	Room 14 VIRTUAL ROOM (Run via KES Online)
13:00 - 15:00 JST	IS49 Specialized Decision Techniques for Data Mining, Transportation and Project Management Prof. Ewa Ratajczak- Ropel	IS40-B Intelligent Data Analytics for Internet of Things Environments Dr. Maha Driss	IS37-B Healthcare systems using artificial intelligence, deep learning and vision transformers techniques Prof. Yen Wei Chen	

## Presentation Schedule – General Tracks

### ***G01-A: Machine Learning, Artificial Neural Networks and Deep Learning***

Chair: Prof. Ahmed Samet

Wednesday 10 September: 10:35 - 12:35

Plenary Room

Session Code	Title	Authors
<b>42</b>	Beyond Major Floods: Deep Learning for Detecting Shallow Water Inundation in Agricultural Areas	Serkan Ayvaz, Phongsakon Mark Konrad and Toygar Tanyel
<b>60</b>	Medformer: A Multitask Multimodal Foundational Model for Medical Imaging	Cristian Simionescu
<b>235</b>	Discerning Music Genres: Exploring Neural Network Architectures for Automated Classification	Eric Odle, Pei-Chun Lin and Amin Farjudian
<b>113</b>	Media Framing of Heatwaves in Japan: Misalignment between Temperature and News Coverage	Kunhao Yang and Mengyuan Fu
<b>243</b>	Traffic sign classification using cost effective data augmentation	René Pihlak, Andri Riid and Sadok Ben Yahia

**G01-B: Machine Learning, Artificial Neural Networks and Deep Learning**

Chair: Prof. Ahmed Samet

Wednesday 10 September - 15:05 - 17:35

Plenary Room

Session Code	Title	Main Author
298	KurtHGR: A Neural Maximal Correlation for Tabular Datasets	Samuel Stocksieker, Denys Pommeret and Arthur Charpentier
313	Automatic detection of the lumbar spine using transfer learning for Quantitative Fluoroscopy	Rantilini Samaratunga, Marcin Budka, Alexander Breen and Alan Breen
513	Extracting Explainability from Multi-Layer Perceptrons for Binary Classification Problems through Łukasiewicz Logic	Bogdan Macovei
515	Towards Interpretable Botanical Trait Recognition: The Role of Segmentation in Deep Learning on Herbarium Collections	Sklab Youcef, Hanane Ariouat, Eva Perez Pimpare, Eric Chenin, Marc Pignal, Régine Vignes Lebbe, Souhila Arib, Edi Prifti and Jean-Daniel Zucker
547	Disentangled Deep Smoothed Bootstrap for Fair Imbalanced Regression	Samuel Stocksieker, Denys Pommeret and Arthur Charpentier
445	Evaluating RAG Accuracy Enhancement via Page Merging for Non-Ideal Documents	Toshiya Shinoda, Hiroshi Sato and Masao Kubo

**G01-C: Machine Learning, Artificial Neural Networks and Deep Learning**

Chair: Prof. Ahmed Samet

Wednesday 10 September: 10:45 - 12:30

Plenary Room

Session Code	Title	Main Author
<b>475</b>	Multi-Frequency Residual Learning with Dual-Stage Attention LSTM applied in Energy Time Series Forecasting	Houda Abadlia and Nadia Smairi
<b>564</b>	Smart Fleet Management for Shared Micro-mobility: Balanced demand, Redistribution and Charging via Deep Reinforcement Learning	Rania Swessi, Zeineb El Khalfi and Mohamed Mosbah
<b>593</b>	Time Series Classification with Language Models	Chun-Chieh Lin and Yi-Ren Yeh
<b>188</b>	Comprehensive Comparison of Streaming Clustering-Based IDS: Evaluation Across Clustering Families with a Novel Ensemble Classifier	Bilel Saghrouchni, Frédéric Le Mouël and Bogdan Szanto
<b>26</b>	Machine Learning-Based Approach for Delivery Cycle State Classification in Production Metrics: A Comparative Study	Julian Klinger, Mohammad Reza Mohebbi, Mario Döller and Julian Bialas
<b>171</b>	Towards a neurosymbolic approach based on Anticipatory Learning Classifier Systems and Ontologies	Romain Orhand and Ali Ayadi

**G01-D: Machine Learning, Artificial Neural Networks and Deep Learning**

Chair: Prof. Ahmed Samet

Thursday 4 September: 10:00 - 12:00

Online room 1

Session Code	Title	Main Author
180	Efficient Deep Learning Model for Heart Disease Classification	Hend Karoui, Sihem Hamza and Yassine Ben Ayed
186	Capacity-aware learning by rejecting complex samples	Ali Khudiyev and Anne Jeannin-Girardon
95	Building a Convolutional Neural Network from Scratch for Arabic Handwritten Recognition	Oussama Alkayed, Marwa Amara, Nadia Smairi and Yessine Hadj Kacem
146	FXG Score-CAM: Comprehensive Score-Weighted Visual Explanations for Convolutional Neural Networks	Minh Quan Nguyen, Dang Son Ha Pham and Trong Nghia Pham
242	Adaptive Temporal Attention for Cranial Lesion Forecasting in Neurocritical Care via Seq2Seq Architectures	Mariem Medini, Riadh Bouslimi and Wahiba Ben Abdsalem Karaa
255	Multi-MVQA: A multitask framework for interpretable medical visual question answering	Teodora-Alexandra Toader, Gabriela Czibula and Cristina Mircea

**G01-E: Machine Learning, Artificial Neural Networks and Deep Learning**

Chair: Prof. Ahmed Samet

Thursday 4 September: 13:00 - 15:00

Online Room 1

Session Code	Title	Main Author
<b>409</b>	Evaluating Deep Learning Models for Cross-Platform UI Component Detection: A Study Across Web, Desktop, and Mobile Interfaces	Madalina Dicu and Camelia Chira
<b>415</b>	FS-iSDP: A few-shot learning approach using siamese networks for interpretable software defect prediction	Ioana Chelaru, Gabriela Czibula and Andrei Mihai
<b>418</b>	Performance in Chaos: How Ensemble Learning Conquers Label Noise	Maria-Antonia-Emanuela Pascu and Stefana Gheorghita
<b>439</b>	Bayesian Inference : Probabilistic evidence for User Modeling	Rim Rebai, Ali Ben Mrad and Mohamed Amin Maalej
<b>274</b>	A Robust Autoencoder Ensemble-Based Approach for Anomaly Detection in Text	Jeremie Pantin and Christophe Marsala
<b>492</b>	Deep Contrastive Graph Learning Framework for Hyperspectral Image Classification	Chaima Khemiri, Wissem Inoubli and Mohamed Farah

**G01-F: Machine Learning, Artificial Neural Networks and Deep Learning**

Chair: Prof. Ahmed Samet

Friday 5 September: 10:00 - 12:00

Online room 1

Session Code	Title	Main Author
495	A Clustering-Aware and Multi-Feature Replication Strategy for Efficient Storage in HDFS	Helmi Tlich, Hanene Chettaoui and Tarek Hamrouni
503	Res-KAN: Computing-Efficient Hybrid KAN-based Residual Neural Networks For Human Action Recognition	Abdul Moeed Siddiqui and Sayda Elmi
279	Hybrid Transformer-Based Framework for Building Detection in High-Resolution Satellite Imagery: Integrating SAM, PVT, and Mask2Former	Ezil Sam Leni A, Revathi T and Niranchna R
406	WeightedHGE: Weighted Heterogeneous Graph Embedding	Khouloud Ammar, Wissem Inoubli, Sami Zghal and Engelbert Mephu Nguifo
565	Cross-Attention-Enhanced Multimodal Fake News Detection using Autoencoder-based Fusion and Transformer-based models	Rahma Ghorbel, Hanen Ameur and Yassine Ben Ayed

***G01-G: Machine Learning, Artificial Neural Networks and Deep Learning***

Chair: Prof. Ahmed Samet

Friday 5 September: 13:00 - 15:00

Online room 1

Session Code	Title	Main Author
563	A Unified ResNet18-Based Approach for Offline Signature Classification and Verification Across Multilingual Datasets	Brahim Chamakh and Oumayma Bounouh
591	Graph Representation Learning on 3D Mesh-Based Protein Structures	Najla Zayani, Nassima Medimegh, Hela Haj Mohamed and Samir Belaid
602	Deep reinforcement learning-based handover management for an advanced sliced vehicular network	Arwa Amaira and Faouzi Zarai

G02-A Knowledge Based and Expert Systems

Chair: Prof. Anne Hakansson

Wednesday 10 September: 10:35 - 12:35

Room 2

Session Code	Title	Main Author
13	Fuzzy Optimization with Resilience Metrics for Sustainable Supply Chain Planning under Uncertain and Disruption Environments	Noppasorn Sutthibutr, Kunihiro Hiraishi, Navee Chiadamrong and Suttipong Thajchayapong
32	Integrating Mixed Reality Technologies for Building Smart University Campuses	George-Gabriel Constantinescu and Adrian Iftene
201	Pattern-Based Prompting for Accurate Extraction of Ontology Assertional (A-box) Axioms Using LLMs for Ontology Population	Shyama Wilson, Athula Ginige and Jeevani Goonatilake
71	Making News Familiar: News Recommendation from Daily Scenery	Kota Tanabe, Shotaro Ishihara, Kenta Yamada, Masaki Aota and Yasutsuna Matayoshi
104	NEED4Interoperability: An ontology-based data integration for municipal heat planning in Germany	Minsheng Xu, Kushagar Rustagi, Yi-Kai Tsai, Maxim Shamovich, Dominik Schlütter, Markus Kraft, Jérôme Frisch and Christoph van Treeck
200	Understanding Donor Motivation through Social Constructs, Machine Learning, and Predictive Analytics: Evidence from Natural Disasters in Chile	Luis Yañez Sandivari, Sebastián Ríos Perez, Cristián Cáceres Nuñez and Angelo León Gianoni
516	Intelligent Bed Assignment in Emergency Situations: A Hybrid Approach Combining Machine Learning and adaptive Genetic Algorithms (GA)	Marwa Harzi

***G02-B Knowledge Based and Expert Systems***

Chair: Prof. Anne Hakansson

Wednesday 10 September - 15:05 - 17:35

Room 3

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>507</b>	Anomaly Detection in Lithium-Ion Batteries via Stream Reasoning on Structured Knowledge and Time-Series Data	Marwa Zitouni, Franco Giustozzi, Ahmed Samet and Tedjani Mesbahi
<b>201</b>	Pattern-Based Prompting for Accurate Extraction of Ontology Assertional (A-box) Axioms Using LLMs for Ontology Population	Shyama Wilson, Athula Ginige and Jeevani Goonatilake
<b>290</b>	Abstracting Entity Matching for Analysing and Explaining Identity and Difference Decision and Indecision	Olivier Inizan, Fatiha Sais, Anne Goelzer, Joe Raad and Danai Symeonidou
<b>325</b>	Safer Pedestrian Routes via Past Movement Data	Maros Cavojsky, Filip Hodon, Martin Drozda and Zoltan Balogh
<b>253</b>	Utilizing Users' Negative Preferences in LLM-Based Recommendation System	Yunfan Xu and Taketoshi Ushima

**G02-C Knowledge Based and Expert Systems**

Chair: Prof. Anne Hakansson

Thursday 4 September: 13:00 - 15:00

Online room 2

Session Code	Title	Main Author
227	Usability of LLM-driven loss function in Automatic Prompt Engineering for e-commerce	Marcin Koralewski, Filip Dratwiński and Paweł Golec
250	ReGAT-BERT: Transformer-Graph Fusion for Dynamic Reranking	Rihab Haddad, Lobna Hlaoua and Mohamed Nazih Omri
305	Automated Keyword Generation for Academic Research Articles Using Large Language Models	Mert Arda Asar, Alper Mitıncık, Sultan Turhan and Günce Keziban Orman
68	SIS: Leveraging Semantically-Informed Similarity of Text Embeddings for Enhanced Ontology Alignment	Giulio Macilenti, Armando Stellato and Manuel Fiorelly
354	Preprocessing Techniques for Optimizing Mammograms Segmentation: a Cellular Automaton Approach	Iulia-Andreea Ion, Cristiana Moroz-Dubenco and Anca-Mirela Andreica
424	Extending DOLCE With Temporal Dimensions for Quality Ontology in The Context of Business Process Management	Zohra Alyani, Rim Saddem-Yagoubi, Mohamed Turki, Karima Dhouib, Faiez Gargouri and Claudia Frydman
460	Concept Inconsistency: Using Concept Level Information Learned by Deep Learning Models to Improve Training	Nazmus Sakib Ahmed and Naushin Nower

**G02-D Knowledge Based and Expert Systems**

Chair: Prof. Anne Hakansson

Friday 5 September: 10:00 - 12:00

Online room 3

Session Code	Title	Main Author
<b>272</b>	Enhancing Financial Forecasting with Large Language Models: Capabilities and Challenges	Achraf Wali, Isaac Lera, Lamia Hadrach Belguith and Antoni Jaume-i-Capó
<b>508</b>	FuseRank: Filtered Vector Search in Multimodal Structured Data	Dimitris Paraschakis, Rasmus Ros, Adam Asaad, Markus Borg and Per Runeson
<b>518</b>	Formalizing fuzzy explainability: enhancing XAI trustworthiness with fuzzy-ontology-based explanatory properties	Pavel Kosov, Nahla El Kadhi, Cecilia Zanni-Merk and Latafat Gardashova
<b>576</b>	Extending ETL for NoSQL: A validated Framework for Document-Oriented Warehousing	Senda Bouaziz, Ahlem Nabli and Faiez Gargouri
<b>577</b>	HYDRA: Bridging Dynamic and Static User Modeling for Scientific Article Recommendation	Khawla Elayadi and Nacim Yanes
<b>596</b>	Dynamic Community Detection for Web Service Discovery: An Incremental Approach with Temporal Weighting	Amal Hafsi and Lotfi Ben Romdhane
<b>282</b>	Optimizing WordPress Architecture: A next-generation approach with Micro-Frontends	Ştefan Secrieru and Sebastian Stefaniga

**G03-A: Intelligent Information and Engineering Systems**

Chair: Assoc. Prof. Franco Giustozzi

Wednesday 10 September - 10:35 - 12:35

Room 3

Session Code	Title	Main Author
10	Persona Mining Using Process Mining and Unsupervised Machine-Learning	Mustapha Kamal Benramdane and Elena Kornyshova
84	An Ant Colony Optimization approach to solving the Vertex Separator Problem	Sergiu Amihaesei, Emanuel Florentin Olariu and Cristian Frasinaru
102	LLM-Assisted Diagram Generation: From Text to Structured Visuals	Stefana Gheorghita, Cosmin-Iulian Irimia and Adrian Iftene
449	Empowerment-AI-Enhanced System for Initiating and Sustaining Vocabulary Learning in EFL Learners	Shinichi Oeda

**G03-B: Intelligent Information and Engineering Systems**

Chair: Assoc. Prof. Franco Giustozzi

Wednesday 10 September - 15:05 - 17:35

Room 4

Session Code	Title	Main Author
<b>105</b>	Integrating Polyglot Persistence with Large Language Models for Scalable Social Network Applications	J. de Curtò, I. de Zarzà and Carlos T. Calafate
<b>109</b>	Longitudinal diffusion effect on online shopping market with homophily of older adults	Naoyuki Inoue, Yaunobu Kino and Setsuya Kurahashi
<b>137</b>	Advanced approach for Agile/Scrum Process: RetroAI++	Maria Spichkova, Kevin Iwan, Madeleine Zwart, Hina Lee, Yuwon Yoon and Xiaohan Qin
<b>152</b>	Adaptive Metaheuristic Selection in Island-Based Optimization	Adam Żychowski, Xin Yao and Jacek Mańdziuk
<b>202</b>	Conversation Simulation and Behavioral Change Design for Evacuation Decision-Making	Fumio Tanabe, Kosuke Hayashi, Satoshi Yamazaki, Rie Sato, Hideki Murakoshi and Hisashi Hayashi

**G03-C: Intelligent Information and Engineering Systems**

Chair: Assoc. Prof. Franco Giustozzi

Thursday 11 September - 13:30 - 15:00

Room 1

Session Code	Title	Main Author
218	A Deep Reinforcement Learning-based Large Neighborhood Search for Capacitated Vehicle Routing Problems	Asma Cherrered, Ammar Oulamara and Wahiba Ramdane Cherif-Khettaf
179	A comparative approach to assessing linguistic creativity of Large Language Models and Humans	Anca Dinu, Andra-Maria Florescu and Alina Resceanu
457	Training Japanese Sentence-BERT with WikiLink Concept Base	Ryota Nishiura, Seiji Tsuchiya and Hirokazu Watabe
389	Project Similarity Measures for Collaborative Filtering-based Effort Estimation: Review and Empirical Study	Le Thi Kim Nhung Ho, Radek Silhavy and Petr Silhavy

**G03-D: Intelligent Information and Engineering Systems**

Chair: Assoc. Prof. Franco Giustozzi

Friday 5 September - 13:00 - 15:00

Online room 10

Session Code	Title	Main Author
<b>21</b>	Cryptanalysis of chaos-based image encryption using DL attack	Sonia Amiri and Mourad Zaied
<b>62</b>	APU-TrajGen: Adaptive Privacy and Utility Preserving Real-Time Synthetic Trajectory Generation	Adrian-Silviu Roman, Roland Bolboaca, Sophie Cerf, Piroska Haller and Bogdan Robu
<b>456</b>	Automatic Transformation of Data Warehouse Schema to NoSQL Graphe Data Base: A Comparative Study	Sellami Amal, Nabli Ahlem and Gargouri Faiez
<b>86</b>	BERT with Reinforced Embedding and Enhanced Adapters to Score Coherence in Arabic Essay	Rim Aroua Machhout and Chiraz Ben Othmane Zribi
<b>470</b>	Learning the performance of e-learning business processes through process mining	Amel Sahli, Asma Mejri and Sonia Ayachi Ghannouchi
<b>473</b>	Quantum-Powered Deep Learning for Advanced Community Detection in Complex Networks: A Systematic Literature Review	Khawla Khalfi, Wala Rebhi and Nesrine Ben Yahia

**G03-E: Intelligent Information and Engineering Systems**

Chair: Assoc. Prof. Franco Giustozzi

Thursday 4 September - 10:00 - 12:00

Online room 11

Session Code	Title	Main Author
478	A Novel Data Harmonization and Fusion Strategy for Software Cost Estimation Under Limited and Uneven Data Conditions	Imen Chaari, Moataz Ghabri and Yessine Hadj Kacem
487	Tunisian Dialect Hate Speech and Abuse Detection with BERT-Based Models	Roua Torjmen and Kais Haddar
504	Machine Learning-Based Irony Detection and Sentiment Analysis in Arabic Tweets with Emojis	Maryam Abdulaziz Alkindi and Nesrine Ouled Abdallah
506	TFIDF to LLMs: A Comparative Analysis of Bengali Text Summarization Approaches and Techniques	Fahim Morshed, Mushfiquur Rahman, Md. Abdur Rahman and Sumon Ahmed
510	A sequence-modeling approach to cooperation in Public Goods Games via Multi-Agent Transformers	Imre Gergely Mali
153	Innovative Intellectual Multi-Agent System for Smart manufacturing	Galina Samigulina, Zarina Samigulina, Daulet Bekeshev and Diana Butakova

**G03-F: Intelligent Information and Engineering Systems**

Chair: Assoc. Prof. Franco Giustozzi

Thursday 4 September - 13:00 - 15:00

Online room 11

Session Code	Title	Main Author
521	Enhanced Software Bug Prediction Using Double-Stacked Ensembles and Halving Search Optimization	Ibrahim Mansour, Mouna Ben Said and Yessine Hadj Kacem
537	Hierarchical multimodal robust spam detection using Large Language Models and Convolutional Networks	Rania Mkhini Gahar, Adel Hidri, Olfa Arfaoui and Minyar Sassi Hidri
542	Adaptive Profiling of Computer Network Users with a Hybrid SARIMA-ANFIS Approach	Jakub Nowak, Marcin Korytkowski and Magdalena Scherer
566	MS-FSOA-LightGBM: Multi-Strategy Starfish Optimization Algorithm with LightGBM for Software Defect Prediction	Raja Oueslati, Mohamed Wajdi Ouertani, Asma Amdouni and Ghaith Manita
251	Optuna-Optimized Meta-Learner and Ensemble Learning Models for Student Performance Prediction	Amani Khalifa, Fatma Ben Said and Yessine Hadj Kacem

**G04-A: Industry Applications**

Chair: Assoc. Prof. Claudio Tomazzoli

Wednesday 10 September: 10:35 - 12:35

Room 4

Session Code	Title	Main Author
53	Design and Implementation of a Next-Generation Remote Lab for IoT and Industry 4.0	Piotr Czekalski, Krzysztof Tokarz, Godlove Suila Kuaban, Raivo Sell, Agris Nikitenko, Karlis Berkolds and Lukasz Lipka
388	Optimizing batch fermentation scheduling in smart breweries with artificial intelligence methods	Krzysztof Rewak
408	Siamese Network for Multi-View Driver Monitoring in Realistic Driving Settings	Raed Mimouni
174	CA-Buddy: System-driven Cloud Architecture Design Support with Structured State Management and Guided Decision Assistance	Ryosuke Kohita and Akira Kasuga
190	The practical implementation of 5G technology in the construction industry - an AI-assisted systematic literature review	Adrian Schröder and Sebastian Trojahn
91	Machine Learning Approach for Defect Prediction in Metal 3D Printing for Aerospace Applications	Yerlik Gabdulla, Md. Hazrat Ali, Frank Liou and Essam Shehab  This research is funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan, Grant No. AP26198879.

**G04-B: Industry Applications**

Chair: Assoc. Prof. Claudio Tomazzoli

Wednesday 10 September - 15:05 - 17:35  
Room 8

Session Code	Title	Main Author
205	A Heart Rate Variability-Based Approach to Identifying Comfort and Discomfort Areas in Real-World Urban Mobility with Multimodal Sensor Data	Ain Musyira Binti Mohd Zaidi, Narumon Jadram, Yuri Nishikawa and Midori Sugaya
229	Socially Acceptable XR Technology for Community Engagement on Cultural and Urban Development	Ana Veloso-Luis, Alexandre Silva and Rui Neves-Silva
231	Virtualizing Interior Spaces: A survey of 3D capturing tools for XR Visualization	Dragos Silion and Adrian Iftene
247	Data-Driven Transparency: Machine Learning and Social Network Analysis for Corruption Detection in Public Procurement	Ricardo Muñoz and Sebastián A. Rios
334	Enhancing Hospital Meal Safety: Integrating Adaptive Priority Dual Loss and False Negative Weighting in CNNs for Allergenic Food Recognition	Jiaxiang Mao, Wanli Ma and Dat Tran
412	Adapting to Natural Interaction: Exploring Gesture Control Innovations in XR with Apple Vision Pro	Panagiotis-Efstratios Chontas, Sabin Buraga and Adrian Iftene

G04-C: Industry Applications

Chair: Assoc. Prof. Claudio Tomazzoli

Thursday 4 September - 10:00 - 12:00

Online Room 12

Session Code	Title	Main Author
400	Smart Zoning for Enhanced Urban Safety: Crime Risk Assessment Using Unsupervised Learning	Sabina-Petruța Mureșan, Matei-Vasile Căpîlnaş and Adriana Mihaela Coroiu
417	Contrail: Realistic Railway Image Synthesis using ControlNet	Andrei-Robert Alexandrescu, Răzvan-Gabriel Petec, Alexandru Manole and Laura Dioșan
79	Assessment of the Applications of Artificial Intelligence in Predictive Models for Maritime Piracy Protection	Sonia Rozbiewska
163	3D Scene Reconstruction for Real-Time Video Editing. A Performance Study Conducted on Web Browsers	Victor Vlad and Sabin Buraga
451	An Attention-Based Multi-Modal Framework for Intelligent Elderly Care Using Activity and Acoustic Data	Raoudha Nouisser, Salma Kammoun Jarraya and Mohamed Hammami
524	Estimating olive leaf traits from spectrometer data using PROSPECT inversion methods with variable Refractive Index	Mouna Ben Said and Abdelaziz Kallel
433	Automated dimensional inspection of automotive components using computer vision through YOLO	Marcelo Okano, William Aparecido Celestino Lopes and Sergio Miele Ruggero
245	Is it the time to do Digital Twin HPC Data Center?	Marta Chinnici, Davide De Chiara, Giuseppe Santomauro, Luigi Telesca, Marco Antonini, Guido Guarnieri, Francesco Genovese and Giovanni Ponti

## Presentation Schedule – Invited Sessions

### ***IS01: Information Technology and Information Systems in Accounting, Finance and Controlling***

Chair: Assis. Prof, Arkadiusz Januszewski

Wednesday 10 September: 10:35 - 12:35

Room 5

Session Code	Title	Main Author
<b>77</b>	Multimodal Financial Sentiment for Stock Return Prediction	Petr Hajek, Josef Novotny, Michal Munk and Dasa Munkova
<b>177</b>	Methodology to extract full blockchain transactions in NFT Trading	Johannes Gomolka, Yoan Sapienza and Layth Sliman
<b>326</b>	Impact of Digital Transformation on Accounting Profession in the Opinions of Accounting Firms' Employees	Arkadiusz Januszewski and Angelika Pietrysiak
<b>333</b>	Usefulness of business simulations using CRM in the opinion of students of an economic and technical university	Kinga Krupcała
<b>612</b>	Developing students' digital competences in the era of digital transformation - a European perspective	Kinga Krupcała and Dorota Kurek
<b>716</b>	Contingencies of Usage Systems and Methods in Strategic Management Accounting	Anna Karmańska and Andrzej Piosik

***IS01: Information Technology and Information Systems in Accounting, Finance and Controlling***

Chair: Assis. Prof, Arkadiusz Januszewski

Friday 5 September - 13:00 - 15:00

Online room 8

Session Code	Title	Main Author
682	Prioritizing Office Work Automation: Strategic Factors and Functional Insights from Polish Enterprises	Dariusz Nowak and Marzena Remlein
683	Barriers to RPA Implementation in Accounting – Economic, Technological, Organizational, and Social Perspectives	Marzena Remlein and Dariusz Nowak
735	The costs of tax accounting digitalization from the perspective of Polish small enterprises	Grzegorz Bucior and Elżbieta Jaworska
755	The Use of Cloud Computing in the Operations of Accounting Firms	Natalia Buchalska-Sugajska, Aneta Kłos and Sandra Stellmacher

## ***IS02: Aspects of intelligent learning systems: e-Learning across various educational contexts***

Chair: Prof. Dr. Hiroshi Ueda

Thursday 11 September - 10:45 - 12:30

Room 2

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>38</b>	LearnAlng: Generative Artificial Intelligence to boost teaching and training in technical field	Simone Avogadri and Davide Russo
<b>55</b>	Evaluation of Students Behavioral Distraction in Virtual Classrooms	Manuela Petrescu, Emilia Pop and Tudor Mihoc
<b>605</b>	Multimedia annotations and modalities integration in vocabulary learning systems in pre-AI days: A review and appraisal	Mohammad Nehal Hasnine
<b>632</b>	Analysis of Learning Time Data using Generalized Linear Bayesian Item Response Theory	Ryota Kozakai
<b>396</b>	SEPT: Uncovering Student Difficulties through Emotional and Physical Trajectories during Online Assessments	Edouard Nadaud, Antoun Yaacoub, Benedicte Legrand and Lionel Prevost
<b>641</b>	Virtual Hydrogen, a virtual reality hydrogen visualization tool: from atomic to molecular orbitals	Hiroya Suno and Nobuaki Ohno
<b>474</b>	The Log Analysis Environment to Support Classroom Using CoursewareHub	Nobukuni Hamamoto, Kohichi Ogawa, Shigetoshi Yokoyama, Atsuko Takefusa and Kento Aida
<b>664</b>	Class-Imbalanced Dynamic Feature Selection for Dropout Prediction in Virtual Learning Environments	Ikram Gagaoua, Chahrazed Labba and Armelle Brun

***IS02: Aspects of intelligent learning systems: e-Learning across various educational contexts***

Chair: Prof. Dr. Hiroshi Ueda

Thursday 4 September - 13:00 - 15:00

Online room 5

Session Code	Title	Main Author
517	Question Answering System Based on Transformer Architecture Used to Interrogate Educational Resources in an Arabic E-Learning System	Souheyl Mallat
520	Towards an Approach for Recommending Learning Steps in an Online Course Based on the Ant Colony Algorithm	Souheyl Mallat and Ala Eddine Mouissaoui
572	Building Intelligent Educational Agents: A Scalable LLM-Based Framework for Assessment Generation	Rania Mkhinini Gahar, Badr Gorchene, Adel Hidri, Olfa Arfaoui and Minyar Sassi Hidri
164	Learning Course Improvement Tools: Search Has Led to the Development of a Maturity Model	Diana Zagulova, Marina Uhanova, Natalya Prokofyeva, Sabina Katalnikova and Viktorija Ziborova
405	Comparative analysis of fuzzy controllers and machine learning in adaptive e-learning systems	Marcin Szczepański and Jacek Marciniak
485	Ethical and Explainable Pedagogical Interventions: Emotion-Aware Transparent AI for Psychological Well-Being	Nour El Houda Ben Chaabene and Hamza Hammami

**IS03: RAG – Robust, Adaptive and Generative AI**

Chair: Prof. Aya Saad

Friday 12 September - 15:35 - 17:35

Room 4

Session Code	Title	Main Author
<b>167</b>	CoA-Text2OWL: Enhancing Ontology Learning with Chain-of-Agents Framework	Hussam Ghanem, Samir Jabbar and Christophe Cruz
<b>774</b>	Robust Inference of Fish Behaviour from Underwater Acoustic and Environmental Data	Dana Margareta King, Muriel Dunn, Sébastien Kerhervé, Kristbjörg Edda Jónsdóttir, Oscar Nissen and Aya Saad
<b>448</b>	Automated Matching of User Preferences and Product Components for Personalized Customization	Ryota Genda, Eiji Kamioka, Tan Phan Xuan and Chanh Tran
<b>745</b>	Towards Trustworthy Conversational Agents: A New Method for Hallucination Detection in NLG	Shadaab Ghani and Anne Håkansson
<b>603</b>	Content Safety and Response Quality in LLMs: A Data-Centric Refinement Approach	Chaima Njeh, Haïfa Nakouri and Fehmi Jaafar
<b>744</b>	Towards Using Prompt Engineering in Large Language Models to Assist Decision Making	Gloria Phillips-Wren and Anne Håkansson
<b>717</b>	A Robust, Domain-Aware Agentic System for Interactive Web-Based Aquaculture Simulation	Aya Saad and Finn Olav Bjørnson

**IS03: RAG – Robust, Adaptive and Generative AI**

Chair: Prof. Aya Saad

Thursday 4 September: 10:00 - 12:00

Online Room 2

Session Code	Title	Main Author
730	Assessing the influence of risk factors in Autism Spectrum Disorders (ASD) using Artificial Intelligence Techniques	Amira Rachah and Senda Slama
560	How scenarios can impact small models for QA task in education?	Amal Trifa and Chaima Chabir
297	Explainable Rule Application via Structured Prompting: A Neural-Symbolic Approach	Albert Sadowski and Jarosław Chudziak
750	A Multimodal Transformer with Adaptive GAN for Brain Disease Prediction	Rahma Kadri, Bassem Bouaziz, Mohamed Tmar and Faiez Gargouri
775	Effective AI Techniques for Analyzing Risk Factors in Autism Spectrum Disorder (ASD)	Amira Rachah, Saket Adhaua and Senda Slama
794	Integrating Deep Learning and Compartmental Models for Infectious Disease Dynamics: Modeling Mastitis Transmission	Amira Rachah

***IS04: Classification, forecasting and decision support***

Chair: Prof. Rafal Deja

Thursday 4 September - 13:00 - 15:00

Online Room 6

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>143</b>	Classifying Light States in the Phasmophobia Game. The Impact of Image Resolution and Preprocessing on Multi-layer Perceptron Performance	Małgorzata Przybyła-Kasperek, Tomasz Markuszewski and Rafal Deja
<b>193</b>	Intelligent Modeling of Soil Moisture Variability Using Remote Sensing and Spiking Neural Networks	Soukaina El Maachi, Saadane Rachid and Abdellah Chehri
<b>195</b>	Enabling Real-Time, Explainable DDoS Mitigation via On-Premise Large Language Models and Flow Analysis	Henok Wondimu, Ali Alfatemi, Mohamed Rahouti, Abdellah Chehri, Paweł Weichbroth and Nasir Ghani
<b>236</b>	A Text Classification Approach to Enhancing Cyber Threat Detection	Matei-Vasile Căpîlnaş and Adriana Mihaela Coroiu
<b>276</b>	Properties of plug-in predictors in case of some model misspecification in small area analyses	Małgorzata Krzciuk

***IS04: Classification, forecasting and decision support***

Chair: Prof. Rafal Deja

Friday 5 September - 10:00 - 12:00

Online Room 4

Session Code	Title	Main Author
501	Large Language Model for Requirements Classification: An Ensemble Approach	Tawfeeq Alsanoosy
638	Bandit Recombination: The Preliminary Study of a Novel Genetic Algorithm Operator	Arkadiusz Nowakowski, Wojciech Wieczorek and Łukasz Strąk
657	An Innovative Method for Improving Sentiment Analysis in Large Language Models	Omar Haddad and Mohamed Nazih Omri
700	Unleashing the power of simulation-based inference: an application to complex stochastic processes.	Michele Di Giovanni, Ciro Napolino, Stefano Marrone and Fiammetta Marulli
802	A Hybrid Iris-Voice Biometric Framework for Robust Identification in the Presence of Ocular Impairments	Fatma Mallouli

**IS05 Knowledge and data engineering in medicine and health care**

Chair: Assoc. Prof. Paja Wieslaw

Wednesday 10 September - 15:05 - 17:35

Room 2

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>361</b>	VITAL: A Design Framework for Prototyping Health Behavior Change Applications	Ciprian Amaritei and Adrian Iftene
<b>427</b>	AI-Powered Fast Screening for Neoplastic Diseases in the Chilean Population	Martin Sepulveda, Constanza Contreras, Patricio Wolff, Luciano Gonzalez and Rodrigo Figueroa
<b>778</b>	Extracting Behavioral Rules from Health Survey Data with Interpretable Models	Piotr Lasek
<b>858</b>	Towards Computer Aided Transformation of Spoken Text to Cued Speech for Speech Therapy	Krzysztof Pancerz, Piotr Kulicki, Renata Kołodziejczyk, Aleksandra Borowicz, Julianna Habdank and Krystian Gułaś
<b>256</b>	Dimensionality Reduction for capturing the multifaceted nature of Oncogeriatric Patients: Enhancing ML Interpretability	Constanza Contreras, Patricio Wolff, Gabriel Martinez and Gonzalo Navarrete
<b>321</b>	Forecasting Tacrolimus levels: A time series analysis using deep learning and statistical methods	Rares Arvinte and Diana Trandabat

***IS05 Knowledge and data engineering in medicine and health care***

Chair: Assoc. Prof. Paja Wieslaw

Thursday 4 September - 10:00 - 12:00

Online room 12

Session Code	Title	Main Author
58	OntoMed-KGTransformer: A Neuro-Symbolic Framework for Clinical Knowledge Fusion	Abdelweheb Gueddes, Wyssem Fathallah and Mohamed Ali Mahjoub
184	Visual Analysis of Evolutionary Search for Explainable Models of Epidemic Propagation	Krzysztof Michalak

## ***IS07 Digitalization and Knowledge Management in Health Data Acquisition and Processing***

Chair: Prof. Ralf Seepold

Friday 12 September - 10:30 - 12:30

Room 4

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>16</b>	Development of CuTouch: A Fingertip Somatosensory Training System Applying Multimodal Vibrotactile Stimulation	Aaron Raymond See, Aaron Benjmin Alcuítas, Thad Jacob Tiong, Vence Jumar Sasing, Yu-Sheng Lin, Ralf Seepold and Natividad Madrid Martinez
<b>331</b>	Establishment of normal ranges for N-acetyl aspartate, choline, creatine, myo-inositol, and lipids/lactate in healthy brain tissue using proton magnetic resonance spectroscopy	Yesid Cardozo Vélez, Carlos Felipe Hurtado Arias, José William Martínez, Ralf Seepold and Wilhelm Daniel Scherz
<b>644</b>	The Impact of Communicative Strategies on ChatGPT Interaction and Text Quality: A Comparative Study	Violetta Palenova and Anatoly Voronin
<b>669</b>	Digital assistants for outpatient care: benefits of intelligent connected assistive systems for caregivers and elderly people	Matthias Gaßner, Andreas Hechtl, Ulrike Nigg, Stefanie Schmid, Sophia Yagci and Petra Friedrich
<b>731</b>	Feasibility and Signal Quality Evaluation of a Sleep Apnoea Detection System Using Wearable Sensor Technology	Maksym Gaiduk, Angel Serrano Alarcón, Natividad Martinez Madrid and Ralf Seepold

**IS07 Digitalization and Knowledge Management in Health Data Acquisition and Processing**

Chair: Prof. Ralf Seepold

Friday 12 September - 15:00 - 17:00

Room 3

Session Code	Title	Main Author
732	Sleep-Driven Haptic Stimulation for Resilient Somatosensory Rehabilitation	Ralf Seepold, Natividad Martínez Madrid, Aaron Raymond See, Tsung Lu Michael Lee, Maksym Gaiduk, Daniel Velez and Wilhelm Daniel Scherz
746	Development of a Research-Oriented Application for the Acquisition, Analysis, and Export of Sleep Metrics from Smartwatches	Fátima Morales Vázquez, Ralf Seepold, Daniel Vélez, Marta Sylvia del Río Guerra and Natividad Martinez Madrid
788	Systematic Review Protocol on Mobile Physiological Monitoring Systems for Driver Fatigue Detection	Wilhelm Daniel Scherz, Ángel Serrano Alarcón, Maksym Gaiduk, Andrei Boiko, Rodion Kraft, Ann Nosseir, Natividad Martinez Madrid, Juan Antonio Ortega and Ralf Seepold
793	A System Architecture for AI-Driven Market Entry Strategy Generation Using Large Language Models	Diana Scherz, Juan Antonio Ortega, Marcel Wieland and Wilhelm Daniel Scherz
800	Applying Machine Learning to Diagnose Impulse Control Disorders in Youth: Towards a Scalable Study Design	Wilhelm Daniel Scherz, Maksym Gaiduk, Jorge Avila-Campos, Ralf Seepold, Paula Herrera, Natividad Martinez Madrid and Julian David Echeverry
826	Use of Survival Analysis and Machine Learning in Stage III Non-Small Cell Lung Cancer	Alba Carbonell-Gucema, Paloma Sosa Fajardo, Juan A. Ortega, Inés Ollinger Casin and José Luis López-Guerra

***IS07 Digitalization and Knowledge Management in Health Data Acquisition and Processing***

Chair: Prof. Ralf Seepold

Friday 5 September - 13:00 - 15:00

Online room 14

Session Code	Title	Main Author
134	Self-Sovereign Digital Identity in Blockchain based Systems for E-health Cards Management	Dorsaf Salah, Sami Mnasri and Hanen Idoudi
771	Advantages of scoping reviews in studies about technological implementations on medical interventions	Daniel Velez, Juan Antonio Ortega, Natividad Martinez Madrid and Ralf Seepold
514	Explainable Approach For Early Diagnosis of Parkinson's Using Audio Tracks	Lerina Aversano, Martina Iammarino, Antonella Madau, Debora Montano and Chiara Verdone

***IS08 The 2nd edition of Leveraging Digital Twins in Healthcare (LDTH) Invited Session***

Chair: Dr. Laura Verde

Wednesday 10 September - 10:35 - 12:35

Room 7

Session Code	Title	Main Author
783	Towards a pre-surgery clinical decision support system	Stefano Marrone, Roberta De Fazio, Rossella Picone and Laura Verde
786	Toward Paediatric Digital Twins: STELLA-Segmentation Tool for Enhanced Localisation and Labelling of diagnostic Areas	Roberta De Fazio, Maria Stella de Biase, Pierluigi Marzuillo, Paola Tirelli, Fiamemtta Marulli, Stefano Marrone and Laura Verde
787	Extracting Knowledge from Data in Lightweight Digital Twin Construction	Laura Verde, Maria Stella de Biase, Giusy D'Angelo, Roberta Petruolo, Paola Tirelli, Stefano Guarino, Anna Di Sessa, Pierluigi Marzuillo and Stefano Marrone

**IS08 The 2nd edition of Leveraging Digital Twins in Healthcare (LDTH) Invited Session**

Chair: Dr. Laura Verde

Thursday 4 September - 13:00 - 15:00

Online room 14

Session Code	Title	Main Author
706	AI-Driven Insights into Microbial Biomarkers for Colorectal Cancer Progression	Grazia Gargano, Geatano Settembre and Nicoletta Del Buono
711	Towards a Digital Twin for Voice Pathology: Analyzing Microphone Effects on Acoustic Feature Extraction	Jan Vrba, Jakub Steinbach, Tomáš Jirsa and Zuzana Urbániová
832	Interpretable vs. Post-Hoc Explained Models for Digital Twin Applications in Clinical Forecasting: A Multiple Sclerosis Case Study	Salvatore Giugliano, Ilaria Basile and Giovanna Sannino

**IS09: Networks for Innovation, Knowledge Creation and Sharing**

Chair: Prof. Hironori Takeuchi

Thursday 11 September - 13:30 - 15:00

Room 6

Session Code	Title	Main Author
17	Knowledge ComposTer: A Platform for Reusing Unused Knowledge Fragments to Support Daily Document Creation	Kentaro Takashima and Hiroaki Ikuta
45	SBA—Seven Samurai Analysis by ArchiMate	Shuichiro Yamamoto
46	Diffusion Model of Anti-Patterns for Machine Learning Projects	Hironori Takeuchi, Haruhiko Kaiya, Hiroyuki Nakagawa and Shinpei Ogata
59	Development of Body of Knowledge of Software Engineering Soft Skills	Saya Suzuki and Atsuo Hazeyama
66	Persona-driven automated extraction of non-functional requirements using LLM agents	Kazuhiro Mukaida, Shinpei Ogata and Kozo Okano
88	New Approach to the KJ Method Using Brain Models: Idea Generation Inspired by Visual Information Processing and Hegel's Dialectics	Jun Munemori

***IS09: Networks for Innovation, Knowledge Creation and Sharing***

Chair: Prof. Hironori Takeuchi

Thursday 11 September - 15:35 - 17:35

Room 6

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>110</b>	Rating the cost of quality in use for a business system using KAOS model	Haruhiko Kaiya, Takeru Nakamura, Shinpei Ogata, Hiroyuki Nakagawa and Hironori Takeuchi
<b>111</b>	Detection and Classification of Concept Drift in Streaming Process Discovery	Hisanori Watanabe and Hiroyuki Nakagawa
<b>140</b>	Truth in Trees: A Multilayered Linguistic Framework for Automated Fact-Checking with AI-Driven Reasoning	Dimitrios P. Panagoulas, Maria Virvou and George A. Tsihrintzis
<b>203</b>	Requirements Analysis of a High-Precision Search Function for Reusable RPA Bot Development	Ayaki Uchida and Hiroyuki Nakagawa
<b>241</b>	Proposal and Development of Tools for Visualizing the Relationship Between Childcare Records and Children's Qualities and Abilities Using Generative AI	Shirabe Yuji, Naoki Kato and Atsuo Hazeyama

**IS10: Cyber Security and Big Data**

Chair: Dr. Francesco Mercaldo

Friday 12 September - 10:15 - 12:00

Room 2

Session Code	Title	Main Author
129	Security audit of Internet of Things home automation system	Krzysztof Tokarz, Piotr Mączka, Dariusz Mrozek and Piotr Czekalski
291	Mapping Privacy Properties of Searchable Encryption to Leakage Profiles	Manuela Horduna
386	Java Source Code Vulnerability Detection Using Large Language Model	Dhika Rizki Anbiya, Teddy Ferdinan and Grzegorz Kołaczek
663	IMAGE CAPTIONING WITH TRANSFORMER BASED ENCODER-DECODER MODELS	Akey Sungheetha and Ezil Sam Leni A

**IS10: Cyber Security and Big Data**

Chair: Dr. Francesco Mercaldo

Friday 5 September - 10:30 - 12:30

Online room 11

Session Code	Title	Main Author
534	Secure and Efficient Big Data Collection with Differential Confidentiality and Machine Learning	Thouraya Gouasmi, Siwar Laswed and Ahmed Hadj Kacem
270	Enhanced Privacy-Preserving Big Data Analytics over Clouds with Decentralized SOLID Personal Online Datastores	Alfredo Cuzzocrea and Islam Belmerabet
651	Deep Learning-Based Financial Forecasting with Post-Quantum Cryptographic Integration: A CNN-LSTM and F2N-ECC Hybrid Framework	Fatma Mallouli
723	Explainable AI-based innovative models for intrusion detection in Big Data WSN	Naima Samout, Thouraya Gouasmi and Nejeh Nasri
829	Cat Swarm Optimization to Cybersecurity and GANs-based Defence Solutions Enhancement.	Fiammetta Marulli, Fabio Lancellotti and Pierluigi Paganini
447	Enhancing IoT Intrusion Detection Performance Using Autoencoder-Based Feature Optimization and K-Means Clustering	Zeru Kifle Kebede and Petr Hajek

**IS11: Multi-Criteria Decision-Analysis methods – theory and their applications**

Chair: Prof. Wojciech Sałabun

Thursday 11 September - 13:30 - 15:00

Room 7

Session Code	Title	Main Author
22	On Depth of Deterministic and Nondeterministic Decision Trees for Decision Rule Systems from Closed Classes	Kerven Durdymyradov and Mikhail Moshkov
538	Application of the AHP Method in the Study of the Quality of Electronic Banking Websites of Polish Banks in 2023	Marek Zborowski
795	A hybrid MCDA framework for sustainability assessment: Integrating fuzzy normalization and weight reidentification nased on external rankings	Bartłomiej Kizielewicz and Aleksandra Bączkiewicz
803	Evaluating relationship functions in the RANCOM method and their effects on criteria weighting accuracy	Jakub Więckowski, Przemysław Różewski and Wojciech Sałabun
804	Sensitivity of RIM, SPOTIS, and COMET methods under criteria removal process	Jakub Więckowski, Przemysław Różewski, Aleksander Masojć and Wojciech Sałabun
792	WEICOM: A Similarity-Based Method for Weight Compromise	Bartłomiej Kizielewicz, Aleksander Masojć and Jarosław Wątróbski

**IS11: Multi-Criteria Decision-Analysis methods – theory and their applications**

Chair: Prof. Wojciech Sałabun

Thursday 4 September - 10:00 - 12:00

Online room 7

Session Code	Title	Main Author
758	How to Tame a Multi-Armed Bandit? A Multi-Criteria Decision Analysis Approach to Bayesian Adaptive Exploration in Non-Stationary Environments	Kamil Bortko, Michał Gudowicz, Szymon Śniegowski and Adrianna Świder
790	Multicriteria seed selection and evaluation of spreading parameters for Linear Treshold Model	Piotr Bartków, Kamil Bortko and Jarosław Jankowski
805	A robust framework for sustainable vehicle assessment: Integrating FN-TOPSIS with subjective weighting methods	Bartłomiej Kizielewicz, Rafał Pawlak, Michał Gandor and Wojciech Sałabun
806	A novel RANCOM-RAM-based framework for city assessment based on cost of living	Andrii Shekhovtsov, Michał Gandor, Rafał Pawlak and Wojciech Sałabun
277	Usability and Frustration in Using Adaptive Functions for Decision Making: A User Study	Shuja Mughal, Jens Weber and Assad Abbas

**IS11: Multi-Criteria Decision-Analysis methods – theory and their applications**

Chair: Prof. Wojciech Sałabun

Thursday 4 September - 13:00 - 15:00

Online room 4

Session Code	Title	Main Author
817	Is It Possible to Standardize Diagnostic Decision-Making in Yoga Therapy for LBP? A Study Using AHP, BWM, RANCOM, and BCM	Olga Apiecionek, Bogna Listewnik and Bartłomiej Kizielewicz
818	A Hybrid MCDA Framework for Quality of Life Assessment: Integrating Objective Weighting and ESP-SPOTIS with a Compromise C-COMET Model	Kirill Rodin and Bartłomiej Kizielewicz
819	Supplier Evaluation with MCDA: Ranking Stability and Weight Adjustment through Copeland and SITW	Amelia Trębaczekiewicz and Bartłomiej Kizielewicz
820	Methodological comparison of MCDA techniques in energy efficiency assessment: A case study of European Countries	Dominik Molenda and Bartłomiej Kizielewicz
308	Dimensionality Reduction Method for Fuzzy Interval Data Using Deep Learning	Gakuei Sugiura and Mika Sato-Ilic
341	An intention-based recommendation approach	Noura Labidi, Manel Fourati and Rafik Bouaziz
306	Towards a framework for assessment of Learning	Ghada Ben Khalifa, Lilia Cheniti Belcadhi and Alicia García-Holgado

**IS11: Multi-Criteria Decision-Analysis methods – theory and their applications**

Chair: Prof. Wojciech Sałabun

Thursday 11 September - 15:35 - 17:35

Room 6

Session Code	Title	Main Author
<b>837</b>	Data-Centric Water Safety Monitoring: A Machine Learning Pipeline with Intelligent Feature Selection for Potability Prediction	Yas Barzegar, Atrin Barzegar, Francesco Bellini, Stefano Marrone, Patrizio Pisani and Laura Verde
<b>838</b>	Measuring Software Product Quality Based on Fuzzy Inference System Techniques in ISO Standard	Atrin Barzegar, Yas Barzegar, Laura Verde, Francesco Bellini, Patrizio Pisani and Stefano Marrone
<b>856</b>	Weighted Depth of Deterministic and Nondeterministic Decision Trees for Recognition Properties of Decision Rule Systems	Kerven Durdymyradov and Mikhail Moshkov
<b>857</b>	An MCDA-based decision-making framework for evaluating virtual bike-sharing station locations with spatial data	Michał Gudowicz, Szymon Śniegowski and Wojciech Sałabun
<b>859</b>	Towards Robust Objective Decision-Making: Sensitivity Analysis and Comparative Evaluation of the EORS Approach	Bartosz Paradowski
<b>861</b>	Comparison of Complexity of Regular and Oblivious Decision Trees for Decision Tables with Many-valued Decisions from Closed Classes	Azimkhon Ostonov and Mikhail Moshkov

***IS12: Intelligent Systems in advancing sustainable solutions, management and strategies***

Chair: Prof. Dr. inż. Adam Sulich

Wednesday 10 September - 15:05 - 17:35

Room 7

Session Code	Title	Main Author
7	The essence of the use of business analytics and business intelligence systems in supporting managerial decision-making in organisations	Małgorzata Oleś-Filiks
76	Building a Data Trust: Fine(r)-Grained Attribute Based Policy Machine	Sascha Kober, Michael Koch, Andre Ludwig and Bogdan Franczyk
230	Sky is the Limit: Exploring Solar Photovoltaic Nowcasting with Sky Images, Transfer Learning, and Data Augmentation	Tobias Gentner, Moritz Knoell, Jannic Adam, Andreas Theissler and Marco Klaiber

## ***IS12: Intelligent Systems in advancing sustainable solutions, management and strategies***

Chair: Prof. Dr. inż. Adam Sulich

Thursday 11 September - 10:45 - 12:30

Room 5

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>530</b>	Enhancing Urban Traffic Flow: An AI-Driven Traffic Light Management System	Bukasa Muyombo and Hima Vadapalli
<b>777</b>	AI as a shield against cyberattacks - employee awareness in the EU	Justyna Żywiołek, Marek Matulewski and Józef Frąś
<b>798</b>	Creating Green Jobs in ICT: Opportunities and Challenges	Adam Sulich and Łukasz Kozar
<b>271</b>	Last-Mile Simulation Approaches for Sustainable Delivery in Urban Outskirts: A Review	Viola Suess, André Ludwig, Bogdan Franczyk and Benjamin Gaunitz
<b>33</b>	Optimization of Energy Consumption in Data Centers Using Deep Learning: A Systematic Literature Review	Nicolas Drain and Rebecca Deneckere
<b>34</b>	Towards Cleaner Skies : Transforming Air Quality Prediction in Smart Cities with Artificial Intelligence	Pilleux Raphael and Rebecca Deneckere

**IS12: Intelligent Systems in advancing sustainable solutions, management and strategies**

Chair: Prof. Dr. inż. Adam Sulich

Friday 5 September - 10:00 - 12:00

Online room 9

Session Code	Title	Main Author
23	Impact of steering parameters in mushroom-picker heuristics for optimizing shelf space allocation with combined vertical and horizontal product categorization	Kateryna Czerniachowska and Krzysztof Lutosławski
289	The use of feature selection methods in the materiality analysis of banks' ESG data	Hanna Sikacz, Anna Fabijańska and Dorota Teneta
429	An Overview of Blockchain-Enabled Federated Learning Architectures for Agricultural Applications	Fatma Marzougui, Mohamed Elleuch and Monji Kherallah
452	CAMSI: Context-Aware Multi-Source Infrastructure-based Trust Model for Cooperative ITSs	Rihab Abidi, Nadia Ben Azzouna, Nabil Sahli, Wassim Trojet and Ghaleb Hoblos
173	Integrating Ensemble Methods for Dynamic Obstacle Avoidance in Autonomous Vehicle Navigation	Leila Haj Meftah and Sirine Mnejja
481	Identification of the supply of business incubation services specializing in artificial intelligence (AI) and the Internet of Things (IoT) for SMEs in Lower Silesia.	Grzegorz Krzos and Jakub Michał Kowalski

## ***IS12: Intelligent Systems in advancing sustainable solutions, management and strategies***

Chair: Prof. Dr. inż. Adam Sulich

Friday 5 September - 13:00 - 15:00

Online room 6

Session Code	Title	Main Author
<b>41</b>	AI Recommendation Systems Supporting the Circular Economy and Zero-Waste Practices	Justyna Żywiółek and Mariusz Kruczek
<b>737</b>	Multi-objective optimization model for routing flexibility and long-term EV sustainability	Paweł Hanczar and Izabela Rudek
<b>123</b>	Heuristics for the flexible job shop scheduling problem with a single active workplace on a machine in which different workplaces are available	Kateryna Czerniachowska
<b>144</b>	Assessing the impact of dataset quality on the performance of artificial intelligence models in automatic waste classification	Adam Chomicki, Filip Wójcik and Helena Dudycz
<b>847</b>	Artificial Intelligence in Academic Research: A Comparative Study of Scopus AI and Web of Science Research Assistant	Letycja Soloducho-Pelc and Adam Sulich

***IS13: Interdisciplinary Approaches in Data Science Practice (IADSP 2025)***

Chair: Prof. Ivan Luković

Thursday 11 September - 10:45 - 12:30

Room 4

Session Code	Title	Main Author
226	LiftMate: Gym Exercise Posture Correction and Classification	Ubaid Kagdi and Dustin Van Der Haar
237	Comparison of Conditional and Non-Conditional Data Augmentation Approaches with Generative Adversarial Networks	Timo König, Akash Mangaluru Ramananda, Fabian Wagner, Markus Kley and Marcus Liebschner
248	Multi Objective Feature Selection for Prognostics and Health Management Applications	Fabian Wagner, Akash Mangaluru Ramananda, Markus Kley and Marcus Liebschner
292	Visual Apps in Data Science Education: Lowering the Threshold for Undergraduate Students	Peter Oliver Ruhland, Timo Gerstenhauer, Christian Koot and Andreas Theissler

**IS13: Interdisciplinary Approaches in Data Science Practice (IADSP 2025)**

Chair: Prof. Ivan Luković

Friday 5 September - 10:00 - 12:00

Online room 10

Session Code	Title	Main Author
258	Efficient Operation Definition for Screw Compressors with Sensor Configuration and Feature Engineering Techniques	Akash Mangaluru Ramananda, Niels Ockert, Patrick Harfmann, Areeb Ansari, Holger Zinke, Tim Dahmen and Markus Kley
310	Multi-Fault Diagnosis of Screw Compressors with Ensemble Learning: A Data-Driven Approach for Condition Monitoring	Akash Mangaluru Ramananda, Niels Ockert, Patrick Harfmann, Holger Zinke and Markus Kley
323	Leveraging Generative AI for Spatial Data Preparation	Ilona Pawełoszek
574	Exploring Research Trends in Blockchain and Crypto-Assets Using Various Sources	Piotr Stolarski and Włodzimierz Lewoniewski
608	Quality Measures for Data Visualization: A Case Study of Polish Wikipedia	Szczepan Górtowski and Włodzimierz Lewoniewski

***IS14: Interdisciplinary Approaches in Digital Transformation (IADT 2025)***

Chair: Prof. Ralf-Christian Härting

Thursday 11 September - 15:35 - 17:35

Room 9

Session Code	Title	Main Author
25	Digital Twin of a Frequency Converter of an Asynchronous Machine for a Real Time Prediction in Stationary Operating Points Utilizing Machine Learning Methods	Lennart Kopp, Jan-Niklas Molan, Benjamin Oppold, Lukas Steidle and Markus Kley
27	Differentiated or deficient? Perspective on multidimensional maturity models – Evidence from a structured literature review	Alexander Sprengel and Patrick Ulrich
212	Evaluation and Discussion of Virtual Sensor for Torque Prediction in Induction Machines under Dynamic Conditions	Lukas Steidle, Lennart Kopp, Daniel Proksch and Markus Kley
257	Dynamic Descriptive Analytics in Football: A Retrieval-Augmented Approach for Structured Data	Ioannis Tzikas, Samuel Didovic, Felix Gerschner, Manfred Rössle, Andreas Theissler and Marco Klaiber
287	Lawyering Up: An Evaluation of Large Language Models' Potential for Transforming Business Law Practice	Sascha Schweitzer, Navid Sheikh Mouchegani and Markus Conrads

**IS14: Interdisciplinary Approaches in Digital Transformation (IADT 2025)**

Chair: Prof. Ralf-Christian Härting

Friday 12 September - 10:30 - 12:30

Room 6

Session Code	Title	Main Author
<b>567</b>	Investigating Generative AI Integration in Solopreneurship: A Mixed-Methods Study on Business Initiation	Joerg Bueechl, Tim Straub, Yanwen Xue and Sebastian Bunnenberg
<b>579</b>	Embedding AI Governance in Organizations: A Multi-Level Approach to Responsible AI Use	M. Murtaza Sayan and Joerg Bueechl
<b>614</b>	Determinants of a successful Establishment of a Cyber Security Culture in Enterprises	Lena Bundschuh, Daniel Thorn, Ralf-Christian Härting, Christopher Reichstein, Hironori Takeuchi and Jo Scheppach
<b>616</b>	Cyber Resilient Employee – Determinants and Definition	Tim Warzawa and Ralf-Christian Härting
<b>617</b>	The Impact of Effective Risk Management on the Cyber Performance of Enterprises	Ralf-Christian Härting, Joerg Bueechl, Philipp Anderlohr and Lukas Betz

**IS15: Smart Generative AI and Data Visualization Technologies**

Chair: Prof. Dr. Cesar Sanin

Wednesday 10 September - 10:35 - 12:35

Room 9

Session Code	Title	Main Author
435	Enhancing Flood Prediction Reliability with RAFT-VLLM: A Retrieval Augmented and Fine-Tuned VLLM Approach for Geospatial Analysis	Sebastian Ramirez V, Cesar Sanin, Md Rafiqul Islam, Kushal Pokhrel, Md. Kowsar Hossain Sakib and Edward Szczerbicki
390	A Hybrid ML Algorithm Trading Model combining Sentiment, Technical Indicator and Risk Management	Sacheen Shrestha, Cesar Sanin, A B M Mehedi Hasan, Sebastian Ramirez V and Edward Szczerbicki
425	Formula One Track Classification by Machine Learning Applied on Car Engine Sound	Igone Moraes Quilez and Manuel Graña
215	A Comparative Case Study on Migrating a Modular Monolith Java App to IaaS and PaaS on Azure and AWS	Florin Olariu, Andrei Mosor and Lenuta Alboaie
466	Sustainable Cloud Migration: An Analysis of Environmental Impacts and Strategic Optimizations	Florin Olariu, Andrei Haivas and Lenuta Alboaie

**IS15: Smart Generative AI and Data Visualization Technologies**

Chair: Prof. Dr. Cesar Sanin

Thursday 4 September: 10:00 - 12:00

Online room 3

Session Code	Title	Main Author
<b>249</b>	AI-Driven Context Interpretation in Influencer Marketing with ChatGPT Pro: Exploring Semantic Boundaries	Dorota Jaguścik and Edyta Gołąb-Andrzejak
<b>356</b>	Med Herb Lens: A Prototype AI App for Medicinal Plant Identification	Trien Tran, Fareed Ud Din, Ljiljana Brankovic, Cesar Sanin and Susie Hester
<b>493</b>	A Systematic Literature Review on Cybersecurity Ontology	A B M Mehedi Hasan, Ljiljana Brankovic, Cesar Sanin and David Paul
<b>599</b>	On the clustering of countries responses against COVID-19 using multivariate epidemiological data	Murat Razi and Manuel Graña
<b>686</b>	Location-Aware Deep Neural Network for Predicting Indoor 5G RSSI and CQI Using Drone-Based External RF Sensing	David Hason Rudd, Cesar Sanin, Koh Ming En, Xingyi Gao, Mehedi Hasan, Md Rafiqul Islam, Xianzhi Wang, Angela Huo and Guandong Xu

**IS16: The 9th Special Session on Eye Movement Data Processing and Analysis**

Chair: Prof. Katarzyna Harezlak & Prof. Pawel Kasprowski

Friday 12 September -15:00 - 17:00

Room 5

Session Code	Title	Main Author
695	Which eye movements indicate reader comprehension of agency?	Will Lingle
359	Eye-movement patterns reflecting mental fatigue while working in augmented reality	Aleksandra Psyllos, Jacek Matulewski, Adrian Falkowski, Albert Łukasik, Izabela Grzankowska, Joanna Karłowska-Pik, Bartosz Godek and Dawid Pietrykowski
597	Examining the Influence of PSO Detection on Eye-Tracking During Reading	Birtukan Adamu Birawo, Pawel Kasprowski and Mohd Faizan Ansari
699	A New Approach for Biometric Identification Based on Eye Movement Signal	Katarzyna Harezlak and Ewa Pluciennik
330	3PS: Periodical Partial Policy Sharing for Distributed Cooperative Multi-agent Reinforcement Learning	Ke Zhang, Dandan Zhu, Xiaoning Zhao and Toshiharu Sugawara

**IS16: The 9th Special Session on Eye Movement Data Processing and Analysis**

Chair: Prof. Katarzyna Harezlak &amp; Prof. Pawel Kasprowski

Friday 5 September - 13:00 - 15:00

Online room 5

Session Code	Title	Main Author
309	Extraction of binocular microsaccade components using monocular measurements of eye tracking	Rin Takanashi and Minoru Nakayama
694	Dynamic Time Warping Analysis of Smooth Pursuit Eye Movements for Dementia Detection	Mamoru Hiroe, Yutaka Kawaguchi, Kentaro Takemura, Yujia Zheng, Hisatomo Kowa and Takashi Nagamatsu
304	Semantic Feedback Processing with LLMs: Automating Issue Detection and Prioritization in DevOps	Ciprian Paduraru, Miruna Andreea Zavelca and Alin Stefanescu
411	Automated Generation of Cybersecurity Response Playbooks via Large Language Models	Ciprian Paduraru, Bogdan Dumitru and Alin Stefanescu

**IS17: AI, Robotics, and Digital Technologies for Medical/Healthcare Systems**

Chair: Prof. Hiroharu Kawanaka

Wednesday 10 September - 10:35 - 12:35

Room 6

Session Code	Title	Main Author
69	Development of a Depression Recognition System Using Electroencephalogram (EEG) Signals	Jasel Ann Parayao and Nicanor Jr Roxas
252	Nursing Care of People with Dementia for Toilet Use by Using Large Language Models	Haruna Ishizaka, Yuya Sato and Shingo Kuroiwa
268	Aligning AI Reporting with Medical Standards: insights from Care2report UI design	Vera Karssies, Roy Schoonwater, Rebecca Deneckere, Elena Kornyshova, Sjaak Brinkkemper and Sandra van Dulmen
708	Self-Extubation Early Warning via Autoencoder Anomaly Detection and a Novel Simulator for Quantitative Evaluation	Yuya Sakaguchi, Takayuki Fujita and Syoji Kobashi
709	Predicting Loneliness Using Machine Learning and Self-Logged Behavioural Data	Mohamed Bennasar, Dmitri Katz, Avelie Stuart, Amel Bennaceur, Daniel Gooch, Arosha Bandara, Blaine Price and Bashar Nuseibeh
710	Image-to-Biomarker Prediction of CSF Amyloid- $\beta$ via Multimodal Deep Learning on MRI and Brain Perfusion SPECT	Riku Hasegawa and Syoji Kobashi

**IS17: AI, Robotics, and Digital Technologies for Medical/Healthcare Systems**

Chair: Prof. Hiroharu Kawanaka

Wednesday 10 September - 15:05 - 17:35

Room 9

Session Code	Title	Main Author
<b>332</b>	Multiple Instance Learning Using Reduced Deep Learning Model For Glioma Subtype Classification	Satoshi Shirae, Shyam Debsarkar, Hiroharu Kawanaka, Bruce Aronow and Surya Prasath
<b>351</b>	Using EEG and gaze tracking for verifying procedure usability	Fabio Miranda and Rossi Setchi
<b>698</b>	Evaluation of Machine Learning Models and Feature Representations for 12-Lead Electrocardiogram Classification in School-age Children	Yusuke Sugitani, Shuhei Toba, Yoshihide Mitani, Hiroyuki Ohashi, Hirofumi Sawada, Yutaka Otobe and Hiroharu Kawanaka
<b>703</b>	MOVEXor: Motion-Video Attention Explainer for Low Back Pain Classification	Zebang Liu, Yulia Hicks and Liba Sheeran
<b>704</b>	Deep Learning for Quality Assessment of Echocardiographic Images	Shuping Kang, Rossitza Setchi and Yulia Hicks
<b>729</b>	Analysis of the Factors Related to the Total Fertility Rate and the Rate of Increase in Municipalities in Japan Using Machine Learning	Takumi Kitajima and Hiroharu Kawanaka
<b>311</b>	Vision Transformers for Histopathological Image Classification with Efficient Head Pruning	Seddik Boudissa, Shyam Sundar Debsarkar, Hiroharu Kawanaka, Bruce Aronow and V. B. Surya Prasath

**IS17: AI, Robotics, and Digital Technologies for Medical/Healthcare Systems**

Chair: Prof. Hiroharu Kawanaka

Thursday 4 September - 10:00 - 12:00

Online room 14

Session Code	Title	Main Author
707	Enhancing Clinical Decision Support with LLMs: A Feasibility Study Integrating CoT, RAG, and QLoRA	George Matthew and Yulia Hicks
455	Med-Agent: A Hybrid AI Agent for Multimodal Cancer Diagnosis	Wojciech Dąbrowicki, Andrzej Rusiecki and Lukasz Jelen
99	Dynamic Reward-Based Deep Reinforcement Learning Algorithm for UAV Path Planning in Large-Scale Environments	Raja Jarray, Imen Zaghbani and Soufiene Bouallègue
192	Depression Detection via Dual Audio Streams and Transformer Fusion	Boutheina Ben-Ismaïl, Wyssem Fathallah, Mohamed Hamroun, Bassem Ben Salah and Hedi Sakli
165	AI as a Tool for Untangling Urban Complexities	Ayse Glass, Jörg Rainer Noennig and Balazs Cserpes

***IS18 Computational Systems and Synthetic Biology***

Chair: Dr Eugen Czeizler

Friday 12 September - 15:00 - 17:00

Room 2

Session Code	Title	Main Author
365	Machine Learning meets Raman spectroscopy: a systematic review of literature in cancer diagnostics	Bogdan Oancea, Mihaela-Marinela Păun, Marian Necula, Eduard-Costin Milea, Alexandru Amărioarei and Ion Petre
377	In silico enlightening of gliomas differences, with a special focus on secondary glioblastoma	Nicoleta Siminea
483	Raman spectroscopy and machine learning can quantitatively asses clindamycin in liquid samples	Eduard C. Milea, Andreia Alecu, Alice Stoica, Marian Necula, Ion Petre, Simona Litescu and Mihaela Paun

**IS19: Models in Smart System Theory and Practice (MSTP)**

Chair: Prof. Natalia A. Serdyukova

Friday 5 September - 13:00 - 15:00

Online room 3

Session Code	Title	Main Author
3	Algebraic Quasi – fractal Models Transfer Method	Natalia Serdyukova and Vladimir Serdyukov
169	Organizational and innovative digital development of SMART-university and its modeling	Anna Sherstobitova
170	Freelancing Market and Taxation: Analysis and Modeling	Anna Sherstobitova
649	Graph–Vector Hybrid Model for Predicting Synergistic Drug-Drug Interactions Toward Clinical Decision Support Integration	Flaviu Ioan Gheorghita, Vlad Ioan Bocanet and Laszlo Barna Iantovics
661	Business Analytics and Machine Learning for Project Management	Lyudmila Glukhova, Svetlana Gudkova, Svetlana Sirotyk and Anton Gudkov

**IS20: Computational Culture, Arts, and Interaction**

Chair: Prof. Ryosuke Yamanishi

Wednesday 10 September - 15:05 - 17:35

Room 6

Session Code	Title	Main Author
63	Uncovering the Differences between LLM-generated and Human-written Answers to an Ideational Creativity Test	Anca Daniela Dinu, Andra-Maria Florescu and Ștefana Arina Tăbușcă
238	Beyond the Screen: The MBTI Personality Impact on DOFUS Gameplay Dynamics	Vincent Nguyen and Rebecca Deneckere
347	Supporting Composers to Retrieve Synthesizers by Exploring Network for DAW-based Music	Miyu Yoneda and Ryosuke Yamanishi
383	Does Representing Pen Pressure Improve Handwritten Calculation Accuracy?	Sari Kobayashi, Yuto Sekiguchi, Riho Ueki, Satoshi Nakamura and Akiyuki Kake
399	The Disfluency Effect in Reading Comprehension: Findings from Paper and Screen Experiments	Ai Hagihara, Yuhi Sezaki, Sayaka Takano, Satoshi Nakamura and Akiyuki Kake

**IS20: Computational Culture, Arts, and Interaction**

Chair: Prof. Ryosuke Yamanishi

Wednesday 10 September - 15:05 - 17:35

Room 6

Session Code	Title	Main Author
443	A Network of Voice Actors in Anime Based on Casting History	Junnosuke Makino, Naoki Fujimoto, Jotaro Tasaki and Ryosuke Yamanishi
453	Logistic Regression Modeling for Predicting Commercial Publication of Online Novels Using Only Attribute Information	Kenichiro Ohta and Mitsuo Yoshida
480	Exploring the Potential of Sound Leakage for Sharing Music	Hidegori Aoki, Homei Miyashita and Kazushi Nishimoto
604	Understanding Danmaku and Comment Interactions Through Content Features and Video Popularity	Qiao Wang, Liang Liu, Kazumasa Omote and Mitsuo Yoshida

**IS21: Security Informatics, Predictive Policing Strategies in Law Enforcement**

Chair: Prof. Fu-Ching Tsai

Friday 5 September - 10:00 - 12:00

Online room 14

Session Code	Title	Main Author
225	IDS-GPT: A Novel Deep Learning-Powered Framework for Network Traffic Intrusion Detection	Firas Saidi
665	AI-Driven F2N-ECC Framework for Secure, Real-Time E-Commerce Transactions	Fatma Mallouli, Rimah Amami, Eman Jaradat, Hassan Ahmad Eleraky, Ahmad Abas, Rim Amami and Najla Frih

***IS21: Security Informatics, Predictive Policing Strategies in Law Enforcement***

Chair: Prof. Fu-Ching Tsai

Friday 12 September - 15:00 - 17:00

Room 5

Session Code	Title	Main Author
796	Prompt Engineering for Virtual Asset Transaction Analysis using Large Language Models: A Pilot Study	Chen-Yu Kuan and Fu-Ching Tsai
799	A Study on Latent Dirichlet Allocation Generative Model to Cryptocurrency Fraud Judicial Documents	Hueisin Pan and Fuching Tsai

**IS22: Faculty Development for the Next Digital Era**

Chair: Prof. Kayoko Kurita

Thursday 11 September - 10:45 - 12:30

Room 3

Session Code	Title	Main Author
<b>352</b>	Using Aspect Oriented Programming and Monitor Oriented Programming in Timetable Generation System	Delia-Iustina Grigoriță, Paul Duțuc, Ionela Cotiugă, Raul-Mădălin Boboc and Adrian Iftene
<b>705</b>	Developing the Research Portfolio (RP) Chart: A Reflection Tool for Clarifying Researcher Identity among Sports Scientists in Japan	Goichi Hagiwara, Daisuke Akiyama and Kayoko Kurita
<b>719</b>	Development and Validation of a Digital Evaluation System for a Repetitive Side-to-Side Jump Test Based on Skeletal Recognition	Ryousuke Furukado, Kazuhiro Noguchi, Goichi Hagiwara and Yasunori Takemura
<b>751</b>	Enhancing Identity Formation and Self-Reflection in Student-Athletes: The Effectiveness of the Athlete Portfolio (AP) Chart Workshop	Daisuke Akiyama, Goichi Hagiwara and Kayoko Kurita
<b>762</b>	Comparing User Perceptions of AI-Generated Short Video Clips and Text Summaries of Academic Papers: Toward the Development of the “Paper 2 Clip” System	Hayato Sezaki, Takashi Goto, Ayako Kurono Fukunaga, Hideo Kawamata and Kayoko Kurita

**IS23: Smart Education: Learning environment using technology**

Chair: Prof. Nobuyuki Ogawa

Thursday 11 September - 13:30 - 15:00

Room 3

Session Code	Title	Main Author
151	Development and challenges of an online disaster prevention course using STEAM education for students at 51 KOSEN (National Institute of Technology) nationwide	Yutaka Tada, Takuma Kadono, Takeshi Fujiwara, Tatsuo Tono, Takashi Matsumoto and Kenji Kato
385	Preparation for Introducing Generative AI into the Next-Generation Educational App “A-txt” for Smart Devices	Shin-Nosuke Suzuki, Ryohei Kameyama, Takuya Matsumura, Akira Okada, Katsumi Hirata, Yasuhiro Kobayashi, Takehito Kato, Yutaro Akimoto, Kuniaki Yajima, Nobuyuki Ogawa, Hideyuki Kanematsu and Tadashi Fukumoto
397	A Method of Increasing the Readiness to Learn and Result of the Practice: "Buzz Session on Pre-Learning"	Nobutake Asaba, Masateru Hishina and Kazunori Nishino
197	Expansion of the Next-Generation Educational Applications “C-mkr” and “A-txt” Across Multiple Platforms and Their Implementation in Educational Settings	Shin-Nosuke Suzuki, Ryohei Kameyama, Takuya Matsumura, Akira Okada, Katsumi Hirata, Yasuhiro Kobayashi, Takehito Kato, Yutaro Akimoto, Kuniaki Yajima, Nobuyuki Ogawa, Hideyuki Kanematsu and Tadashi Fukumoto

***IS23: Smart Education: Learning environment using technology***

Chair: Prof. Nobuyuki Ogawa

Thursday 11 September - 15:35 - 17:35

Room 3

Session Code	Title	Main Author
<b>219</b>	Pupillometric Analysis of Cognitive Load in VR Environments: The Impact of Visual and Auditory Fidelity	T.L.A.N. Chandrasiri, Taichi Nakagawa, Nobuyuki Ogawa, Kuniaki Yajima, Muneo Kitajima and Katsuko Nakahira T.
<b>489</b>	Agile and Student-Centred Teaching of Agile/Scrum Concepts	Maria Spichkova
<b>477</b>	Metaverse-Based Clinical Training in Nursing Education: Utilization of Computer Graphics and Generative AI	Takeshi Koike and Yukie Majima
<b>627</b>	The Impact of AI on Job Market Dynamics and Human Interaction: Perceptions from Computer Engineering Students	Natalia Gomes and Elisabete Brito
<b>160</b>	Illuminating Predictions: The Use and Evaluation of Explainable AI in Predictive Process Monitoring – A Systematic Review	Noah Kim, Holger Wittges and Stefanie Rinderle-Ma

**IS24: Knowledge-based Data Analysis for Complex Data**

Chair: Prof. Mika Sato-Ilic

Wednesday 10 September - 15:05 - 17:35

Room 5

Session Code	Title	Main Author
65	Comparative Study on Influences of False Negative Ratings in Collaborative Filtering with Fuzzy Co-Clustering	Katsuhiro Honda, Jun-Seo Lee, Seiki Ubukata and Akira Notsu
67	Asymptotic properties of kernel k-means and its comparison with conventional k-means in high-dimensional settings	Kento Egashira, Kazuyoshi Yata and Makoto Aoshima
107	Interaction Modeling for High-Dimensional Mixed Data Considering Distribution and Correlation	Taiki Ito, Takuya Matsuzawa and Sumika Arima
112	The reduction of false positives in Sparse Factorization Machines	Takuya Matsuzawa, Taiki Ito and Sumika Arima
224	Local Embedding Consensus Across Multiple Descriptor Spaces	Lea Eileen Brauner and Frank Höppner
240	Distribution-Guided Hybridization of JADE and Nelder-Mead for Efficient Global Optimization under Evaluation Constraints	Yuta Takahashi, Akira Notsu and Katsuhiro Honda
655	Real-Time Wildfire Detection and Segmentation using an Optimized Attention U-Net	Avner Ben Shlomo, Dor Filis and Miri Weiss Cohen
824	Palmprint Classification with Deep Learning Features and SURF Keypoints	Anca Ignat, Ioan Păvăloi and Cristina Diana Niță

***IS25 Generative AI in the healthcare system: friend of foe?***

Chair: Assoc. Prof Smaranda Belciug

Wednesday 10 September: 10:35 - 12:35

Room 7

Session Code	Title	Main Author
14	Attention-based Deep Learning Framework in the Classification of Post-Stroke Kinematic Parameters	Roel Pantonial and Milan Simic
20	Prediction Of Labor Outcome Using Generative Artificial Intelligence	Smaranda Belciug, Diana-Lorena Cocilnau, Flavius Vasile and Dominic Gabriel Iliescu
108	Explainable Deep Learning Framework for Classification of Total Hip Arthroplasty Gaits	Roel Pantonial and Milan Simic
142	An OSCE-Inspired Framework for Fine-Tuning Multimodal LLMs in Medical Diagnosis	Dimitrios P. Panagoulas, Anastasios Palamidas, Maria Virvou and George A. Tsihrintzis

**IS25 Generative AI in the healthcare system: friend of foe?**

Chair: Assoc. Prof Smaranda Belciug

Thursday 4 September - 13:00 - 15:00

Online room 13

Session Code	Title	Main Author
157	Machine Learning-based Adverse Drug Reaction Prediction: Model Comparisons, Feature Optimization and Generative AI Challenges	Ana-Maria Cucos and Barna Iantovics
580	PraNet-based Gastrointestinal Polyp Segmentation on Heterogeneous Datasets: Study of Augmentation Impact on Performance	Daniela Cristea, Ioan Sima, László-Barna Iantovics and Vladimir Sînișin
635	Automatic medical report generation and specialist referral prediction	Raluca Danciulescu and Renato Ivanescu
658	Shaping the Future of Generative AI in Aged and Community Care: A Practitioners’ Perspective	Gareth Priday, Sonja Pedell, Leon Sterling and Anne Livingstone
687	Study of Small and Medium-Scale Open-Source Language Models in Human-like logic and Comprehension Tasks	Madalina-Maria Muraru, Evgenii Evstafev and László Barna Iantovics
784	User Behavior Toward Telemedicine in Saudi Arabia: A Post Covid-19 Demographic Analysis	Mohammed H. Alqahtani, Abdulrahman S. Alamri, Lucy Lunevich and Milan Simic

**IS26: Intelligent Decision Support and Process Optimization Under Uncertainty**

Chair: Dr Aleksandra Radomska-Zalas

Thursday 4 September - 13:00 - 15:00

Online room 9

Session Code	Title	Main Author
72	Fuzzy Ontologies in ERP Implementation Cost Estimation –A Literature Review	Przemysław Plecka, Włodzimierz Wysocki and Ireneusz Miciuła
73	Will AI Streamline ERP System Implementations in Enterprises?	Przemysław Plecka
122	Decision-making based on a series of diagnoses.	Grzegorz Krzywoszyja and Konrad Stefanowicz
127	Categorical Pseudo-Labeling with Iterative Cluster Expansion	Weronika Łazarz and Agnieszka Nowak-Brzezińska
393	Evaluating Clustering Quality in Categorical Data: A Comparative Analysis and Novel Metrics	Weronika Łazarz and Agnieszka Nowak-Brzezińska

**IS26: Intelligent Decision Support and Process Optimization Under Uncertainty**

Chair: Dr Aleksandra Radomska-Zalas

Friday 5 September - 10:00 - 12:00

Online room 6

Session Code	Title	Main Author
548	The use of the Preference Vector Method – Vector Space of Increments (PVM–VSI) in supporting the consumer decision related to the purchase of an electric car from the mini–segment	Marek Kannchen
621	Context-aware Reinforcement Learning for RCS Design Space Exploration	Amen Ben Hadj Ali and Samir Ben Ahmed
738	Optimization of PID Controller Settings Using the Ziegler–Nichols Method in Pneumatic Pressure Control Systems	Łukasz Lemieszewski and Piotr Puzio
747	Concept of optimization for creating new knowledge integration methods for project teams in mechanical engineering	Magdalena Krakowiak, Andrzej Perec and Paweł Grochocki
748	Artificial Intelligence–Assisted Diagnosis of Pulmonary Pathological Changes in Magnetic Resonance Imaging	Jarosław Becker, Grzegorz Kolendo, Aneta Becker and Sebastian Kawczyński
749	Optimization Method for the Detection and Mitigation of Spoofing Attacks on RFID Readers in Industrial Networks	Łukasz Lemieszewski, Wojciech Zając, Jakub Baraniecki and Szymon Prochacki
767	Multi-criteria optimization of the water jet cutting process using the MOEA algorithm	Elżbieta Kawecka, Jerzy Podhajecki and Andrzej Perec

**IS27: Reasoning-based Intelligent Applied Systems**

Chair: Dr Jair Minoro Abe

Thursday 4 September - 10:00 - 12:00

Online room 9

Session Code	Title	Main Author
<b>51</b>	Optimizing security in the Metaverse using DLP – Data Loss Prevention and Paraconsistent Logic	Luigi Pavarini Lima, Liliam Sayuri Sakamoto, Jair Minoro Abe, Angel Antonio Gonzalez, Aparecido Carlos Duarte, Nilson Amado de Souza Souza, Marcelo Rocha, Caique Zaneti Kirilo, Adriane Akemi Zenke and Luiz Antonio de Lima
<b>52</b>	DLP: Data loss prevention with paraconsistent logic for security in the metaverse	Liliam Sakamoto, Luigi Pavarini Lima, Jair Minoro Abe, Aparecido Duarte, Jonatas S. Souza, Angel Antonio Gonzalez, Marcelo Rocha, Caique Zaneti Kirilo, Adriane Akemi Zenke and Luiz Antonio de Lima
<b>246</b>	Cargo Security Improvement Actions in High-Risk Urban Logistics Using a Paraconsistent Expert System: A Comprehensive Decision-Making Framework	Kennya Vieira Queiroz, Jair Minoro Abe and Miguel Renon
<b>307</b>	Risk Analysis on Cognitive Behavioral Theory using Paraconsistent Logic	Luigi Pavarini Lima, Liliam Sakamoto, Jair Minoro Abe, Artur Marques Jr, Angel Antonio Gonzalez, Aparecido Duarte, Marcelo Rocha, Caique Zaneti Kirilo, Adriane Akemi Zenke, Jonatas Souza and Luiz Antonio de Lima
<b>633</b>	Smart Technologies in Poultry Production: Trends and Innovations	Leandro Cigano de Souza Thomas, Jair Minoro Abe, Marcus Vinicius Leite, Irenilza de Alencar Nääs and Davi de Albuquerque Gomes

Session Code	Title	Main Author
336	Improving Decision-Making in Broiler Production: A Novel Model Using Paraconsistent Annotated Evidential Logic Et for Environmental Control	Leandro Cigano de Souza Thomas, Jair Minoro Abe, Marcus Vinicius Leite and Irenilza de Alencar Nääs

**IS27: Reasoning-based Intelligent Applied Systems**

Chair: Dr Jair Minoro Abe

Friday 12 September - 10:30 - 12:30

Room 1

Session Code	Title	Main Author
426	Mogura Taiji Et – A Paraconsistent Annotated Evidential Logic Et approach to enhance WAF	João Glauco Barbosa dos Santos, Jair Minoro Abe and Marcus Vinicius Leite
631	Reasoning over Interrupted Trends in Systemic Shocks: A Logic-Driven ITSA and Clustering Analysis of Human Development Disruption	Marcus Vinicius Leite, Jair Minoro Abe, Leandro Cigano de Souza Thomas, Vando Aparecido Monteiro and Irenilza de Alencar Nääs
329	ParaBANT: An Adaptive Paraconsistent Model for Bias-Resistant B2B Lead Qualification and Segmentation	Marcus Vinicius Leite, Jair Minoro Abe and Marcos L. H. Souza

***IS28: Complex and dispersed classifiers (CDC 2025)***

Chair: Prof. Małgorzata Przybyła-Kasperek

Thursday 4 September: 10:00 - 12:00

Online room 4

Session Code	Title	Main Author
643	Improving Automatic Check-Out Accuracy with Fine-tuned YOLOv10 and YOLOv12 Models	Rafał Skinderowicz
314	Answer Set Searching with Weighted MaxSAT	Arkadiusz Nowakowski, Wojciech Wieczorek and Łukasz Strąk
315	Searching All including Overlapping Matches through Regular Expressions	Wojciech Wieczorek, Arkadiusz Nowakowski and Łukasz Strąk
316	Logic Programming for Orthogonal Graph Drawing on Restricted Grids	Łukasz Strąk, Wojciech Wieczorek and Arkadiusz Nowakowski

**IS29: Dynamic System Modeling and Simulation**

Chair: Prof. Zeev Volkovich

Thursday 11 September - 10:45 - 12:30

Room 3

Session Code	Title	Main Author
39	Assessing citation appropriateness through masked graph autoencoder	Renata Avros and Zeev Volkovich
40	Nested Structure of Citation Anomalies	Renata Avros, Omri Sharof, Boris Shoostin and Zeev Volkovich
70	Assessment of citation suitability via an ant colony-inspired algorithm	Dvora Toledano-Kitai, Yoni Azeraf, Itamar Kraus and Zeev Volkovich
471	Call Admission Control in Multi-Service LTE and 5G C-RAN: A Survey	Maroua Idi and Sana Younes

***IS30: Intelligent Methods in Maritime Engineering, Transport and Logistics***

Chair: Prof. Andrzej Banaszek

Friday 5 September - 10:00 - 12:00

Online room 12

Session Code	Title	Main Author
30	The Support Decision System for establish Radio Communications in Distress Situations for Masters of Touristic Yachts travelling around the Wallace’s Line Sea Area	Andrzej Banaszek and Andrzej Lisaj
37	ANN Computer System to Support the Decision of Small Yacht Masters in Distress Situations for establish Radio Communication while sailing in Western Caribbean Sea Waters Area	Andrzej Banaszek and Andrzej Lisaj
529	A hybrid Genetic Algorithm and Simulated Annealing approach for multi-level 3D bin packing problem	Meriem Hsayri, Mounira Tlili and Ouajdi Korbaa

***IS31: The impact of artificial intelligence on business***

Chair: Prof. Larisa IVASCU

Friday 5 September - 13:00 - 15:00

Online room 8

Session Code	Title	Main Author
183	Selling Artificial Intelligence: How AI changes the rules of online smartphone offer presentations	Dariusz Grabara
609	Innovative Consumption Across Generations Y and Z: Divergent Criteria for Product Selection	Luiza Piersiala and Judyta Kabus
718	Using ML to analyze ESG ratings to support the investors' decision-making process	Przemysław Wołczek
345	Analysis of Factors Contributing to Conversational Derailment Using Text Style Embeddings	Kenya Nonaka and Mitsuo Yoshida

**IS32: Knowledge-Based Systems for e-Business**

Chair: Prof. Kazuhiko Tsuda

Thursday 11 September - 13:30 - 15:00

Room 2

Session Code	Title	Main Author
4	Turning graffiti into art! The impact of shutter designs on shopping street attractiveness	Takumi Kato, Yuki Chiba, Ami Hattori, Ryosuke Ikeda and Masaki Koizumi
5	Environmental protection or privacy protection: Improving recycling attitudes through marketing communication	Takumi Kato, Yui Ikuma, Ryosuke Ikeda, Atsuki Matsuda and Masaki Koizumi
317	Local Government Officials’ Interest in Generative AI and Its Influence on Broader Engagement with Digital Technologies	Eiji Kano and Kazuhiko Tsuda
324	Evaluating Digital Channel Effectiveness in Manufacturing Omnichannel Strategies: Evidence from Japanese Consumer Loyalty Analysis	Masaki Koizumi, Takumi Kato and Kazuhiko Tsuda
346	Measuring Technology Commercialization Using Corporate Disclosures and Observing Temporal Patterns	Misa Sato, Masanori Hirano, Kentaro Imajo and Mitsuo Yoshida
355	Decoding Innovation Growth: An Explainable AI Analysis of How Mega Sport Events Transform Financial Landscapes and Sustainability Metrics	Napitiporn Manoli, Masakazu Takahashi and Yoshiyuki Matsuura

**IS32: Knowledge-Based Systems for e-Business**

Chair: Prof. Kazuhiko Tsuda

Thursday 11 September - 15:35 - 17:35

Room 7"

Session Code	Title	Main Author
358	A Study on Pattern Analysis of Evolutionary Business Strategies in the Real World	Masayuki Hirose, Hideki Hayashida and Masakazu Takahashi
362	A method to identify textual features of superior integrated reports issued by Japanese listed companies, using BERT	Ryohsuke Tanaka and Kazuhiko Tsuda
363	Research and Development Dynamics in Functional Materials: A Comparison Case Study of Power Device Technology through Network Analysis	Hideki Hayashida and Hiroki Funashima
366	A Method for Extracting Dissatisfaction Entities and Visualizing Dissatisfaction Information Using a Large Language Model	Kakeru Ota, Takumi Uchida, Yoshiyuki Kobayashi and Kazuhiko Tsuda
369	Analyzing Changes in Integrated Report Descriptions	Yusuke Takahashi and Kazuhiko Tsuda
372	A Study on Domain Diagnosis of Corporate-Owned Technologies using Text Mining	Masataka Noda and Kazuhiko Tsuda
374	Hierarchical Differences in Motivation for Engaging in Innovation Activities	Mayu Fushmi, Hideki Hayashida and Yamato Kataoka

**IS32: Knowledge-Based Systems for e-Business**

Chair: Prof. Kazuhiko Tsuda

Friday 12 September - 10:30 - 12:30

Room 8

Session Code	Title	Main Author
376	Multi-indicator comparative analysis of health food regulations in various countries using a large-scale language model (LLM)	Yoshiyuki Kobayashi, Maya Iwano, Takumi Uchida, Itsuki Kageyama, Kota Kodama and Kazuhiko Tsuda
398	A Proposal for a System for Extracting Factors Behind Service Recipient Dissatisfaction	Maya Iwano, Yoshiyuki Kobayashi, Kakeru Ota and Kazuhiko Tsuda
407	Empirical Reconsideration of Anonymity Effects on Communication Toxicity in Social Media	Qiao Wang and Mitsuo Yoshida
419	Classification of Digital Transformation Stages and Portfolio Characteristics: A Framework Applied to Annual Reports of Japanese Listed Companies	Yuta Watanabe and Yasunobu Kino
469	Optimized Machine Learning Models to Enhance Aortic Stenosis Severity Classification	Fitri Aprilianty, Masakazu Takahashi, Ayumi Omuro and Sadahiro Hirokazu
484	Quantifying the Relationship Between Public Facility Distribution and Regional Sentiment in Japan Using Twitter Data	Daisuke Kikutani and Mitsuo Yoshida
498	Analysis of the employment process of Indian IT Engineers in Japan using an ER diagram	Hiroaki Kumamoto, Yasunobu Kino and Hiroshi Kuroki

**IS33 Advances in Health Informatics**

Chair: Prof. Daniela Gifu

Friday 12 September - 15:00 - 17:00  
Room 7

Session Code	Title	Main Author
43	Innovative Applications of Drones in Health Informatics: Real-Time Health Data Collection and Surveillance for Worker Safety in Construction Fields	Pablo Peña, Mohammad Ale Isaac, Eleftheria Pechlivani, Ahmed Ragab, Daniela Gifu and David Gómez
78	Benchmarking Large Language Models for Biomedical Relation Extraction	Claudiu Creanga, Teodor Marchitan and Liviu P. Dinu
598	Analysis of the relationship between pre-competition mental state evaluation and athletic performance using EEG indicators	Takayoshi Hirai, Yuri Nakagawa and Midori Sugaya

**IS34: Detection of Complex Attacks**

Chair: Prof. Pierre Parrend

Friday 12 September - 10:30 - 12:30

Room 2

Session Code	Title	Main Author
263	Enhancing robustness to concept drift in attack detection using dynamic graphs	Julien Michel and Pierre Parrend
490	GReAT-BeD: Graph Rewriting for Activity Tracking and (Malicious) Behaviour Detection	Antonin Verdier, Romain Laborde and Abdelmalek Benzekri
544	Towards Graph-based Self-learning of Industrial Process Behaviour for Anomaly Detection	Ankush Meshram, Markus Karch, Christian Haas and Jürgen Beyerer

**IS35: Knowledge Engineering and Data Mining - theory and practice**

Chair: Assoc Prof. Agnieszka Nowak-Brzezińska

Thursday 11 September - 13:30 - 15:00

Room 4

Session Code	Title	Main Author
<b>467</b>	Knowledge Extraction for RNA Secondary Structure Prediction Using Heterogeneous and Dynamic Programming	Mateusz Grużewski and Marek Pałkowski
<b>628</b>	Performance of YOLO based traffic analysis in high resolution video stream	Przemysław Kudłacik, Kamil Kaszuba and Paweł Lubowiecki
<b>636</b>	Effective Detection and Recognition of Traffic Signs with Light Convolutional Neural Networks	Maciej Olszewski, Bożena Malysiak-Mrozek, Krzysztof Tokarz, Bolesław Pochopień, Che-Lun Hung, Andrzej Pułka and Dariusz Mrozek
<b>689</b>	A hybrid knowledge-based machine learning approach for ticket classification in the AWS cloud	Agnieszka Nowak-Brzezinska and Dawid Drabek
<b>465</b>	Automated Transformation of OpenMP to CUDA Kernels Using AI Models	Mateusz Grużewski

***IS35: Knowledge Engineering and Data Mining - theory and practice***

Chair: Assoc Prof. Agnieszka Nowak-Brzezińska

Thursday 4 September - 10:00 - 12:00

Online room 8

Session Code	Title	Main Author
74	Relationships between attributes and decisions with exclusion of part of the data using fuzzy inequalities	Zofia Matusiewicz and Piotr Matusiewicz
98	Method for Restoring Consistency in Inconsistent Data Sets	Anna Marczakiewicz and Teresa Mroczek
117	Exploring the relation between source code commit information and SonarQube issues	Liviu Marian Berciu, Simona Motogna, Oskar Picus and Arthur Molnar
446	Explainable Fake News Detection via Multi-Aspect Semantic Discovery	Hoang-Duy Nguyen and Tung Le
697	Gait-based human classification using spectrograms analysis and deep learning.	Jakub Mrozinski and Rafal Doroz
769	Optimization of Decision Rules Derived from Random Forests	Evans Teiko Tetteh and Beata Zielosko

***IS36: Signal Processing and Edge AI Algorithms for Embedded Systems and Sensors***

Chair: Prof. Paolo Crippa

Thursday 4 September - 10:00 - 12:00

Online room 4

Session Code	Title	Main Author
<b>375</b>	Constructing classifier committee exploiting transformations of attribute domains	Urszula Stanczyk and Grzegorz Baron
<b>468</b>	A statistical 3D watermarking method based on logistic chaotic scrambling system	Nassima Medimegh, Hela Haj Mohamed, Samir Belaid and Naoufel Werghi

**IS37: Healthcare systems using artificial intelligence, deep learning and vision transformers techniques**

Chair: Prof. Yen Wei Chen

Friday 12 September - 10:30 - 12:30

Room 7

Session Code	Title	Main Author
210	Simultaneous Identification and Classification of Lung Nodules in CT Images – A Hierarchical Network Approach	Dominik Hahn, Christoph Mattmann, Marco Klaiber, Sören Wagner, Marc Fernandes and Manfred Rössle
211	A Capsule Network-Based Hybrid Model for Lung Nodule Detection	Christoph Mattmann, Dominik Hahn, Marco Klaiber, Sören Wagner, Marc Fernandes and Manfred Rössle
217	An overview of techniques for automatic detection of bone fractures	Liviu-Andrei Scutelnicu, Norin Forna and Mihaela Luca
413	Multi-Dataset Cross-Domain Knowledge Distillation for Medical Image Segmentation	Ciprian-Mihai Ceausescu and Bogdan Alexe
420	EpiSegLesion: A U-DenseNet Framework for FCD Type II Segmentation in Epilepsy Surgery Planning Using Transfer Learning and Combined Loss Functions	Rehab Nailly and Mourad Zaied

**IS37: Healthcare systems using artificial intelligence, deep learning and vision transformers techniques**

Chair: Prof. Yen Wei Chen

Friday 12 September - 15:00 - 17:00

Room 1

Session Code	Title	Main Author
430	Optimizing Breast Cancer Diagnosis in Ultrasound Imaging: A Deep Learning Approach Using Transfer Learning and Data Sampling Techniques	Marwen Sakli, Chaker Essid, Rayhane Hammemi, Hedi Sakli and Bassem Ben Salah
865	CFG-Based Malware Detection Using CNN and Vision Transformer Architectures: A Performance Comparison	Vlad Constantin Craciun, Dragos Gavrilit, Mihai Leonte and Adrian Panaintescu
780	Comparing Vision Transformers Towards Automatic Bowel Cleansing: A discussion	Vlad Constantin Craciun, Adrian Valentin Panaintescu, Mihaela Luca, Radu Marian Lefter, Adrian Ciobanu, Vasile Liviu Drug and Radu Alexandru Vulpoi
589	Preoperative Features-based Machine Learning Models with XAI for Improved Pancreatic Cancer Survival Prediction	Vincent Peter Magboo, Ma Sheila Magboo, Erica Mae Antonino, Mikaella Louise Layug and Giancarlo Gabriel Trani

***IS37: Healthcare systems using artificial intelligence, deep learning and vision transformers techniques***

Chair: Prof. Yen Wei Chen

Thursday 4 September - 13:00 - 15:00

Online room 13

Session Code	Title	Main Author
416	Fusion of Simple Fully Convolutional Network with 3D Generative Adversarial Network for Alzheimer’s Disease	Intissar Hilali, Nozha Jlidi, Olfa Jemai and Ridha Ejballi
162	Improving biomedical fields with knowledge graphs: Domains, Tasks, and Applications	Wiem Baazouzi and Marouen Kachroudi
496	A Data-Driven Machine Learning Framework for Predicting Disabilities in Cerebral Palsy	Rahma Haouas Zahwanie, Lilia Cheniti-Belcadhi and Saoussen Layouni
497	Short-term Forecasting of Ventilator and Oxygenation Device Demand During the COVID-19 Pandemic: A Comparison of Deep Learning and Statistical Models	Amal Abid, Mounira Tlili, Feten Maaroufi and Ouajdi Korbaa
823	DeepRet: A Portable and Multimodal AI System for Enhancing Glaucoma Diagnosis in Resource-Limited Settings	Rohan Kalia, Mohammed Aledhari, Mohamed Rahouti and Abdellah Chehri

### ***IS37: Healthcare systems using artificial intelligence, deep learning and vision transformers techniques***

Chair: Prof. Yen Wei Chen

Friday 5 September - 10:00 - 12:00

Online room 13

Session Code	Title	Main Author
<b>550</b>	A Federated Multi-Model DL Framework For Early Alzheimer's Disease Prediction With Preserving And Explainability Features	Safa Jraba, Mohamed Elleuch, Hela Ltifi and Monji Kherallah
<b>556</b>	Alzheimer's Disease Classification Using an Efficient CNN with Multi-Head Self-Attention	Maysam Chaari and Yassine Ben Ayed
<b>573</b>	CLARA: A Context-Aware Drug Recommendation Framework Using Multi-Level Integration of Large Language Models and Graph Neural Networks	Sarra Laaouar and Nacim Yanes
<b>645</b>	Hybrid Transformer-Based Framework for Multi-Type Lung Cancer Detection Using Attention-Guided Feature Fusion	Revathi T and Ezil Sam Leni A
<b>578</b>	A Comprehensive Review of Noise Removal Techniques in ECG Signal Processing	Wissal Midani, Hela Ltifi and Mounir Ben Ayed

***IS38: Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy***

Chair: Dr. Lukasz Kozar

Friday 5 September - 10:00 - 12:00

Online room 8

Session Code	Title	Main Author
118	ESG and Digital Transformation: Bibliometric Review	Łukasz Kozar and Szymon Bolimowski
124	Digital Nomads and the Circular Economy. Building Readiness for Green Entrepreneurship among Young Adults through Self-Organized Learning Environments	Ewa Listopadzka
126	Teachers as Architects of Green Readiness: Future-Ready Competencies in Education	Ewa Listopadzka, Izabela Klepacka-Dunajko and Dariusz Prokopowicz
209	Blockchain and Circular Economy: Bibliometric Identification of Green Research Areas	Wodnicka Monika and Łukasz Kozar
379	The Role of Trust in Fintech Adoption and Development: Bibliometric Analysis	Iwona Czechowska and Marta Paduszyńska
620	Green Finance and Digital Transformation: A Bibliometric Analysis of Research Trends	Izabela Warwas and Łukasz Kozar

### ***IS38: Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy***

Chair: Dr. Lukasz Kozar

Friday 5 September - 13:00 - 15:00

Online room 7

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>637</b>	Building Sustainable Food Systems with Digital Food-Sharing: Too Good To Go	Aldona Podgórnjak-Krzykacz and Justyna Przywojska
<b>640</b>	The Role and Significance of the Green Internet of Things in Smart City Development: A Bibliometric Review of Research Trends	Łukasz Kozar, Aldona Podgórnjak-Krzykacz and Justyna Przywojska
<b>691</b>	The Role of Blockchain in Logistics and Supply Chain: Insights from a Literature Review	Wodnicka Monika
<b>782</b>	Green vs. Digital Transformation in Poland: Strategies of Key Stakeholders	Izabela Warwas
<b>801</b>	The Role of Blockchain in the Digital Economy and E-Commerce: Insights from a Literature Review	Monika Wodnicka and Anna Wronka

***IS38: Role and Significance of Technology and Digital Transformation in the Development of an Innovative Green Economy***

Chair: Dr. Lukasz Kozar

Friday 12 September - 15:00 - 17:00

Room 8

Session Code	Title	Main Author
742	Innovative Sustainable Software Solutions for Green Fashion	Carolina Quintero Rodriguez, Michelle J. S. Spencer, Maria Spichkova and Rashmita Bardalai
848	Identification of Research Trends in Forecasting Models for Sustainable Development and the Energy Sector	Adam Sulich, Letycja Sołoducho-Pelc and Tomasz Zema
791	Cybersecurity and Sustainable Development – Bibliometric Study	Adam Sulich and Letycja Sołoducho-Pelc

***IS39: Future-Ready: Harnessing Intelligent Systems for Smart Societies***

Chair: Lenuța Alboaie

Thursday 4 September - 13:00 - 15:00

Online room 12

Session Code	Title	Main Author
<b>283</b>	Semantic and LLM-Enhanced Data Integration for FAIR-Compliant B2B and B2G Ecosystems	Cristina Georgiana Calancea and Lenuța Alboaie
<b>285</b>	CDUP: Detecting AI Generated Code Using Abstract Syntax Tree Analysis	Ștefan Păuleț and Mihai Alex Moruz
<b>318</b>	Capturing the changing landscape of student code in an era defined by AI	Stefan Onu Branisteanu, Lenuta Alboaie and Andrei Panu
<b>412</b>	Adapting to Natural Interaction: Exploring Gesture Control Innovations in XR with Apple Vision Pro	Panagiotis-Efstratios Chontas, Sabin Buraga and Adrian Iftene
<b>558</b>	Transparent e-Scooter fleet management with blockchain	Elżbieta Lewańska and Piotr Stolarski
<b>528</b>	Enhancing veterinary education through the Langvet-IA Web Platform using AI	Cosmin-Nicu Tîrpescu and Elena Velescu

***IS39: Future-Ready: Harnessing Intelligent Systems for Smart Societies***

Chair: Lenuța Alboaișe

Friday 12 September - 15:00 - 17:00

Room 2

Session Code	Title	Main Author
220	Psychological concepts and implications, or what matters for psychological quality of life and longevity in elderly	Lăcrămioara Cojocaru and Liviu-Andrei Scutelnicu
545	The potential of freely available Artificial Intelligence tools in cardiology-related diagnosing based on medical letter information	Maria Ecaterina Olariu, Diana Vuza and Adrian Iftene
552	Evaluating Generative AI and Human Performance in Question-Answer Validation Tasks	Elena-Ecaterina Opait, Alina Duca and Maria-Ecaterina Olariu

***IS40: Intelligent Data Analytics for Internet of Things Environments***

Chair: Dr. Maha Driss

Thursday 11 September - 13:30 - 15:00

Room 5

Session Code	Title	Main Author
<b>29</b>	Performance Evaluation of Pathfinding Algorithms for Intelligent Routing in High-Mobility IoT Edge Networks	Zahid Khan, Sultan Almogbil, Muhammad Babar, Adel Ben Mnaouer and Wadii Boulila
<b>561</b>	Adaptive Diffusion Markov GCN with LLM Explanations for IoT Attack Detection	Safa Ben Atitallah, Maha Driss, Arwa Alsehibani and Wadii Boulila
<b>303</b>	QCNN-ID: A Quantum-Classical Hybrid Model for IoT Intrusion Detection	Marwen Amara, Dr. Marwa Amara, Sami Mnasri and Thierry Val
<b>378</b>	A Classification Algorithm for Managing Electronic Medical Reports to Ensure Equitable Physician Workload Distribution in Healthcare Facilities	Mahdi Jemmali and Loai Kayed B. Melhim
<b>688</b>	CNN-GA Approach for Priority Recognition and Traffic Signal Optimization in Urban Emergency Response	Idriss Moumen, Meriem Zogarh, Youssef Oukassou, Najat Rafalia and Jaafar Abouchabaka
<b>841</b>	Optimizing Predictive Maintenance in Industrial IoT using Enhanced Genghis Khan Shark Optimizer	Abo Baker Ahmed Khedr, Pravija Raj and Ahmed M. Khedr

***IS40: Intelligent Data Analytics for Internet of Things Environments***

Chair: Dr. Maha Driss

Friday 5 September - 10:00 - 12:00

Online room 13

Session Code	Title	Main Author
505	A Blockchain-Based Security Framework for a Highly Secure and Intelligent Healthcare Ecosystem	Priyanka Verma, Nitesh Bharot, Rutvij H. Jhaveri and John G. Breslin
554	Adaptation of HVAC systems to improve the energy efficiency of smart buildings	Chaima Bouhlila, Fatma Achour and Olfa Jemai
615	A Machine Learning-Based Energy-Efficient Clustering Framework for Dynamic IoT Networks	Mohamed Rahal, Issam Zidi and Nejeh Nasri
120	Resilience without AI: Assessing the Viability of Deception-Based Ransomware Detection	Liam Goddard, Muhammad Shahbaz Khan, Maha Driss, Baraq Ghaleb, Mouad Lemoudden, William J. Buchanan and Jawad Ahmad

**IS40: Intelligent Data Analytics for Internet of Things Environments**

Chair: Dr. Maha Driss

Friday 5 September - 13:00 - 15:00

Online room 12

Session Code	Title	Main Author
<b>647</b>	Few-Shot Learning for IoT Intrusion Detection: An Attention-Based Siamese Network Approach	Shahid Latif, Jawad Ahmad, Wadii Boulila, Muhammad Shahbaz Khan and Djamel Djenouri
<b>672</b>	Intelligent Caching in IoT Sensing Networks: A Decentralized Multi-Agent Reinforcement Learning Approach with Entropy-Driven Exploration	Atef Gharbi, Mohamed Ayari and Nasser Albalawi
<b>139</b>	Adaptive Type-2 Fuzzy Unequal Clustering with Energy-Aware Routing for Efficient WSNs	Lahmar Ines, Zaier Aida, Rjili Marwa, Yahia Mohamed, Lloret Jaime, Tarig Ali and Ridha Bouallegue
<b>194</b>	Identifying Climate Anomalies with Simulated Antenna Data, Sensor Arrays, and Spiking Neural Networks	Soukaina El Maachi, Saadane Rachid and Abdellah Chehri

***IS41: Computational learning theory and advances from Heuristics to Hyperheuristics: new trends and applications in hardoptimization and constraint reasoning***

Chair: Dr. Hajer Ben Othman

Wednesday 10 September - 10:35 - 12:35  
Room 8

Session Code	Title	Main Author
130	Modifying Ant Colony Optimization from Constructive to Local Search based approach : Application on large-scale problems	Samia Sammoud, Ines Alaya and Moncef Tagina
371	Hybrid decomposition based artificial bee colony algorithm including simulated annealing for multi-objective flexible job shop scheduling problem	Jamila Sassi and Ines Alaya
659	A Machine Learning Approach for Lung Cancer Detection Using CT Scan Images	Amina Jouini, Hamza Gharsellaoui and Lassaad Latrach

***IS41: Computational learning theory and advances from Heuristics to Hyperheuristics: new trends and applications in hardoptimization and constraint reasoning***

Chair: Dr. Hajer Ben Othman

Friday 5 September: 10:00 - 12:00

Online room 5

Session Code	Title	Main Author
666	An Advance Facial Biometric System-Based Iris Classification with Image Processing and Deep Learning	Zainab Al-Qassab, Hamza Gharsellaoui and Sadok Bouamama
667	An Advance Facial Biometric Based System for Lossless Image Compression Algorithm	Taif Ammash, Hamza Gharsellaoui and Leila Ben Ayed
673	A New Improved Guided Genetic Algorithm for CSOP to Solve the Hamiltonian Circuit Problem in superimposed graphs	Khaoula Bouazzi, Moez Hammami and Sadok Bouamama

## ***IS43: Information, Innovation and Technology as a basis for sustainable business and society***

Chair: Prof. Katarzyna Szopik-Depczyńska

Friday 5 September - 13:00 - 15:00

Online room 9

Session Code	Title	Main Author
<b>172</b>	Preventing the Social Exclusion of Seniors Through New Technologies – Development Perspectives for the Silver Economy in Poland	Tomasz Eisenbardt, Alicja Fandrejewska and Tomasz Parys
<b>175</b>	Generation Z's Perception of Knowledge and Learning in the Context of Formal and Informal Education	Alicja Fandrejewska, Monika Eisenbardt and Tomasz Eisenbardt
<b>328</b>	An Overview of Knowledge Transfer in Modern Organizations: The Categorization of the Levels of Knowledge	Marcella Abudho
<b>353</b>	Environmental information in e-commerce. Example of fashion chains.	Ahneshka Kominch, Bartłomiej Kabaja and Natalia Kozik
<b>370</b>	Project supply chain risk management: a digitalization-based analysis from the perspective of the general contractor	Marcin Halicki and Andreas Uphaus
<b>476</b>	Enhancing ESG Reporting Through Process Mining: A Taxonomy of ESG Events	Elżbieta Lewańska and Milena Stróżyna

### ***IS43: Information, Innovation and Technology as a basis for sustainable business and society***

Chair: Prof. Katarzyna Szopik-Depczyńska

Thursday 4 September - 10:00 - 12:00

Online room 5

Session Code	Title	Main Author
<b>610</b>	Between Technology and Institutions: Systemic, Institutional, and Social Enablers of Digital Transformation	Andrzej Niemiec and Sławomir Zerbst
<b>629</b>	Artificial Intelligence in business management - SWOT analysis	Joanna Antczak, Judyta Kabus, Ireneusz Miciuła, Radim Lenort, Anna Brzozowska, Radosław Wolniak and Radomir Kana
<b>715</b>	Modern Mobile Apps for Visitor Guidance: The Perspective of World's Leading Art Museums	Michał Gracel and Jakub Swacha
<b>726</b>	Recommendations for value creation, sustainability and responsibility in land-use management	Jerzy Ladysz
<b>734</b>	Neural Classification of Research Scientific Excellence in Universities	Tadeusz A. Grzeszczyk
<b>834</b>	Assessing the digital entrepreneurial policy and SME competitiveness in The Gambia	Jim Secka

***IS44: Global and Constrained Optimization: Algorithms and Applications (6 th Edition)***

Chair: Prof. Abdellah Chehri

Friday 12 September - 15:00 - 17:00

Room 7

Session Code	Title	Main Author
54	An Analysis and Implementation of the Switching Sequence Table Method	Piotr Czekalski, Bolesław Pochopień, Mirosław Borowiecki and Godlove Suila Kuaban
797	Proof and Application of Little’s Formula in Optimizing Bulk-service Multi-server Queue Systems	Jing Ga and Mohan Chaudhry
161	Accelerating Parallel Algorithm Portfolio Construction	Grzegorz Zakrzewski, Xin Yao and Jacek Mańdziuk
625	A Novel Machine Learning-Guided Adaptive Optimizer for Dynamic Multi-Objective Problems	Sihem Tlili and Mohamed Rahal

## ***IS44: Global and Constrained Optimization: Algorithms and Applications (6 th Edition)***

Chair: Prof. Abdellah Chehri

Thursday 4 September - 13:00 - 15:00

Online room 10

Session Code	Title	Main Author
<b>656</b>	A New and An enhanced Intelligent Water Drop Placement in Cloud Computing	Elamine Selman
<b>675</b>	Transforming Public Procurement in Morocco through Blockchain Technology: The Impact of Smart Contracts on E-Governance Frameworks	Hicham Grar, Hasna Chaïbi and Moulay Ahmed Faqihi
<b>133</b>	Crossover Meta-Operator Based on Operator Sequences for the Firefighter Problem	Krzysztof Michalak
<b>83</b>	Nurses scheduling by considering the qualification using integer linear programming	Sara Séguin, Yoan Villeneuve, Julien Maître and Renaud Grimard

***IS45: Science of Tooling - Framing A Design Science for Digital Tools in the Urban Context***

Chair: Prof. Dr.-Ing. Jörg Rainer Noennig

Wednesday 10 September - 10:35 - 12:35

Room 9

Session Code	Title	Main Author
244	COUP-XR: A Collaborative Cross-Reality System for Urban Planning	Vincent Holtorf and Jörg Rainer Noennig
280	Exploration of a Disaster Risk Management Method for Tourism Destinations: The Case of Guatemala.	Rachele Vanessa Gatto, Maria Moleiro Dale and Joerg Rainer Noennig
284	Towards Connected Simulations – Tracing the Evolutionary Path of Urban Simulations across Digital Twin Projects and use Cases	Jörg Rainer Noennig and Jesus Lopez Baeza
293	The SURE Atlas – a Knowledge Synthesizer for Urban Sustainability Research	Husain Vaghjipurwala, Jörg Rainer Noennig, Katharina Borgmann and Agota Barabas

## ***IS46: Knowledge-Based Engineering Systems with Physiological Insights for Social Innovation and Well-Being***

Chair: Atsuko K. Yamazaki

Friday 12 September - 15:00 - 17:00

Room 6

Session Code	Title	Main Author
<b>278</b>	A Study on Baseline Estimation Methods for Emotion Evaluation Using Physiological Indices During VR Experiences	Takato Kobayashi, Narumon Jadram, Shukuka Ninomiya and Midori Sugaya
<b>733</b>	Exploring Learner-Action Timing in a Generative AI Supported EFL Ideathon: A KPT Study in Japan	Hayato Tomisu, Yuma Yamauchi, Takumi Ueda, Junya Ueda and Tsukasa Yamanaka
<b>736</b>	Dimensions of Perceived Humanness in Artificial Faces: Evaluating Anatomical and Affective Impressions in the Uncanny Valley	Ryosei Ooki, Mayu Shintani, Sumito Nagasawa and Fumiya Yonemitsu
<b>740</b>	A Human Learning Support System with Deep Learning Model predicting Roasting Degree and Moisture Loss of Coffee Beans	Masato Soga and Masaki Okamura
<b>752</b>	From Tabimae Mind Search System to EmoTABI: Introduction of Atmosphere Emotion Extraction and the Verification	Ryunosuke Nishio, Teppei Honda and Hiroshi Hasegawa
<b>756</b>	Development of a training program to activate brain functions of the elderly	Wei Liu, Kayoko H.Murakami, Atsuko K.Yamazaki and Muhammad N.A.M. Anuardi
<b>781</b>	Analysis of brain activity related to emotion evoked by auditory stimuli	Nayu Kotani and Hirokazu Miura

# ***IS47: Organisational networks based on knowledge, innovation and intelligent systems***

Chair: Associate Professor Eng. Ph.D. Robert Kućb

Friday 12 September - 15:00 - 17:00

Room 9

Session Code	Title	Main Author
234	A Cooperative Game Theoretic Model of a Multi-Agent Information Network Based on the Myerson Value	David Ramsey, Dariusz Gąsior and Rajiansyah Rajiansyah
299	Advantages and disadvantages of eHealth portals and mobile applications – the functionality and utility recommendations of informatics and management students' perspective	Anna Sołtysik-Piorunkiewicz, Witold Chmielarz, Patryk Morawiec and Marek Zborowski
646	Competence gap of franchisee candidates - case study of the largest convenience store chain in Central and Eastern Europe	Eryk Głodziński, Monika Ferreira and Agnieszka Skala-Gosk

## ***IS47: Organisational networks based on knowledge, innovation and intelligent systems***

Chair: Associate Professor Eng. Ph.D. Robert Kućeb

Friday 5 September - 10:00 - 12:00

Online room 2

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>813</b>	Cybertvetting and Procedural Justice: An Exploratory Study Among Young Adults	Ilona Pawełoszek and Rafał Niedbał
<b>843</b>	Application of UAV Technology in Local Public Administration: Evidence from Polish Municipalities	Cezary Stepniak and Ilona Pawełoszek
<b>844</b>	The Role of Organizational Culture in the Era of Digital Transformation of Enterprises	Tomasz Lis and Aleksandra Piech
<b>845</b>	ICT In The Smart City Security Management System - Health Threats	Tomasz Lis and Aleksandra Piech
<b>850</b>	Selected pillars of corporate social responsibility in the context of sustainable development – environment and social involvement	Edyta Kulej-Dudek and Marcin Gajdos
<b>851</b>	Organisation of GIS Tools in Management at the Third Level of Local Government in Poland	Tomasz Turek and Cezary Stepniak
<b>275</b>	Digitalisation of marketing activities in higher education institutions	Artur Kisiółek, Oleh Karyy, Paweł Kobis and Adam Pawliczek

## ***IS47: Organisational networks based on knowledge, innovation and intelligent systems***

Chair: Associate Professor Eng. Ph.D. Robert Kućęba

Friday 5 September - 13:00 - 15:00

Online room 7

Session Code	Title	Main Author
<b>862</b>	Use of ICT tools and artificial intelligence in teachers' work	Dariusz Dudek
<b>871</b>	A Model for Integrating Artificial Intelligence with ERP Systems - Towards Autonomous Business Management Systems	Damian Dziembek and Tomasz Turek
<b>872</b>	Managing the knowledge of the value of modern ESG organisations	Robert Kućęba
<b>873</b>	Deepfakes, a blessing in/or disguise – challenges of applying Generative AI tools	Grzegorz Chmielarz
<b>874</b>	Relations with employees and the market environment as pillars of corporate social responsibility in small and medium-sized enterprises	Edyta Kulej-Dudek and Marcin Gajdos
<b>702</b>	Generation Z's expectations regarding behavioural and technological aspects of working conditions	Paweł Kobis and Paulina Banasik
<b>809</b>	The importance of intellectual capital in the context of RPA technology acceptance	Paula Pyplacz

***IS48: Data Pre-processing Strategies and Machine Learning***

Chair: Prof. Ireneusz Czarnowski

Thursday 4 September: 10:00 - 12:00

Online room 6

Session Code	Title	Main Author
<b>97</b>	Performance comparison of ANN, CNN and RBF in multiclass image classification: batch vs. incremental Learning	Arkadiusz Mirakowski
<b>101</b>	Household financial distress in the Visegrad Group countries: comparative analysis using machine learning methods	Urszula Grzybowska, Agnieszka Wojewódzka-Wiewiórska, Piotr Stachura and Hanna Dudek
<b>114</b>	A comparison of selected oversampling techniques for problem of detecting network attacks	Veronika Hordieieva, Ireneusz Czarnowski and Piotr Jędrzejowicz
<b>116</b>	Selected approaches to handling class-imbalanced data in the context of network and network services security	Mateusz Dampc and Ireneusz Czarnowski

***IS48: Data Pre-processing Strategies and Machine Learning***

Chair: Prof. Ireneusz Czarnowski

Friday 5 September: 10:00 - 12:00

Online room 2

Session Code	Title	Main Author
119	Comparison of CNN Architectures for INTERCO	Juliusz Łosiński and Ireneusz Czarnowski
357	A data-driven approach for reconstruction of damaged AIS messages	Marta Szarmach and Ireneusz Czarnowski
380	Computational approaches to restricted and connected size Ramsey numbers for $\$2K\_2\$$ and cycles	Tomasz Dzido
623	A New Attention-based Architecture for Robust Face-Age Recognition	Amal Abbes and Yassine Ben Ayed

## ***IS49: Specialized Decision Techniques for Data Mining, Transportation and Project Management***

Chair: Prof. Ewa Ratajczak-Ropel

Friday 5 September - 13:00 - 15:00

Online room 11

Session Code	Title	Main Author
<b>121</b>	Hybrid reinforcement learning and classical graph checking approach for restricted and connected size Ramsey numbers of $3K_2$ and cycles	Tomasz Dzido
<b>128</b>	Binary transformer-based classifier	Piotr Jędrzejowicz, Izabela Wierzbowska and Ewa Ratajczak-Ropel
<b>422</b>	A differential evolution algorithm for discrete-continuous scheduling	Aleksander Skakovski and Piotr Jędrzejowicz
<b>482</b>	Centrality-based approach to finding key actors in an organizational social network	Paweł Szyman and Dariusz Barbuca
<b>575</b>	Parallelized Population-based Multi-heuristic Approach for Solving RCPSP/max	Ewa Ratajczak-Ropel and Piotr Jędrzejowicz

**IS50: Software Engineering and IT Intensive Systems**

Chair: Prof. Dr. Sergey V. Zykov

Friday 12 September - 10:30 - 12:30

Room 5

Session Code	Title	Main Author
125	Reusing ontology engineering in subject-oriented automated architecture development: current status and analysis of opportunities	Boris Ulitin, Eduard Babkin and Sergey V. Zykov
214	Intent-Driven Automata for Intent Structuring and Translation in Industry 4.0	Kaoutar Sadouki and Elena Kornyshova
260	On the integration of Blockchain and legacy systems: a framework for high consistency and low latency of distributed transactions	Yassine Ayadi, Benoît Charroux and Layth Sliman
312	IT Crisisology: systemic methodology for sustainable development of complex sociotechnical systems	Sergey Zykov
338	SCLCM: Simple Contrastive Learning based Convolutional Model for EEG Emotion Recognition	Danila A. Shulepin, Sofia A. Shulepina, Rustam A. Lukmanov and Sergey V. Zykov
266	Software Defect Prediction Models. A Replication and Extension Study	Camelia-Petrina Nadejde and Andreea Vescan

***IS50: Software Engineering and IT Intensive Systems***

Chair: Prof. Dr. Sergey V. Zikov

Friday 5 September - 13:00 - 15:00

Online room 4

Session Code	Title	Main Author
<b>265</b>	Code Visualization through Clothing Metaphor: An Empirical Software Comprehension Study	Stefan-Octavian Custura and Andreea Vescan
<b>436</b>	Towards Automatic Extraction of UML Class Diagrams: Creation of an Annotated Dataset for Training Deep Models	Zakaria Babaalla, Abdeslam Jakimi, Rachid Saadane and Abdellah Chehri
<b>854</b>	Combining Multidimensional Modelling with Frequent Pattern Mining Paradigms to Enhance Big Multidimensional Data Analytics Tools over Emerging Big Data Domains	Alfredo Cuzzocrea and Ismail Benlaredj

***IS51: The 3rd International Symposium on Intelligent and Resilient Systems for Industry 5.0***

Chair: Dr. Olfa Belkahla DRISS

Thursday 4 September - 10:00 - 12:00

Online room 12

Session Code	Title	Main Author
437	Assessing Machine Learning Models for Enhancing Intent Detection in Tourism Chatbots	Charaf Ouaddi, Lamy Benaddi, Abdeslam Jakimi, Abdellah Chehri and Rachid Saadane

***IS52: Management of safety, security, production, and human factors for cyber-physical systems***

Chair: Dr. HAMAGUCHI, Takashi

Thursday 11 September - 10:45 - 12:30

Room 7

Session Code	Title	Main Author
44	A Real-Time Method for Suppressing Sequential Alarms for Safe Plant Operations	Ryuto Tanaka and Masaru Noda
106	A Systematic Causality-Based Model for Risk Assessment and Management of Change in Chemical Plant Lifecycle	Kazuhiro Takeda, Fuchino Tetsuo, Hideo Saito, Teiji Kitajima and Yukiyasu Shimada
135	A Visualization Method for Management of Incident Response Exercises Cycles	Takashi Hamaguchi
136	Investigating the Inconsistency of Errors Between CAs in the Wild for Trustworthiness Evaluation in Cross-Domain Authentication	Shohei Kakei, Yoshiaki Shiraishi and Shoichi Saito

**IS52: Management of safety, security, production, and human factors for cyber-physical systems**

Chair: Dr. HAMAGUCHI, Takashi

Thursday 11 September - 13:30 - 15:00

Room 9

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Friday 5 September - 10:00 - 12:00

Online room 14"

Session Code	Title	Main Author
145	Applying Deep Reinforcement Learning to Semiconductor Manufacturing Scheduling Problems	Kaito Hashimoto, Susumu Katayama, Satoru Arimura, Kousuke Hara and Hisaaki Yamaba
148	Digital Engineering for Higher Quality in Pharmaceutical Manufacturing	Makoto Nakaya, Tetsuo Kaya and Masaaki Nakata
196	Scheduling System using Genetic Algorithm for Batch Processes considering Heat Recovery	Naoki Kimura
546	Access Control Based On Trust and Blockchain for IoMT	Mariem Fourati, Amel Meddeb-Makhlouf and Faouzi Zarai

## ***IS54: Harnessing AI in Knowledge and Intelligent Systems for Business Innovation***

Chair: Prof. Celina Olszak & Prof. Pawel Kasprowski

Thursday 11 September - 15:35 - 17:35

Room 1

<b>Session Code</b>	<b>Title</b>	<b>Main Author</b>
<b>24</b>	Impact of image segmentation on video frame classification performance with tiny objects	Piotr Stefański, Tomasz Jach and Jan Kozak
<b>35</b>	Optimizing operating room assignment using NLP-Based surgical case classification	Łukasz Stachnik, Przemysław Juszczuk and Jan Kozak
<b>47</b>	Forecasting air pollution concentrations based on atmospheric conditions and seasonality in urban environments	Dawid Bąba and Przemysław Juszczuk
<b>630</b>	Emotion and Phrase-Based Patterns in Smishing: A Feature-Driven Detection Framework	Natalia Krawczyk, Barbara Probiez and Jan Kozak
<b>684</b>	Harnessing AI deep learning model in the monitoring of welding quality	Pawel Kasprowski, Andrzej Klimpel, Dariusz Bismor and Roman Wyzgolik
<b>56</b>	AI-enhanced Business Intelligence for decision-making	Celina M. Olszak and Kamila Bartuś

***IS54: Harnessing AI in Knowledge and Intelligent Systems for Business Innovation***

Chair: Prof. Celina Olszak & Prof. Pawel Kasprowski

Thursday 4 September - 13:00 - 15:00

Online room 3

Session Code	Title	Main Author
204	Efficient Medical QA Through QLoRA Fine-Tuning and Knowledge Distillation	Bartłomiej Brząk and Grzegorz Diczkowski
690	Impact of artificial intelligence on future careers of students in economics-related fields: an attitudinal study	Bartłomiej Hadasik and Krzysztof Kasprowski

**IS55: Design of Nigiwai: Places Embracing Values**

Chair: Prof. Akinori Abe

Thursday 11 September - 10:45 - 12:30

Room 8

Session Code	Title	Main Author
807	Say “Maybe”: Uncertainty Coexists with Activation of Humans	Yukio Ohsawa, Sae Kondo and Kaira Sekiguchi
808	Creating Maps of Risks and Opportunities on Moving Direction Entropy for Urban Redevelopments	Yukio Ohsawa, Sae Kondo, Kaira Sekiguchi and Yi Sun
827	A Study on the Development of Product Market Value through POS Data Analysis Using Semantic Cells	Hiroki Shimizu and Yukio Ohsawa
831	The Value of City Level Spaces of Public Interaction and Local Governance in Johor Bahru City in Malaysia	Sae Kondo and Kozue Kashiwazaki
869	Nigiwai as Chance Discovery	Akinori Abe

***IS56: Decision-making in companies and the economy. Navigating Risks and Opportunities***

Chair: Assoc.Prof. Małgorzata Porada-Rochoń

Thursday 4 September - 13:00 - 15:00

Online room 3

Session Code	Title	Main Author
36	The Dynamics of Undeveloped Land Prices in Szczecin: A Hedonic Analysis	Michał Frej
288	Mitigating Automation Bias in Generative AI Through Nudges: A Cognitive Reflection Test Study	Tim Lewis Wingerter, Tim Straub and Sascha Schweitzer
348	The impact of robotics and automation on the perception of the accounting profession by the young generation from the perspective of behavioral economics	Oliwia Zielińska
367	Artificial Intelligence in Economics and Business – A Review of Tools	Korneliusz Śląg
368	The limits of autonomy of AI systems in accounting	Maja Jaworska

## ***IS56: Decision-making in companies and the economy. Navigating Risks and Opportunities***

Chair: Assoc.Prof. Małgorzata Porada-Rochoń

Thursday 4 September - 13:00 - 15:00

Online room 3

Session Code	Title	Main Author
<b>423</b>	The impact of the change in accounting principles of the National Bank of Poland on equity, financial results and payments to the state budget - opportunities and threats	Jakub Karpiński
<b>461</b>	Simple Kalecki model driven by shock impulses	Bartosz Wasilewski
<b>523</b>	Dialogue Orchestration in Multi-Chat Systems: An Analysis of the Chat Moderator's Role in Achieving Consensus in Financial Decision-Making Processes	Grzegorz Wojarnik
<b>606</b>	Exploring the Applicability of Benford's Law in Decision-Making Models for Assessing the Quality of Financial Reporting: A Case Study of Polish Public Companies	Przemysław Mućko

***IS57: Smart Sustainable Agriculture and Food Production***

Chair: Prof. Robert J. Howlett

Thursday 11 September - 10:45 - 12:30

Room 4

Session Code	Title	Main Author
392	Enhancing Precision Agriculture: UAV-Based Detection and Management of Giant Hogweed	Amira Mouakher, Bechir Ben Tekfa, Naeem Ayoub and Samira El Yacoubi

***IS58: Information Disorder Challenges in the Era of AI-Generated Contents  
Manipulation: Security, Trustability and Faithfulness of Shared Knowledge***

Chair: Prof. Fiammetta Marulli

Friday 5 September - 10:00 - 12:00

Online room 14

Session Code	Title	Main Author
681	Navigating Responsible AI: A Systematic Review of Governance Mechanisms and Future Co-Governance Scenarios	Imen Ferjani, Nouredine Mohamed Bouzir and Fatimah Abdulraheem Alzahrani
814	Cross-Model Evaluation of LLMs for Generating Formal Specification of Distributed Industrial Control Systems	George Raptis, Muhammad Taimoor Khan, Christos Koulamas and Dimitrios Serpanos

**IS59: New Generation Computing in Engineering, Life Science and Economy**

Chair: Prof. Piotr Nikończuk

Thursday 11 September - 10:45-12:30

Room 9

Session Code	Title	Main Author
39	Assessing citation appropriateness through masked graph autoencoder	Renata Avros and Zeev Volkovich
40	Nested Structure of Citation Anomalies	Renata Avros, Omri Sharof, Boris Shoostin and Zeev Volkovich
70	Assessment of citation suitability via an ant colony-inspired algorithm	Dvora Toledano-Kitai, Yoni Azeraf, Itamar Kraus and Zeev Volkovich
156	Using YOLO network for selection of suitable frames from laryngoscopy videos	Katerina Korenblat, Elena Kleiman and Zeev Volkovich
471	Call Admission Control in Multi-Service LTE and 5G C-RAN: A Survey	Maroua Idi and Sana Younes
741	The use of artificial intelligence in logistics information systems	Tomasz Krolikowski, Joanna Alicja Dyczkowska and Marcin Olkiewicz

**IS59: New Generation Computing in Engineering, Life Science and Economy**

Chair: Prof. Piotr Nikończuk

Thursday 4 September - 10:00 - 12:00

Online room 10

Session Code	Title	Main Author
<b>349</b>	The Concept of Self-Adaptive Dynamic Reconfiguration in FPGA-Based DSP Systems	Łukasz Gołka, Paweł Poczekajło and Robert Suszyński
<b>350</b>	Forth Language Extensions for DSP: Configurable FIFO and LIFO Structures	Łukasz Gołka, Robert Suszyński and Paweł Poczekajło
<b>442</b>	Monitoring the Efficiency of Automatic Screens Based on Computational Analysis of Wastewater Level Variations	Piotr Maciolek, Robert Suszynski, Aneta Hapka and Karolina Napiorkowska
<b>491</b>	Open Channel Flow Measurement Using an Electromagnetic Submersible Flowmeter	Piotr Maciolek and Robert Suszynski
<b>727</b>	Modification of the classic approach to minimizing the risk of a securities portfolio	Anna Szczepańska-Przekota
<b>763</b>	Partnerships as a Key to Enhancing the Digital Transformation of Agriculture: Analyzing Farmers' Propensity to Collaborate and Finance	Agnieszka Kurdyś-Kujawska and Michał Soliwoda

**IS59: New Generation Computing in Engineering, Life Science and Economy**

Chair: Prof. Piotr Nikończuk

Thursday 11 September - 13:30 - 15:00

Room 8

Session Code	Title	Main Author
<b>743</b>	The impact of AI on the economic development of the gaming industry	Tomasz Królikowski, Marcin Olkiewicz and Joanna Dyczkowska
<b>754</b>	Smart ports in Poland: The digital transformation of maritime logistics on the example of the ports of Gdańsk, Gdynia, and Szczecin–Świnoujście	Tomasz Królikowski, Weronika Kosek and Norbert Chamier-Gliszczyński
<b>759</b>	Valorisation of the attractiveness of the Polish seaside real estate market in the era of military threats using GIS tools	Tomasz Królikowski and Dariusz Kloskowski
<b>761</b>	Optimization of production processes using simulation – FlexSim	Tomasz Królikowski, Dominik Katarzynski and Norbert Chamier-Gliszczyński
<b>840</b>	AI in the Digital Transformation of Technical Protection Systems: The SAFEGUARD Framework and Pilot Study	Tomasz Królikowski, Maciej Grunt, Andrzej Błazejewski and Sebastian Pecolt
<b>816</b>	The Impact of the Implementation of the Internet of Things on the Insurance Sales Process and the Financial Performance of Insurance Companies – A Simulation of the Indirect Insurance Distribution Process in Poland	Tomasz Królikowski, Norbert Chamier-Gliszczyński and Karolina Willa

**IS59: New Generation Computing in Engineering, Life Science and Economy**

Chair: Prof. Piotr Nikończuk

Thursday 11 September - 15:35 - 17:35

Room 5

Session Code	Title	Main Author
<b>765</b>	Artificial Intelligence in the Food Industry: Adoption, Technologies, Barriers – The Example of Poland	Agnieszka Kurdyś-Kujawska, Patrycjusz Zarębski and Norbert Chamier-Gliszczyński
<b>766</b>	Food producers in the digital era: analysis of the online presence and e-commerce maturity of regional food producers in Poland	Luiza Ossowska, Dorota Janiszewska and Agnieszka Kurdyś-Kujawska
<b>768</b>	Reverse engineering as a tool of protection of cultural heritage. A case study	Tomasz Królikowski, Agnieszka Ubowska, Krzysztof Wasilewski and Piotr Zmuda Trzebiatowski
<b>789</b>	Short food supply chains versus meal planning using artificial intelligence	Norbert Chamier-Gliszczyński, Agnieszka Kurdyś-Kujawska and Patrycjusz Zarębski
<b>822</b>	The use of low-cost RFID chips in robotic automation systems	Tomasz Królikowski, Grzegorz Andrzejewski and Artur Karasinski
<b>828</b>	Application of XGBoost in investment fund analysis - selected case studies	Agnieszka Moskal
<b>846</b>	Magnetic levitation of a ferromagnetic sphere using a PID controller and heuristic optimization method	Tomasz Królikowski, Sebastian Pecolt, Andrzej Błażejewski, Szymon Ekman, Piotr Zmuda Trzebiatowski and Maciej Grunt

**IS59: New Generation Computing in Engineering, Life Science and Economy**

Chair: Prof. Piotr Nikończuk

Thursday 4 September - 13:00 - 15:00

Online room 7

Session Code	Title	Main Author
<b>811</b>	The concept of a tool for identifying key parameters of electric vehicle batteries in terms of fire safety	Norbert Lech, Agata Krystosik-Gromadzińska and Renata Dobrzyńska
<b>821</b>	Examples of the Application of the Free Disposal Hull (FDH) Method as a Tool for Measuring the Efficiency of Public Institutions from the Perspective of Public Finance in Various Countries	Karolina Willa
<b>812</b>	Methods for estimating energy demand for electric refrigerated vehicles	Diana Pietryga and Norbert Lech
<b>825</b>	Synchronisation of the situation on the stock market with the indicators of market sentiment using the example of selected stock exchanges	Anna Szczepańska-Przekota
<b>830</b>	Structural breakpoint in the relationship between retail diesel prices in Poland, crude oil prices, and the exchange rate	Grzegorz Przekota

***IS59: New Generation Computing in Engineering, Life Science and Economy***

Chair: Prof. Piotr Nikończuk

Friday 5 September - 13:00 - 15:00

Online room 4

Session Code	Title	Main Author
<b>839</b>	The method to verify the impact of EV range variation on its travel time	Norbert Lech, Piotr Nikończuk and Piotr Wiśniowski
<b>764</b>	Smart Because It's Local How Direct Agricultural Sales Fit into the Smart City Concept	Patrycjusz Zarębski, Agnieszka Kurdyś-Kujawska and Norbert Chamier-Gliszczyński
<b>849</b>	Farm Assets and Their Sources of Financing: Application of Canonical Correlation Analysis (CCA)	Agnieszka Strzelecka, Ewa Szafraniec-Siluta, Roman Ardan and Danuta Zawadzka

**IS60: SOAP4EARTH: Smart Observation and Preservation for Earth**

Chair: Stefano Marrone

Thursday 4 September - 13:00 - 15:00

Online room 5

Session Code	Title	Main Author
714	Superpixel-based plastic litter detection in UAV hyperspectral imaging using spectral-textural features	Gaetano Settembre, Grazia Gargano and Nicoletta Del Buono
720	Fine-Tuning the Prithvi Foundation Model for Crop-Type and Health Mapping in Smallholder Farms	Karam Tomotaki-Dawoud, Raghu Chaliganti, Shreya Champakbhai Chauhan, Pia Wolfram, Ozan Turkes and Sebastian Bosse
760	Applying AI for Improved Detection of Debris in Dumpsites and Floating Matter via Spatio-Temporal Fusion of Sentinel-2 and PlanetScope Satellite Data	Nicola Nicaastro, Nicolò Taggio, Giulio Ceriola, Maria Kremezi, Vassilia Karathanassi and Antonello Aiello
770	Deep Learning for NO2 Forecasting in Italy: An LSTM-Based Approach	Alessandro Fania, Nicola Amoroso, Antonio Lacalamita, Tommaso Maggipinto, Alfonso Monaco and Roberto Bellotti
773	Deformable Attention Mechanisms applied on Object Detection, case of Remote Sensing images.	Anasse Boutayeb, Iyad Lahsen-Cherif and Ahmed El Khadimi
779	Detecting vegetation patterns in satellite images: SILVIA, a segmentation-based approach	Maria Stella de Biase, Roberta De Fazio and Stefano Marrone

***IS61: Sustainable Innovation for the Digital IT era***

Chair: Prof. Yoshimasa Masuda

Thursday 11 September - 15:35 - 17:35

Room 2

Session Code	Title	Main Author
835	Call to Action: Sustainable Innovation through Evolving Architecture to Support AI Infused Applications	Joseph Taylor and Yoshimasa Masuda
853	Toward Sustainable Innovation: Digital Transformation with AI Strategy	Yoshimasa Masuda, Taishi Sassano and Rashmi Jain





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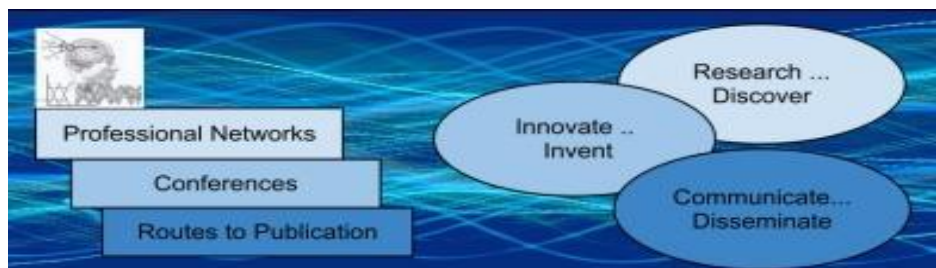
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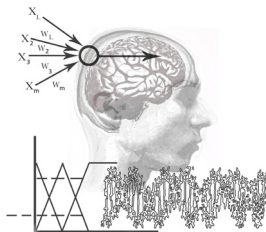
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