Smart Digital Futures 2022

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Conference Programme

20-22 June 2022
Rhodes, Greece

Contents

Chairs Welcome

Welcome to the Smart Digital Futures 2022 (SDF-22) multi-theme conference, held in hybrid format on the island of Rhodes in Greece and also using the KES-Online virtual conference platform, during 20-22 June 2022.

The consequences of the Covid-19 pandemic are still being felt for the third year in succession, the effects of the conflict in Ukraine are being felt by many people including some of our members, and there are other continuing problems in the world. We offer condolences and sympathy to those who have sadly lost loved ones or colleagues or been affected in other ways, and we look forward to better times.

SDF-22 is an amalgamation of six KES conferences: Agent and Multi-Agent Systems - Technology and Applications (KES-AMSTA-22), Intelligent Decision Technologies (KES-IDT-22), Human Centred Intelligent Systems (KES-HCIS-22), Innovation in Medicine and Healthcare (KES-InMed-22), Smart Education and e-Learning (KES-SEEL-22) and Smart Transportation Systems (KES-STS-22). Although the conferences share a common forum, each one has its own Chair and International Programme Committee.

SDF-22 was organised to take place using an innovative hybrid format. Delegates could opt to attend the conference in person on the island of Rhodes, or if it was not possible for them to travel, they could choose to take part virtually using the KES-Online cloud-based conference platform. In either case delegates could submit a paper and present it, at the venue, or online. The best papers submitted to the conference were presented and published in several volumes of proceedings in the Smart Innovation Systems and Technology series by Springer-Verlag.

Delegates registered for SDF-22 may attend any of the live sessions at the venue, or view sessions from any of the conferences online and mix with the communities of the others through the online lounge.

Smart Digital Futures was organised as part of the KES International conference portfolio. For over a decade the mission of KES International has been to provide a professional community, networking and publication opportunities for all those who work in knowledge-intensive subjects. At KES we are passionate about the dissemination, transfer, sharing and brokerage of knowledge. The KES community consists of several thousand experts, scientists, academics, engineers, students and practitioners who participate in KES activities. KES runs conferences in different countries of the world on leading edge topics including Intelligent Systems, Sustainability in Energy and Buildings, Innovation, Knowledge Transfer and Enterprise, and Digital Media. KES provides routes to publication, such as journals, book series, and

online publications, both through its own media and in conjunction with major publishers. KES also provides knowledge transfer services and consultancy.

The aim of Smart Digital Futures was to bring together researchers working at the leading edge of developments in smart systems and intelligent technology theory and applications. This programme contains 190 papers, each selected after full peer review by members of the International Programme Committees of the conferences.
 We thank the keynote speakers for providing informative accounts of the latest research in their areas:

Associate Professor Dr. Smaranda Belciug, University of Craiova, Romania (title of talk 'Artificial Intelligence in Cancer');

Associate Professor Bill Kapralos, Ontario Tech University, Canada, (title of talk 'Immersive Technologies and intelligent avatars for medical education');

Professor Chee Peng Lim, Deakin University, Australia (title of talk 'Research and Innovation in Smart Technologies: Principles and Paradigms');

Professor Yoshimasa Masuda, Carnegie Mellon University, USA (title of talk 'Digital Strategy and Enterprise Architecture for Society 5.0 and Industry 4.0');

Professor Stefania Montani, University of Piemonte Orientale, Italy (title of talk 'Mining and understanding medical processes: can we open the "black box"?');

We thank the General Chairs and Programme Chairs of the SDF-22 conferences for their hard work and dedication. We appreciate the efforts of those organising and chairing special sessions, members of the International Programme Committees and reviewers and we thank them. We are grateful to authors for the papers they have contributed to the conference, and to delegates for their attendance and we give them our thanks.

Finally, we thank the KES International administration team for their efforts.

Whether you attend the conference at the venue on Rhodes or online we thank you for your participation. We hope you find the conference useful and informative, we wish you all well, and we look forward to seeing you at another of our events in the future.

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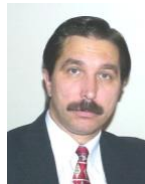
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Dr. Heinz- Dietrich Wuttke	TU Ilmenau, Germany
Prof. Stelios Xinogalos	Department of Applied Informatics, University of Macedonia, Greece
Prof. Yoshiyuki Yabuuchi	Shimonoseki City University, Japan
Prof. Nunzio Casalino	Guglielmo Marconi University & Luiss Business School, Italy

STS-22

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Dr. Changfu Zou	Chalmers University of Technology, Sweden

Keynote Talks

Assoc. Prof. Dr. Smaranda Belciug
University of Craiova, Romania

Artificial Intelligence in Cancer

Abstract: The aim of this lecture is to establish a psychological connection with the audience, for each person to truly understand the vast implication of cancer in a person's life, whether her/his own health is involved, or a loved one's. Dealing with cancer implies physical, psychological, and financial issues. At first, we shall take a walk down history lane and see how cancer was seen in the past, followed by a recap from nowadays. Artificial Intelligence algorithms and a statistical analysis handbook, which needs to be performed anytime we are dealing with diagnosis, new clinical trials, new drugs, new oncological surgeries are presented also. Last, but not least, we shall paint a glimpse of the future, in which a trusted friend, Artificial Intelligence, steps in to lend us a helping hand.

Biography: Smaranda Belciug is an Associate Professor at the Department of Computer Science, Faculty of Sciences, University of Craiova and Data Scientist at the Molecular Tumor Board - Multidisciplinary Commission for Personalized Therapeutic Indication based on a Comprehensive Molecular (Genetic) Assessment. She is a member of the Editorial Board at Springer Nature-BMC Medical Informatics and Decision Making, at the Journal of Medical Artificial Intelligence, and at the International Journals of Computers in Healthcare.

Her main research interests include Artificial Intelligence applied in the Healthcare system and Statistics. She is the authors of the two monographs "Artificial Intelligence in Cancer: diagnostic to tailored treatment", Elsevier, 2020, and "Intelligent Decision Support Systems - A journey to Smarter Healthcare", Springer 2020.

She is an enthusiastic partisan of the multidisciplinary approach in scientific studies, and all her research is driven by this reason. This has been recognized at multiple levels, from the wide variety of nature of the journals she has published into to the variety of journals and conferences that she reviews for.

Associate Professor Bill Kapralos
Ontario Tech University, Canada

Immersive Technologies and intelligent avatars for medical education

Abstract: The technologies of virtual reality (VR), augmented reality (AR), serious games, virtual worlds and social networks have become collectively known as immersive technologies and are able to engage users of all ages. Central to many interactive digital experiences are virtual characters known as avatars, that is, digital representations of the self that enable individuals to interact within a virtual environment. By adopting personalized and intelligent avatars, users are able to interact with each other in virtual worlds and foster cohesive social relations that can lead to changes in emotions and cognitive function. The continuous increase in computational processing power and accompanying decrease in the size of electronic components has led to the decreasing cost and rising availability of consumer-level immersive technologies that have helped advance the adoption of immersive technologies in recent years. Advances in areas such as graphics, artificial intelligence (AI), sensors and speech synthesis have led to increases in the levels of fidelity and have enabled increasingly more natural interactions with avatars. Within the healthcare field, immersive technologies and VR/AR in particular, are not so much technologies of the future but rather, of the present where researchers, medical professionals and educators are finding innovative ways to leverage immersive technologies and transform both healthcare teaching and practice; this has only accelerated given the move to remote learning to facilitate COVID-19 shutdowns. In this presentation a brief overview of the application of immersive technologies (AR, VR, and serious games) and intelligent avatars (with a particular focus on the detection and expression of emotions), in medical education will be provided. Emphasis will be placed on the benefits and limitations of existing technologies, what currently can and cannot be, and various open problems that must be addressed before the application of immersive technologies becomes more widespread in medical education.

Biography: Bill Kapralos is an Associate Professor within the maxSIMhealth Laboratory at Ontario Tech University and an Honourable Guest Professor at Shizuoka University (Hamamatsu, Japan). He is also the Technical Lead of the Collaborative Human Immersive Interaction Laboratory (CHISIL), Sunnybrook Health Sciences Centre in Toronto. His current research interests include: immersive technologies, serious gaming, multi-modal virtual environments/simulation/reality, the perception of auditory events, and 3D (spatial) sound generation. With funding from various government and industry sources, he has led several large interdisciplinary and international virtual simulation/serious gaming research projects. He was recently awarded an Ontario Tech University Research Excellence Chair and a Greek Diaspora Fellowship (sponsored by the Stavros Niarchos Foundation). He is a past recipient of an Australian Government 2018 Endeavour Executive Fellowship to conduct research in Australia, a past recipient of a Natural Sciences and Engineering Research Council of Canada (NSERC) and Japan Society for the Promotion of Science (JSPS) Fellowship, a past recipient of an IBM CAS Faculty Award, and a past co-recipient of a Google Faculty Award.

Professor Chee Peng Lim
Deakin University, Australia

Research and Innovation in Smart Technologies: Principles and Paradigms

Abstract: Advances in digital and smart technologies have transformed many aspects of our daily activities. Over the years, researchers and practitioners have successfully created and implemented a variety of smart technologies to solve dynamic and complex tasks in different domains. In this talk, several computational intelligence (CI) principles and paradigms for designing and developing smart systems, e.g., neural computing, fuzzy computing, and evolutionary computing, will be explained. Application of the resulting CI-powered smart systems to undertaking data-based learning and decision support tasks will be demonstrated, which include real-world healthcare and industrial problems. Implications of smart technologies for advancing our digital futures in the era of Industry 4.0 and beyond will be discussed.

Biography: Chee Peng Lim received his Ph.D. degree from the University of Sheffield, UK, in 1997. His research focuses on the design and development of computational intelligence-based systems for pattern classification, data analytics, decision support, and optimisation, with application to medical prognosis and diagnosis, fault detection and classification, as well as manufacturing process optimisation. He has published over 500 technical papers in journals, conference proceedings, and books, and received 8 best paper awards in international conferences. His research has received the support of several prestigious fellowships for fostering international collaboration, which include the Australia-India Senior Visiting Fellowship (by Australian Academy of Science), Australia-Japan Emerging Research Leaders Exchange Program (by Australian Academy of Technological Sciences and Engineering), Commonwealth Fellowship (at University of Cambridge, UK), Fulbright Fellowship (at University of California, Berkeley, USA), and Visiting Scientists Program of the Office of Naval Research Global (at Harvard University and Stanford University, USA). Together with research partners, a number of award-winning smart software systems have been developed for real-world applications, viz., Innovation and New Product Exposition Show (Gold Medal), USA; British Innovation Show (Gold and Special Award: Double Gold of the International Invention of the Year), UK, and the Geneva International Exhibition of Inventions (Gold Medal), Switzerland.

Professor Yoshimasa Masuda
Carnegie Mellon University, USA

Digital Strategy and Enterprise Architecture for Society 5.0 and Industry 4.0

Abstract: Information societies and Enterprises face crucial challenges currently and Society 5.0 can contribute to a supersmart society, while Industry 4.0 becomes important in the manufacturing industry. The development of new business models is promoted with digital platforms and architectures for Society 5.0 and Industry 4.0. Therefore, the adaptive integrated digital architecture framework (AIDAF) for Society 5.0 and Industry 4.0 is expected to promote, design, and implement the digital platforms in many industries from now on. In this talk, first, I introduce that various energy management systems and related smart energy digital platforms are designed in an alignment to digital IT strategy for sharing economy toward Society 5.0, with the AIDAF framework for Design Thinking Approach with Risk Management, that will lead to the Tokyo Smart Energy Architecture Vision. Besides, I brief how to apply the AIDAF for enabling Industry 4.0 in healthcare industry, covering the related digital platforms and robotics. Last, I introduce the AIDAF with Human computer interaction (HCI) - artificial intelligence (AI) digital healthcare platforms architected to improve the healthcare status of patients with lifestyle-related diseases such as diabetes, and osteoporosis, as the latest trend.

Biography: Yoshimasa Masuda is Teaching Faculty, Instructor at Carnegie Mellon University - ISR (Institute for Software Research) and Professor at School of Management in Tokyo University of Science and Graduate school of Keio University (specially appointed), with Sr. role in NTT Data Institute of Management Consulting. He has more than 14 years' experience in enterprise in many industries. He earned a Ph.D. degree in Keio University. He had experienced many global projects, international assignments in IBM. He started up the global enterprise architecture in Global Pharmaceutical company and worked as Sr. IT Director in Global Robotics company in 2019, and started the "Global Digital Strategy Consulting" in NTT Data group, Institute of Management Consulting as Senior Management. He completed the Executive Education (MoT) in MIT in 2011, and he has joined Carnegie Mellon University since 2018. He was selected as "Distinguished Member" of AIS (Association for Information Systems) in 2021. His research interests are enterprise architecture in Digital era, digital healthcare, IT management. Yoshimasa Masuda is author of the successful AIDAF - Adaptive Integrated Digital Architecture Framework

and the book Enterprise Architecture for Global Companies in a Digital IT Era, from Springer Nature. He got the "Global Achievement Award - Innovative Solutions Award 2021" from worldwide ISACA, by establishing the AIDAF framework.

Professor Stefania Montani
University of Piemonte Orientale, Italy

Mining and understanding medical processes: can we open the "black box"?

Abstract: Healthcare organizations log enormous quantities of data in their information systems, about the diagnostic or therapeutic activities that are executed to manage or prevent diseases. In particular, the sequence of activities executed to care a single patient is called a trace. The analysis of patient traces by means of machine learning techniques allows medical experts and administrators to better understand the actual processes implemented at the organization, identifying flaws and optimizing the quality of the service they offer.

In this presentation, we will focus on process mining from patient traces, and on deep learning trace classification: both areas rely on strong machine learning tehcniques, which, however, suffer from a major drawback, i.e., their "black box" nature. We will discuss this issue, and propose possible approaches that can provide more transparency to the algorithmic output.

Schedule – Monday 20 June

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
	Opening Ceremony Prof Robert J Howlett & Prof Lakhmi Jain 9:00 - 9:15					
	Keynote Speaker 1 Assoc. Prof. Smaranda Belciug University of Craiova, Romania Artificial Intelligence in Cancer 9:15 - 10:15					
	Networking Break 10:15-10:30					

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
Session Details	AMSTA-01 Session Title: Autonomous Agents and Systems Chair: Prof. Mario Kušek	IDT-01 Session Title: General Track 1 Chair: Dr. Jesus Bobadilla	SEEL-01 Session Title: Smart Education Chair: Dr. Karsten Henke and Dr. Carrie Anna Courtad	STS-01 Session Title: Intelligent transport Chair: Jiaming Wu	HCIS-04 Session Title: Smart Systems and Architectures Chairs: Milan Simic	INMED-01 Session Title: Artificial Intelligence, Machine Learning, Deep Learning in Medical Applications - Part 1 Chair: Mihaela Luca & Anca Ignat
EEST Time	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30
	Lunch Break 12:30-13:30					
	Keynote Speaker 2 Prof. Chee Peng Lim Deakin University, Australia Research and Innovation in Smart Technologies: Principles and Paradigms 13:30 - 14:30					

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
	Networking Break 14:30-14:45					
Session Details	AMSTA-04 Session Title: Intelligent Agents in health, wellness and human development environments applied to health and medicine Chair: Prof. Rosario Baltazar Flores	IDT-02 Session Title: General Track 2 Chair: Prof. Irenesuz Czarnowski	SEEL-02 Session Title: Smart Pedagogy Chair: Dr. Vladimir Uskov	STS-02 Session Title: Traffic safety and behavior Chair: Bo Yu	HCIS-03 Session Title: Edge Computing Technologies for Mobile Computing and Internet of Things (2nd Edition) Chairs: Abdellah Chehri	INMED-02 Session Title: Artificial Intelligence, Machine Learning, Deep Learning in Medical Applications - Part 2 Chair: Mihaela Luca & Anca Ignat
EEST Time	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00

Schedule – Tuesday 21 June

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
	Keynote Speaker 3 Prof. Dr. Yoshimasa Masuda Carnegie Mellon University, USA Digital Strategy and Enterprise Architecture for Society 5.0 and Industry 4.0 9:15 - 10:15					
	Networking Break 10:15 - 10:30					
Session Details	AMSTA-02 Session Title: Agent-based Modeling and Simulation Chair: Prof. Roman Šperka	IDT-04 Session Title: Intelligent Processing and Analysis of Multidimensional Signals and Images Chair: Prof. Roumen Kountchev	HCIS-01 Session Title: Human-Centred Intelligent Systems - Part 1 Chairs: Yoshimasa Masuda	SEEL-04 Session Title: Smart University Chair: Dr. Nunzio Casalino	STS-03 Session Title: Low emission transport Chair: Kun Gao	SEEL-05 Session Title: Digital Transformation of Education and Economics in Smart University Chair: Dr. Natalia A. Serdyukova
EEST Time	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
	Lunch Break 12:30-13:30					
	Keynote Speaker 4 Prof. Bill Kapralos Ontario Tech University, Canada Immersive Technologies and Intelligent Avatars for Medical Education 13:30 - 14:30					
	Networking Break 14:30 - 14:45					

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
Session Details	AMSTA-05 Session Title: Multi-Agent System and Smart Environments Chair: Prof. Jessica Chen-Burger	IDT-03 Session Title: Recent Advances in Data Analysis and Machine Learning Chair: Prof. Margarita N. Favorskaya	HCIS-02 Session Title: Human-Centred Intelligent Systems - Part 2 Chairs: Alfred Zimmermann	SEEL-06 Session Title: Smart e-Learning 1 Chair: Dr. Hengbin Yan	INMED-04 Session Title: Biomedical Engineering, Trends, Research and Technologies Chair: Margarita Ramírez Ramírez, Esperanza Manrique Rojas	SEEL-07 Session Title: Digital Humanities and Social Sciences for Smart University Development: the Innovative Methods, Models and Technologies Chairs: Dr. Svetlana A. Gudkova & Dr. Lyudmila V. Glukhova
EEST Time	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00	14:45 - 17:00

Schedule – Wednesday 22 June

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
	Keynote Speaker 5 Prof. Stefania Montani University of Piemonte Orientale, Italy Mining and Understanding Medical Processes: Can we Open the "Black Box"? 9:15 - 10:15					
	Networking Break 10:15 - 10:30					
Session Details	SEEL-03 Session Title: Smart e-Learning 2 Chair: Dr. Danguolė Rutkauskienė and Dr. Petra Poulova	IDT-08 Session Title: Signal Processing and Pattern Recognition Techniques for Modern Decision-Making Systems Chair: Dr. Paolo Crippa	INMED-03 Session Title: Digital Architecture and Economics for Internet of Things, Big data, Cloud and Mobile IT in Healthcare Chair: Yoshimasa Masuda, Yen-Wei Chen	AMSTA-03 Session Title: Business Economics and Agent-based Modeling Chair: Prof. Hiroshi Takahashi	IDT-09 Session Title: Blockchains and Intelligent Decision Making Chair: Prof. Zhaojun Han and Prof. Xiangpei Hu	

	Room 1	Room 2	Room 3	Room 4 (Run via KES Online)	Room 5 (Run via KES Online)	Room 6 (Run via KES Online)
EEST Time	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30	10:30-12:30	
	Lunch Break 12:30-13:30					
Session Details	SEEL-08 Session Title: Smart Education for Children with Educational Special Educational Needs Chair: Dr. Margarita Stankova	IDT-07 Session Title: Artificial Intelligence Innovation in Daily Life and Blockchains and Intelligent Decision Making Chair: Dr. Hadi Saleh and Prof. Xiangpei Hu	INMED-05 Session Title: Support System/Software for Medical Care and Healthcare Chair: Rui Xu, Satoshi Tanaka	IDT-06 Session Title: Decision Making Theory for Economics and Signal Processing and Pattern Recognition Techniques for Modern Decision-Making Systems Chair: Prof. Takao Ohya and Dr. Paolo Crippa	IDT-05 Session Title: Recent Advances in Data Analysis and Machine Learning: Paradigms and Practical Applications Chair: Prof. Margarita N. Favorskaya	
EEST Time	13:30 - 15:30	13:30 - 15:30	13:30 - 15:30	13:30 - 15:30	13:30 - 15:30	
	Closing Ceremony 15:45 - 16:00					

AMSTA Paper Presentations

AMSTA-01
Monday 20th June 2022
Time: 10:30 - 12:30 EEST
Room 1

AMSTA-01: Autonomous Agents and Systems
Chair: Prof. Mario Kušek

PROSE Paper No	Paper Title / Authors
ams22-003	Cost-Aware Dynamic Task Sharing among Decentralized Autonomous Agents: Towards Dynamic Patient Sharing among Hospitals Dr. Hisashi Hayashi
ams22-018	An Investigation into Influences of Tweet Sentiments on Stock Market Movements Mr Zhicheng Hao, Dr Yun-heh (jessica) Chen-burger
ams22-016	Impact of COVID-19 on Digital Business Models - Focus on Sustainability Prof. Dr. Ralf Härting, B.A. Ana Gobechia, B.A Ikkei Tatsumi
ams22-011	Queueless: Agent-Based Manufacturing for Workshop Production Dr James Gopsill, Mr Lorenzo Giunta, Dr Mark Goudswaard, Mr Martins Obi
ams22-014	Implications of exact time use for simulation of business processes' costs with TDABC approach Ph.d. Michal Halaška, Phd Roman Šperka
ams22-021	Altruistic behavior structural holes and Team performance Master Kazumasa Ninomiya, Doctor Setsuya Kurahashi

AMSTA-02: Tuesday 21st June 2022
Time: 10:30 - 12:30 EEST
Room 1

AMSTA-02: Agent-based Modeling and Simulation
Chair: Prof. Roman Šperka

PROSE Paper No	Paper Title / Authors
ams22-017	Coping with diverse product demand through agent-led type transitions Mr Martins Obi, Dr James Gopsill, Dr Mark Goudswaard, Mr Lorenzo Guinta, Dr Chris Snider
ams22-019	Negotiation-based Multi-Agent System for Ambient Conditions Control in Accordance with Multiple User Preferences Miss Katarina Mandaric, Full Professor Gordan Jezic, Emeritus Professor Ignac Lovrek, Assistant Professor Pavle Skocir
ams22-009	A Normative Multi-Objective Based Intersection Collision Avoidance System Ms Maha Riad, Dr. Fatemeh Golpayegani
ams22-012	Mobile client for crop yield prediction based on weather data Msc Ivan Kralj, Prof. Gordan Jezic;, Assist. Prof. Pavle Skocir
ams22-025	Development of a transport model dedicated to an agent-based simulation of land use Associate Professor Simon Gorecki, Professor Traore Mamadou Kaba, Associate Professor Gaussier Nathalie, Associate Professor Zerguini Seghir

AMSTA-03: Wednesday 22nd June 2022
Time: 10:30 - 12:30 EEST
Room 4

AMSTA-03: Business Economics and Agent-based Modeling
Chair: Prof. Hiroshi Takahashi

PROSE Paper No	Paper Title / Authors
ams22-030	How can we make the best use of intellectual capital?: Building an analysis system through agent-based models Mr. Kazuya Morimatsu, Prof. Hiroshi Takahashi
ams22-027	Construction of a news classification system related to information security incidents Mr. Jiansen Zhao, Professor Hiroshi Takahashi
ams22-028	System for Analyzing Innovation Activities in Mergers and Acquisitions through Measuring Technological Distance Student Nozomi Tamagawa, Professor Hiroshi Takahashi
ams22-033	A Customer Experience Mapping for Knowledge Extraction from Social Simulation Results Dr. Kikuchi Takamasa, Prof. Takahashi Hiroshi, Dr. Kunigami Masaaki, Prof. Terano Takao
ams22-035	Corporate Governance Considerations for Driving ESG Performance Student Akihiko Matsubara, Professor Kurahashi Setsuya
ams22-036	Using the Knowledge of Competent Salespeople: Modeling Business Negotiation Topics to Obtain Customers' Real Needs Professor Yoko Ishino, Mr. Eiji Takaki

AMSTA-04: Monday 20th June 2022
Time: 14:45 - 17:00 EEST
Room 1

AMSTA-04: Intelligent Agents in health, wellness and human development environments applied to health and medicine
Chair: Prof. Rosario Baltazar Flores

PROSE Paper No	Paper Title / Authors
ams22-023	Use of Multi-Agent System to Classify Control EEG Signals: A Preliminary Study Eng Francisco Sierra, Phd Rosario Baltazar, Msc Miguel-angel Casillas, Msc Claudia Diaz, Phd Anabel Pineda, Msc Martha-alicia Rocha
ams22-020	Explainable AI for Autism Classification in Children Prof. Ma. Sheila Magboo, Dr. Vincent Peter Magboo
ams22-022	Voice control system through NLP as an interactive model for scalable ERP platforms in industry 4.0 Msc Tanya Rojas, Phd Rosario Baltazar, Msc Miguel Casillas, Phd Josue Del Valle, Na Na Na, Msc Martha-alicia Rocha
ams22-024	Online social networks and psychological experiences: analysis of youth perceptions through data mining Dr Bogart Yail Marquez, Dr Arnulfo Alanis, MC Irving Diaz-Hernandez, Dra Angeles Quezada
ams22-026	Implementation of an intelligent Agent for Decision making Tasks in the Hanoi Towers - IADmT Prof. Daniel Velazquez, Dr. Arnulfo Alanis, Dr. Rosario Baltazar

AMSTA-05: Tuesday 21st June 2022
Time: 14:45 - 17:00 EEST
Room 1

AMSTA-05: Multi-Agent System and Smart Environments
Chair: Prof. Jessica Chen-Burger

PROSE Paper No	Paper Title / Authors
ams22-008	A Systematic Review About Requirements Elicitation for Multi-Agent Systems Bachelor Willian Gerstberger, Dr Gilleanes Guedes, Bachelor Iderli Souza
ams22-015	Anytime Evolutionary DCOP Algorithm with Distributed Solution Stores Dr. Toshihiro Matsui
ams22-013	Evaluating trust and reputation models for IoT environment Mr. Mohammad Al-shamaileh, Dr. Patricia Anthony, Dr. Stuart Charters
ams22-002	Temporal Logic in Multi-Agent Environment Professor Vladimir Rybakov

HCIS Paper Presentations

HCIS-01: Tuesday 21st June 2022
Time: 10:30 - 12:30 EEST
Room 3

HCIS-01: Human-Centred Intelligent Systems - Part 1
Chairs: Yoshimasa Masuda

PROSE Paper No	Paper Title / Authors
hcis22-018	Vision Paper for Sharing Economy and Digital Platforms toward Society 5.0 Prof. Yoshimasa Masuda; Prof. Zimmermann Alfred, Prof. Rashimi Jain, Prof. Osamu Nakamura, Prof. Schmidt Rainer, Mr. Yoshimitsu Umahashi
hcis22-001	A Collaborative Intelligence Approach to Fighting COVID-19 False News: A Chinese case Dr. Zhan Liu; Prof. Nicole Glassey Balet, Mr. Shaban Shabani, Prof. Maria Sokhn, Prof. Xianyun Yu
hcis22-015	Empirical Insights into the Challenges of Implementing Digital Twins Dr. Michael Möhring; Ms. Sofia Blessmann, Ms. Verena Breimhorst, Dr. Barbara Keller, Ms. Kerstin Müthing, Ms. Charlotte-fe Radowski
hcis22-019	Same Speaker Identification with Deep Learning and Application to Text-dependent Speaker Verification Student Manaka Takamizawa; Associate Professor Yasuo Horiuchi, Professor Shingo Kuroiwa, Professor Satoru Tsuge

HCIS-02: Tuesday 21st June 2022
Time: 14:45 - 17:00 EEST
Room 3

HCIS-02: Human-Centred Intelligent Systems - Part 2
Chairs: Alfred Zimmermann

PROSE Paper No	Paper Title / Authors
hcis22-004	Empirical Study on the State of Practice of Information Security Management in Local Government Dipl.-inform. Frank Moses; Prof. Thomas Kemmerich, Prof. Kurt Sandkuhl
hcis22-006	A Hybrid Automatic Facial Expression Recognition Based on Convolutional Neuronal Networks and Support Vector Machines Techniques Phd Hasna Chaibi; Phd Abdellah Chehri, Phd Abdessamad El Rharras, Phd Student Samira Naim, Phd Rachid Saadane
hcis22-010	Patient and therapist model attributes for social robot stroke therapies based on implicit knowledge from expert interviews Msc. Alexandru-nicolae Bundea; Prof. Dr. Peter Forbrig
hcis22-012	An Evolutionary Computing based Approach for Optimal Target Coverage in Wireless Sensor Networks Mr. Sheikh Nooruddin; Mr. Md. Milon Islam, Dr. Fakhri Karray
hcis22-016	Construction Industry in the UAE Part A: Analysis of Business Practice and Opportunities in Comparison to the Other Gulf States Eng. Aleya Sharif Zadeh; Prof. Peter Dabnichki, Dr. Lucy Lunevich
hcis22-017	Construction Industry in the UAE Part B: Role in the Economic Transition Across the United Arab Emirates Eng. Aleya Sharif Zadeh; Prof. Peter Dabnichki, Dr. Lucy Lunevich

HCIS-03: Monday 20th June 2022
Time: 14:45 - 17:00 EEST
Room 5

HCIS-03: Edge Computing Technologies for Mobile Computing and Internet of Things (2nd Edition)

Chairs: Abdellah Chehri

PROSE Paper No	Paper Title / Authors
hcis22-002	Distributed Ledger Model for Agriculture Product Supply Chain Dr Mohd Nordin Abdul Rahman
hcis22-003	A Hybrid Dielectric Resonator Antenna with Dual Sense Circular Polarization for Wireless LAN Applications Mr Rajasekhar Nalanagula; Dr Abdellah Chehri, Dr Nareshkumar Darimireddy, Dr Runa Kumari
hcis22-005	Swarm Robotics: Moving from Concept to Application Mr Baptiste Septfons; Dr Hasna Chaibi, Pr Abdellah Chehri, Dr Rachid Saadane, Dr Smail Tigani
hcis22-009	Data Lake Conception For Smart Farming: A Data Migration Strategy For Big Data Analytics Dr El Mehdi El Mehdi Ouafiq; Pr Abdellah Abdellah Chehri, Pr Wahbi Mohammed, Pr Rachid Rachid Saadane

HCIS-04: Monday 20th June 2022
Time: 10:30 - 12:30 EEST
Room 5

HCIS-04: Smart Systems and Architectures
Chairs: Milan Simic

PROSE Paper No	Paper Title / Authors
hcis22-020	Transition to Electrical and Autonomous Vehicles in China Mr. Ziyuan Zhao; Dr. Milan Simic
hcis22-021	The Adoption Appraisal of Autonomous Vehicles Mr Milan Todorovic; Mr Abdulaziz Aldakkhelallah, Dr Milan Simic
hcis22-014	Keep Your Distance, Automated Driving Vehicle! ?Toward an Accurate Localization Solutions for Automotive Applications Professor Abdellah Chehri; Professor Rachid Saadane, Professor Alfred Zimmermann
hcis22-011	Towards a Management System for Regulative Compliance of Information-intensive Medical Devices Dipl. Ing. Maciej Piwowarczyk Vel Dabrowski; Prof. Dr.-ing. Kurt Sandkuhl
hcis22-013	Method for Assessing Social Acceptability of AI Service Systems Prof. Hironori Takeuchi; Ms. Azuki Ichitsuka, Mr. Taketo Iino, Mr. Shoki Ishikawa, Ms. Miyuki Maeda, Ms. Miyazawa Yuka

IDT Paper Presentations

IDT-01: Monday 20th June 2022
Time: 10:30 - 12:30 EEST
Room 2

IDT-01: General Track 1
Chair: Dr. Jesus Bobadilla

PROSE Paper No	Paper Title / Authors
idt22-004	Recommendation versus Regression Neural Collaborative Filtering Jesus Bobadilla, Santiago Alonso, Abraham Gutierrez, Alvaro Gonzalez
idt22-018	Heuristic Approach to Improve the Efficiency of Maximum Weight Matching Algorithm Using Clustering Liu He, Ryosuke Saga
idt22-032	Sequence Classification via LCS Riccardo Dondi
idt22-037	Assured Multi-Agent Reinforcement Learning with Robust Agent-Interaction Adaptability Joshua Riley, Radu Calinescu, Colin Paterson, Daniel Kudenko, Alec Banks
idt22-064	On Modeling the Insurance Claims Data Using a New Heavy-tailed Distribution Abdelaziz Alsubie

IDT-02: Monday 20th June 2022
Time: 14:45 - 17:00 EEST
Room 2

IDT-02: General Track 2
Chair: Prof. Irenesuz Czarnowski

PROSE Paper No	Paper Title / Authors
idt22-003	Latent Chained Comments to Retweet Extraction on Twitter Ryusei Takagi, Yasunobu Sumikawa
idt22-019	Digital Cultural Heritage Twins: New Tools for a Complete Fruition of the Cultural Heritage Entities Gian Piero Zarri
idt22-030	Arabic Speech Processing: State of the Art and Future Outlook Naim Terbeh, Rim Teyeb, Mounir Zrigui
idt22-031	Inter-rater Agreement Based Risk Assessment Scheme for ICT Corporates Roberto Cassata, Gabriele Gianini, Marco Anisetti, Valerio Bellandi, Ernesto Damiani, Alessandro Cavaciuti
idt22-039	Development of a Telegram Bot to Determine the Level of Technological Readiness Darya I. Suntsova, Viktor A. Pavlov, Zinaida V. Makarenko, Petr P. Bakholdin, Alexander S. Politsinsky, Artem S. Kremlev, Alexey A. Margun
idt22-042	Design of Multiprocessor Architecture for Watermarking and Tracing Images Using QR Code Jalel Baaouni, Hedi Choura, Faten Chaabane, Tarek Frikha, Mouna Baklouti

IDT-03: Tuesday 21st June 2022
Time: 14:45 - 17:00 EEST
Room 2

IDT-03: Recent Advances in Data Analysis and Machine Learning
Chair: Prof. Margarita N. Favorskaya

PROSE Paper No	Paper Title / Authors
idt22-043	NIR-SWIR Spectroscopy and Imaging Techniques in Biomedical Applications – Experimental Results Yaniv Cohen, Ben Zion Dekel, Zafar Yuldashev, Nathan Blaunstein
idt22-051	Four-valued Interpretation for Paraconsistent Annotated Evidential Logic Yotaro Nakayama, Seiki Akama, Jair Minoro Abe, Tetsuya Murai
idt22-035	Estimation and Prediction of the Technical Condition of an Object Based on Machine Learning Algorithms under Conditions of Class Inequality Victor R. Krasheninnikov, Yuliya E. Kuvayskova, Vladimir N. Klyachkin
idt22-040	Automated System for the Personalization of Retinal Laser Treatment in Diabetic Retinopathy Based on the Intelligent Analysis of OCT data and Fundus Images Nataly Ilyasova, Nikita Demin, Aleksandr Shirokanev, Nikita Andriyanov
idt22-041	Development and Research of Intellectual Algorithms in Taxi Service Data Processing Based on Machine Learning and Modified K-means Method Nikita Andriyanov, Vitaly Dementiev, Alexandr Tashlinskiy
idt22-053	Using Machine Learning Methods to Solve Problems of Monitoring the State of Steel Structure Elements Maria Gaponova, Vitalii Dementev, Marat Suetin, Aleksandr Tashlinskii

IDT-04: Tuesday 21st June 2022
Time: 10:30 - 12:30 EEST
Room 2

IDT-04: Intelligent Processing and Analysis of Multidimensional Signals and Images
Chair: Prof. Roumen Kountchev

PROSE Paper No	Paper Title / Authors
idt22-007	Specifics of Matrix Masking in Digital Radar Images Transmitted through Radar Channel Vadim Nenashev, Anton Sentsov, Alexander Sergeev
idt22-034	Decorrelation of a Sequence of Color Images Through Hierarchical Adaptive Color KLT Roumen Kountchev, Roumiana Kountcheva
idt22-049	Moving Objects Detection in Video by Various Background Modelling Algorithms and Score Fusion Ivo Draganov, Rumen Mironov
idt22-029	Calculations by Several Methods for D-AHP Including Hierarchical Criteria Takao Ohya
idt22-016	Fuzzy Decision-Making in Crisis Situation: Crowd Flow Control in Closed Public Spaces in COVID'19 Wejden Abdallah, Oumayma Abdallah, Dalel Kanzari, Kurosh Madani
idt22-015	An Intelligent Decision Support System Inspired by Newton's Laws of Motion Nafe Moradkhani, Frederick Benaben, Benoit Montreuil, Matthieu Lauras, Clara Le Duff, Julien Jeany

IDT-05: Wednesday 22nd June 2022
Time: 13:30 - 15:30 EEST
Room 5

IDT-05: Recent Advances in Data Analysis and Machine Learning: Paradigms and Practical Applications
Chair: Prof. Margarita N. Favorskaya

PROSE Paper No	Paper Title / Authors
idt22-005	Accurate Extraction of Human Gait Patterns Using Motion Interpolation Margarita N. Favorskaya, Konstantin A. Gusev
idt22-006	Vision-based Walking Style Recognition in the Wild Margarita N. Favorskaya, Vladimir V. Buryachenko
idt22-009	Matrix Mining for Digital Transformation Nikolaj Balonin, Yury Balonin, Anton Vostrikov, Alexander Sergeev, Mikhail Sergeev
idt22-024	Using Chimera Grids to Describe Boundaries of Complex Shape Alena V. Favorskaya, Nikolay Khokhlov
idt22-025	Ultrasonic Study of Sea Ice Ridges Alena V. Favorskaya, Maksim V. Muratov
idt22-028	Technique of Central Nervous System's Cells Visualization Based on Microscopic Images Processing Alexey Medievsky, Aleksandr Zotin, Konstantin Simonov, Alexey Kruglyakov

IDT-06: Wednesday 22nd June 2022
Time: 13:30 - 15:30 EEST
Room 4

IDT-06: Decision Making Theory for Economics and Signal Processing and Pattern Recognition Techniques for Modern Decision-Making Systems
Chair: Prof. Takao Ohya and Dr. Paolo Crippa

PROSE Paper No	Paper Title / Authors
idt22-050	Multi-Kernel Analysis Method for Intelligent Data Processing with Application to Prediction Making Miltiadis Alamaniotis
idt22-008	Equilibrium Search Technique Using Genetic Algorithm and Replicator Dynamics and its Application to Food Supply Chain Model Natsuki Morita, Hayato Dan, Katsumi Homma, Hitoshi Yanami, Shota Suginouchi, Mizuho Sato, Hajime Mizuyama, Masatoshi Ogawa
idt22-014	Utilization of Big data in the Japanese Retail Industry and Consumer Purchasing Decision-making Shunei Norikumo
idt22-052	A Model of Evaluations with its Rewards for Evaluation Economy Takafumi Mizuno
idt22-060	A Lightweight and Accurate RNN in Wearable Embedded Systems for Human Activity Recognition Laura Falaschetti, Giorgio Biagetti, Paolo Crippa, Michele Alessandrini, Di Filippo Giacomo, Claudio Turchetti
idt22-062	Direction-of-Arrival Based Technique for Estimation of Primary User Beam Width Zeinab Kteish, Jad Abou Chaaya, Abbas Nasser, Koffi-Clement Yao, Ali Mansour

IDT-07: Wednesday 22nd June 2022
Time: 13:30 - 15:30 EEST
Room 2

IDT-07: Artificial Intelligence Innovation in Daily Life and Blockchains and Intelligent Decision Making
Chair: Dr. Hadi Saleh and Prof. Xiangpei Hu

PROSE Paper No	Paper Title / Authors
idt22-020	Perception Of 3D Scene Based On Depth Estimation And Point-Cloud Generation Shadi Saleh, Shanmugapriyan Manoharan,Julkar Nine, Wolfram Hardt
idt22-021	Machine Learning-Based Crime Prediction Hadi Saleh, Anastasia Sakunova, Albo Jwaid Furqan Abbas, Mohammed Shakir Mahmood
idt22-063	Using the AHP Method to Select an Electronic Documentation Management System for Polish Municipalities Oskar Sęk, Ireneusz Czarnowski
idt22-046	Potentials of Blockchain Technologies in Supply Chain Management – Empirical Results Ralf Haerting, Nathalie Hoppe, Sandra Trieu

IDT-08: Wednesday 22nd June 2022
 Time: 10:30 - 12:30 EEST
Room 2

IDT-08: Signal Processing and Pattern Recognition Techniques for Modern Decision-Making Systems
Chair: Dr. Paolo Crippa

PROSE Paper No	Paper Title / Authors
idt22-047	Heart Rate Detection Using a Non-obtrusive Ballistocardiography Signal Sebastian Reatzer, Maksym Gaiduk, Ralf Seepold
idt22-054	Wireless Communication Attack Using SDR and Low-cost Devices Batoul Achaal, Mohamad Rida Mortada, Ali Mansour, Abbass Nasser
idt22-056	Wearable Acceleration-Based Human Activity Recognition Using AM-FM Signal Decomposition Giorgio Biagetti, Paolo Crippa, Laura Falaschetti, Michele Alessandrini, Claudio Turchetti
idt22-058	GpLMS: Generalized Parallel Least Mean Square Algorithm For Partial Observations Ghattas Akkad, Viet-Dung Nguyen, Ali Mansour
idt22-059	Siamese network for salivary glands segmentation Gabin Fodop, Aurelien Olivier, Clement Hoffmann, Ali Mansour, Sandrine Jousse-Joulin, Luc Bressollette, Benoit Clement

IDT-09: Wednesday 22nd June 2022
Time: 10:30 - 12:30 EEST
Room 5

IDT-09: Blockchains and Intelligent Decision Making
Chair: Prof. Zhaojun Han and Prof. Xiangpei Hu

PROSE Paper No	Paper Title / Authors
idt22-033	Timed Automata Networks for SCADA Attacks Real-Time Mitigation Francesco Mercaldo, Fabio Martinelli, Antonella Santon
idt22-067	On the Evaluation of BDD Requirements with Text-based Metrics: the ETCS-L3 Case Study Lelio Campanile, Maria Stella de Biase, Stefano Marrone, Mariapia Raimondo, Laura Verde
idt22-071	Break the Fake: a Technical Report on Browsing Behavior During the Pandemic Lelio Campanile, Mario Cesarano, Gianfranco Palmiero, Carlo Sanghez
idt22-074	A Federated Consensus-Based Model for Enhancing Fake News and Misleading Information Debunking Fiammetta Marulli, Laura Verde, Stefano Marrore, Lelio Campanile
idt22-061	Synchronization of Mobile Grading and Pre-cooling Services Xuping Wang, Yue Wang, Na Lin, Ya Li
idt22-070	The Challenge of Willingness to Blockchain Traceability Adoption: An empirical investigation of the main Drivers in China Xueying Zhai, Xiangpei Hu
idt22-072	A blockchain-and-IoT-based supply chain traceability system for high value-added agri-food Mr. Wenjie Yin, Lecturer Mu Du, Professor Xiangpei Hu
idt22-075	Bundle Recommendation based on Rating Data Analysis for Online Supermarkets Dr Yan Fang, Ms. Xue Jin, Ms. Ding Yumei

InMed Paper Presentations

INMED-01: Monday 20th June 2022
Time: 10:30 - 12:30 EEST
Room 6

INMED-01: Artificial Intelligence, Machine Learning, Deep Learning in Medical Applications - Part 1
Chair: Mihaela Luca & Anca Ignat

PROSE Paper No	Paper Title / Authors
imed22-007	Digital Twin in Healthcare through the Eyes of the Vitruvian Man Spyridon Kleftakis, Argyro Mavrogiorgou, Konstantinos Mavrogiorgos, Athanasios Kiourtis, Dimosthenis Kyriazis
imed22-014	Prediction Models for COVID-19 in Children Vincent Peter C. Magboo, Ma. Sheila A. Magboo
imed22-015	Analysis of Ensemble Learning for Chest X-Ray Images Anca Ignat
imed22-008	Risk Analysis of Developing Lifestyle-related Diseases based on the Content of Social Networking Service Posts Naomichi Tabuchi, Kazuyuki Matsumoto, Minoru Yoshida, Ryota Nishimura, Kenji Kita
imed22-003	3D Convolutional Neural Network for Covid Assessment on CT Scans Insaf Setitra, Rym Khettab, Anfel Sara Bouachat, Yuji Iwahori, Abdelkrim Meziane

INMED-02: Monday 20th June 2022
Time: 14:45 - 17:00 EEST
Room 6

INMED-02: Artificial Intelligence, Machine Learning, Deep Learning in Medical Applications - Part 2
Chair: Mihaela Luca & Anca Ignat

PROSE Paper No	Paper Title / Authors
imed22-002	Deep Reinforcement Learning Classification of Brain Tumors on MRI Joseph Stember, Hrithwik Shalu
imed22-021	Deep Learning on Special Processed Video Colonoscopy Datasets Adrian Ciobanu, Mihaela Luca, Radu Alexandru Vulpoi, Vasile Liviu Drug
imed22-023	Improved Mask R-CNN with Deformable Convolutions for Accurate Liver Lesion Detection in Multiphase CT Images Chanyu Lee, Yutaro Iwamoto, Lanfen Lin, Hongjie Hu, Yen-Wei Chen
imed22-006	Unsupervised Domain Adaptation with Adversarial Learning for Liver Tumors Detection in Multi-phase CT Image Rahul Kumar Jain, Takahiro Sato, Taro Watasue, Tomohiro Nakagawa, Yutaro Iwamoto, Xianhua Han, Lanfen Lin, Hongjie Hu, Xiang Ruan, Yen-Wei Chen
imed22-010	Deep Liver Lesion AI System: A Liver Lesion Diagnostic System Using Deep Learning in Multiphase CT Titinunt Kitrungrotsakul, Yingying Xu, Jihong Hu, Jing Liu, Yinghao Li, Lanfen Lin, Ruofeng Tong, Jingsong Li, Yen-Wei Chen

INMED-03: Wednesday 22nd June 2022
Time: 10:30 - 12:30 EEST
Room 3

INMED-03: Digital Architecture and Economics for Internet of Things, Big data, Cloud and Mobile IT in Healthcare
Chair: Yoshimasa Masuda, Yen-Wei Chen

PROSE Paper No	Paper Title / Authors
imed22-024	Society 5.0 as Digital Strategy for Scalability: Tamba's COVID-19 Vaccination Management System and its Expansion Yoshiaki Fukami, Yoshimasa Masuda
imed22-030	Strategic Risk Management Model for Agile Software Development: Case of Global Pharmaceutical Enterprise Tetsuro Miyake, Yoshimasa Masuda, Katsura Deguchi, Masashi Iwasaki, Kazuya Obanayama, Kasei Miura
imed22-029	Vision Paper for Enabling HCI-AI Digital Healthcare Platform Using AIDAF in Open Healthcare Platform 2030 Yoshimasa Masuda, Ryo Ishii, Donald Shepard, Rashimi Jain, Osamu Nakamura, Tetsuya Toma
imed22-027	Adaptive Multi-Omics Survival Analysis in Cancer Isabelle Bichindaritz, Guanghui Liu
imed22-011	Robust Zero Watermarking Algorithm for Medical Volume Data based on LBP Wenyi Liu, Jingbing Li, Jing Liu, Jixin Ma
imed22-012	Robust Zero-Watermarking Algorithm for Medical Images based on Residual Network and Depthwise Separable Convolutions Junhua Zheng, Jingbing Li, Jing Liu, Yen-Wei Chen
imed22-004	VisNow-Medical – a Visual Analysis Platform for Medical Data Processing Piotr Regulski, Kazimierz Szopinski

INMED-04: Tuesday 21st June 2022
Time: 14:45 - 17:00 EEST
Room 5

INMED-04: Biomedical Engineering, Trends, Research and Technologies
Chair: Margarita Ramírez Ramírez, Esperanza Manrique Rojas

PROSE Paper No	Paper Title / Authors
imed22-009	Mental Health of the Elderly: Towards a Proposal for a Social Simulator based on the Complexity Approach Consuelo Salgado Soto, Margarita Ramirez Ramirez, Esperanza Manrique Rojas, Rocio Villalon Cañas, Maricela Sevilla Caro, Hilda Beatriz Ramirez Moreno
imed22-005	The Development of a Spatial Sound System in the Navigation of Visually Impaired People Dimitrios Palogiannidis, Hanadi Solieman
imed22-026	Information System in Support of Health of Children with Congenital Heart Disease Margarita Ramírez Ramírez, María del Consuelo Salgado Soto, Esperanza Manrique Rojas, Sergio Octavio Vázquez Núñez, Magdalena Serrano Ortega
imed22-028	Relationship between Mental Health, Life Skills and Life Satisfaction among Japanese Athletes Xiaoya Yuan, Koichiro Aoki, Chieko Kato, Yoshiomi Otsuka
imed22-016	IT Assisted Gardening for the Revitalization of the Elderly: The Turntable Solution István Vassányi, Benedek Szakonyi, Daniela Loi, Angelika Mantur-Vierendeel, Guilherme Correia, Antonio Solinas, Bojan Blažica, Riccardo Pazzona, Andrea Manca, Marco Guicciardi, Balázs Gaál

INMED-05: Wednesday 22nd June 2022
Time: 13:30 - 15:30 EEST
Room 3

INMED-05: Support System/Software for Medical Care and Healthcare
Chair: Rui Xu, Satoshi Tanaka

PROSE Paper No	Paper Title / Authors
imed22-025	A Visual Attention Guidance Approach for Minimally Invasive VR Surgery Training Kazuyoshi Tagawa, Chikato Kuyama, Masaya Yamamoto, Hiromi T. Tanaka
imed22-019	Unsupervised MR to CT Image Translation Exploiting Multi-Scale and Contextual Cues Rui Xu, Yuening Zhang, Xinchen Ye, Fu Jin, Xia Tan, Huanli Luo
imed22-018	A Unified Framework for Preoperative Early Recurrence Prediction of Hepatocellular Carcinoma with Multi-phase CT Images Shuyi Ouyang, Yingying Xu, Weibin Wang, Yinhao Li, Fang Wang, Qingqing Chen, Lanfen Lin, Yen-Wei Chen, Hongjie Hu
imed22-013	Object Classification Awareness and Tubular Focal Loss for Hepatic Veins Segmentation Feiyu Wang, Guoyu Tong, Huiyan Jiang
imed22-022	Automation of Joint Space Distance Measurement for Diagnosis Support System in Rheumatoid Arthritis Tomio Goto, Kosuke Goto, Koji Funahashi

SEEL Paper Presentations

SEEL-01: Monday 20th June 2022
Time: 10:30 - 12:30 EEST
Room 3

SEEL-01: Smart Education
Chair: Dr. Karsten Henke and Dr. Carrie Anna Courtad

PROSE Paper No	Paper Title / Authors
	SEEL-2022: Welcome AddressVladimir L. Uskov
seel22-008	Take-Home Labs for the STEM Education of the FutureKarsten Henke, Johannes Nau, Detlef Streitferdt
seel22-003	Long-Term and Early Effects of Computer-Assisted Instruction in Low Socioeconomic Status StudentsTabea Wanner, Tamara Wanner, Veit Etzold
seel22-039	All Work and no Play – Game-Based vs. Text-Based Learning in IT-SecurityMarcus Gelderie, Tamara Wanner
seel22-059	Technology and Accommodations at University Centers for Students with DisabilitiesJeffrey P. Bakken, Carrie Anna Courtad, Danica Stassen
seel22-002	Long-Term and Early Effects of Computer-Assisted Instruction in Early ChildhoodHaya Shamir, Erik Yoder, David Pocklington, Kathryn Feehan, Carolyn Ortiz-Wood
seel22-006	Shifting to Smart Conferences: Author Perceptions of Presenting Virtually at the 2021 Associated Schools of Construction ConferenceBlake Wentz, Heather N. Yates

SEEL-02: Monday 20th June 2022
Time: 14:45 - 17:00 EEST
Room 3

SEEL-02: Smart Pedagogy
Chair: Dr. Vladimir Uskov

PROSE Paper No	Paper Title / Authors
	SEEL-2022: Welcome AddressVladimir L. Uskov
seel22-049	Smart Pedagogy: Concepts, Components, OutcomesVladimir L. Uskov
seel22-054	Smart Pedagogy: An Extended Reality (XR) Based ApproachJohn P. Doran, Vladimir L. Uskov
seel22-021	Innovative Approach for Tertiary Education System: the Crowdsourcing ModelLyudmila V. Glukhova, Svetlana A. Gudkova, Elena N. Korneeva, Aizhan Omarova
seel22-050	Smart Pedagogy-Focused Design and Development of Innovative Curriculum for Data CleaningVladimir L. Uskov, Jeffrey P. Bakken, Prasanthi Putta, Sneha Nagamalla, Muthumari Nammalwar, Deepali Krishnakumar, Keerthi Sree Ganapathi
seel22-048	Augmented Intelligence for Pedagogically Sustained Training and EducationGeorge Domalis, Nikos Karacapilidis, Christoforos Karachristos, Vassilis Komis, Koralia Manta, Anastasia Misirli, Dimitris Tsakalidis, Andromachi Filippidi
seel22-036	Case Study on Smart Education During a Global Pandemic: A Hybrid, International Course on Global Software EngineeringDaniel Moritz Marutschke, Victor V. Kryssanov, Patricia Brockmann
seel22-009	Information Technology in the Pedagogical Training of Pop Vocalists at the UniversityNataliya G. Tagiltseva, Svetlana A. Konovalova, Oksana A. Ovsyannikova
seel22-051	Smart Pedagogy-Focused Design and Development of Innovative Curriculum for Data VisuilizationVladimir L. Uskov, Jeffrey P. Bakken, Prasanthi Putta, Sneha Nagamalla, Muthumari Nammalwar, Deepali Krishnakumar, Keerthi Sree Ganapathi

SEEL-03: Wednesday 22nd June 2022
Time: 10:30 - 12:30 EEST
Room 1

SEEL-03: Smart e-Learning 2
Chair: Dr. Danguolė Rutkauskienė and Dr. Petra Poulova

PROSE Paper No	Paper Title / Authors
seel22-062	Supporting Peer-Learning with Augmented Reality in Neuroscience and Medical EducationOle Viktor Ravna, Jose Garcia, Chrysoula Themeli, Ekaterina Prasolova-Førland
seel22-027	University Students' Use and Acceptance of Online Learning in the Period of COVID-19 PandemicPetra Poulová, Blanka Klímova, Martin Kocourek
seel22-037	Constructive Approach to Students' Error Processing 15 in E-learning CoursesJerzy J. Korczak, Ilona Pawełoszek
seel22-060	E- Learning Tools and Resources in an Interactive Environment for Staff Working in Criminal Correctional Justice SystemDanguolė Rutkauskienė, Rhianon Williams, Greta Volodzkaitė, Daiana-Mariana Huber
seel22-024	Software Tools for Creating Digital StorytellingJana Nunvářová, Petra Poulová, Petra Poláková
seel22-031	WeCheat: Algorithm for e-Learning Smart Cheating Detection Using Mean-Shift ClusteringHussein Hazimeh, Hasan Fayyad-Kazan, Hussin J. Hejase, Karl Daher, Elena Mugellini, Omar Abou Khaled

SEEL-04: Tuesday 21st June 2022
Time: 10:30 - 12:30 EEST
Room 4

SEEL-04: Smart University
Chair: Dr. Nunzio Casalino

PROSE Paper No	Paper Title / Authors
seel22-065	A New Approach to Enhance the Strategic Impact of Digital Education in Universities and to Foster the Development of a High Performing Common EU Smart Education EcosystemBarbara Borin, Matteo Caroli, Nunzio Casalino, Maurizio Cavallari, Nadia Di Carluccio, Primiano Di Nauta, Giuliana Pizzolo
seel22-046	Smart University: Digital Development Projects Based on Big DataYana S. Mitrofanova, Valentina I. Burenina, Anna V. Tukshumskaya, Anton K. Kuznetsov, Tatiana N. Popova
seel22-010	Human Capital of a Smart University: Trajectories of Innovative DevelopmentSvetlana A. Gudkova, Lyudmila V. Glukhova, Alexandr D. Nemtcev, Anna A. Sherstobitova, Aleksej A. Tsvetkov, Aminat R. Bechelova
seel22-066	Accelerating Transparency and Efficiency in the Public Procurement Sector for a Smarter Society: eNotification and ESPD Integration for Developing E-procurementElisa Bertocchi, Matteo Caroli, Nunzio Casalino, Stefano Falà, Marco Giovannetti, Katia Infante, Alessia Orsi, Emanuela Mariotti, Fabio Massimi, Valerio Manzo, Giuliana Pizzolo, Giovanni Paolo Sellitto
seel22-016	Music and Computer Technologies in Learning Musical and Theoretical Disciplines by PupilsNataliya I. Kashina, Lada V. Matveeva, Svetlana A. Konovalova, Sergey I. Mokrousov

SEEL-05: Tuesday 21st June 2022
Time: 10:30 - 12:30 EEST
Room 6

SEEL-05: Digital Transformation of Education and Economics in Smart University
Chair: Dr. Natalia A. Serdyukova

PROSE Paper No	Paper Title / Authors
seel22-004	Temporal Logic Usage in Control and Planning Models of Smart SystemsNatalia A. Serdyukova, Vladimir I. Serdyukov, Olga A. Kusminova, Andrei N. Kusnetsov, Svetlana I. Shishkina
seel22-013	Modeling the Adaptive Stability and Competitiveness of the University During Digital ChangesAnna A. Sherstobitova, Bella V. Kazieva, Valery M. Kaziev, Olga. A. Filippova, Elena I. Koroleva, Lyudmila V. Glukhova
seel22-030	The Lean Production Concept and Standardization for Risk Management at University: Simulation and TrendsLyudmila V. Glukhova, Svetlana A. Gudkova, Raisa K. Krayneva, Lazzat Serikova
seel22-005	Mechanisms of Temporal Quasi - Fractal Logic in Smart SystemsNatalia A. Serdyukova, Vladimir I. Serdyukov
seel22-015	Smart University`s Risk-Resilience ModelingAnna A. Sherstobitova, Bella V. Kazieva, Valery M. Kaziev, Lyudmila V. Glukhova, Olga A. Filippova, Anastasya A. Davidova
seel22-029	Risk Controlling Toolkit at Smart UniversityLeyla F. Berdnikova, Natalia O. Mikhalenok, Natalya A. Igoshina, Ekaterina A. Afonichkina, Elena A. Khramova, Elena V. Shchepotkina-Marinina

SEEL-06: Tuesday 21st June 2022
Time: 14:45 - 17:00 EEST
Room 4

SEEL-06: Smart e-Learning 1
Chair: Dr. Hengbin Yan

PROSE Paper No	Paper Title / Authors
seel22-033	Analysis of Student Outcomes in the Remote Laboratory NetLab with Real-time SupportHugh Considine, Andrew Nafalski
seel22-018	Data-Driven Smart e-Learning for English for Specific PurposesHengbin Yan
seel22-014	The Simultaneous Effect of Class Attendance on Grade Expectations in an Online Learning SettingBlendi Gerdoçi, Megi Çali, Sidita Dibra
seel22-001	Learning Analytics to Identify the Socio-Affective Scenarios in a Virtual Learning EnvironmentJacqueline Akazaki, Leticia Machado, Patricia Behar
seel22-007	Academic Term Search Support System for Beginners in Inquiry-based LearningYasunobu Sumikawa, Ryohei Ikejiri, Yuhei Yamauchi

SEEL-07: Tuesday 21st June 2022
Time: 14:45 - 17:00 EEST
Room 6

SEEL-07: Digital Humanities and Social Sciences for Smart University Development: the Innovative Methods, Models and Technologies
Chairs: Dr. Svetlana A. Gudkova & Dr. Lyudmila V. Glukhova"

PROSE Paper No	Paper Title / Authors
seel22-011	Digital Humanities and Smart Pedagogy for Managing Intellectual Development in Higher EducationSvetlana A. Gudkova, Lyudmila V. Glukhova, Inga V. Treshina, Marina V. Malashchenko, Olga A. Kuznetsova, Tatyana S. Yakusheva
seel22-012	Educational Ecosystem and Government Relations Based on the Company's Intellectual CapitalAnna A. Sherstobitova, Lyudmila V. Glukhova, Valery M. Kaziev, Sabina Sh. Palferova, Tatiana A. Rachenko, Svetlana A. Gudkova
seel22-017	Digital Tools For Smart Pedagogy, Text Analysis and Linguistics: Methodology, Trends and ProspectsSvetlana A. Gudkova, Marina V. Dayneko, Inga V. Treshina, Svetlana Yu. Kuznetsova, Marina V. Malashchenko, Tatiana S. Yakusheva
seel22-022	Digital Literacy Skills of Translators: Innovative Methods and Trends in TrainingTatiana Shvets, Alena Klyushina, Olga Shalifova, Viktoria Volova, Galina Khorokhorina
seel22-028	Conceptual Model of Controlling Risks of Smart University Core ActivitiesLeyla F. Berdnikova, Marina V. Manina, Svetlana I. Sotskova, Oksana A. Lugovkina, Iuliia A. Anisimova, Elena A. Borgardt
seel22-020	Methodology for Linguistic Education at Digital Age: Case Study for Regional UniversitiesIrina Gurova, Elena Ivanyan, Marina Mihailova, Svetlana Gudkova, Olga Parshina
seel22-032	Building an Internal Control System for the Purposes of Managing the Activities of the Smart UniversityLeyla F. Berdnikova, Ekaterina A. Afonichkina, Olga S. Aksinina, Liudmila N. Kabanova, Olga I. Vasilchuk, Anastasia Yu. Smagina

SEEL-08: Wednesday 22nd June 2022
Time: 13:30 - 15:30 EEST
Room 1

SEEL-08: Smart Education for Children with Educational Special Educational Needs
Chair: Dr. Margarita Stankova

PROSE Paper No	Paper Title / Authors
seel22-056	Response Time for Contour Detection and Reading in Children and Adolescents with Autism Spectrum DisorderMilena Mihaylova, Nadejda Bocheva, Margarita Stankova, Tsvetalin Totev, Miroslava Stefanova, Katerina Shtereva, Svetla Staykova
seel22-063	Parents' Evaluation of Interaction between Robots and Children with Neurodevelopmental DisordersAnna Andreeva, Anna Lekova, Miglena Simonska, Tanio Tanev
seel22-052	Mobile Application Prototype of Pumpelina Training and Therapeutic System (PTES)Nina Iordanova
seel22-057	Parental Attitudes Towards Online Learning - Data from Four CountriesPolina Mihova, Margarita Stankova, Filip Andonov, Kornilia Tsoukka, Alexandros Proedrou, Eirini Tsetsila, Haneen Alshawesh, Maria Mavrothanasi, Stanislav Stoyanov
seel22-055	Application of Online Fidelity Assessment of Caregivers Skills in the Implementation of Home-Administered Parent-Mediated Program for Children with ASDTsveta Kamenski
seel22-061	Digital Storytelling Tool for Developing Everyday Skills in Children with Special Educational NeedsMartha Sakellariou, Maria Sakellariou

STS Paper Presentations

STS-01: Monday 20th June 2022
Time: 10:30 - 12:30 EEST
Room 4

STS-01: Intelligent transport
Chair: Jiaming Wu

PROSE Paper No	Paper Title / Authors
STS22-015	Smart Pavement: An Attention-based Classification Model For Road Pavement Material Ye Yuan, Qingwen Xue, Hong Lang, Jie Zhu, Jiang Chen, Peng Yuan
STS22-017	On the Impact Analysis of Emergency Vehicles Preemption on Signalized Intersections with Connected Vehicles Jian Xie, Jiaming Wu, and Runkai Yang
STS22-019	Scenario-Oriented Contract Based Design for Safety of Autonomous Vehicles Nadra Tabassam, Prof. Dr. Martin Georg Fränzle
STS22-020	Dynamic Imputation Methodology for Multi-source Streaming Mobility Data Michiel Dhont, Elena Tsiporkova, Nicolas Gonzalez-Deleito
STS22-005	Demand Analysis of Customizable Car Sharing Functions Based on Kano Model Daming Li, Hongyu Ren, Shuolei Qin, Quan Yuan, Weiwei Qi
STS22-009	A Data-driven Method for Diagnosing ATS Architecture by Anomaly Detection Aimin Zhou, Shaowu Cheng, Xiantong Li, Kui Li, Linlin You, Ming Cai

STS-02: Monday 20th June 2022
Time: 14:45 - 17:00 EEST
Room 4

STS-02: Traffic safety and behavior
Chair: Bo Yu

PROSE Paper No	Paper Title / Authors
STS22-001	Complexity Quantification of Car-Following Dynamic Traffic in the Internet of Vehicles Environment Yaoyin Zhang, Linhong Wang, Ce Wang
STS22-002	Driving secondary task load quantification based on the AHP algorithm under the voice interaction scenario Wenlong Liu, Ce Wang, Linhong Wang
STS22-003	Investigating the Influence of ADAS on Drivers? Evasive Behaviors During Car-following on Highways Jianqiang Gao, Bo Yu, Shengzhao Wang
STS22-004	Effect factors analysis of driver's freeway route deviation based on questionnaire survey data Weiwei Qi, Nanjie Zhou, Huapeng Wang, Wenyi Wang
STS22-006	Characteristics Extraction and Increasing Block Fine Modeling for Repeated Speeding Behaviors Yuan Yao, Chuanyun Fu, Guifu Li, Yajie Li
STS22-012	Investigating contributing factors of hard-braking events on urban road network Yue Zhou, Haiyue Liu, Chuanyun Fu
STS22-018	Spatiotemporal distribution of traffic violations in a medium-sized city Luzhou Haiyue Liu, Yue Zhou, Chuanyun Fu, Yining Tan

STS-03: Tuesday 21st June 2022
Time: 10:30 - 12:30 EEST
Room 5

STS-03: Low emission transport
Chair: Kun Gao

PROSE Paper No	Paper Title / Authors
STS22-008	Impact Analysis of Wired Charging and Wireless Charging on Electric Bus Operation: A Simulation-based Method Wei Qin, Libing Liu, Jinhua Ji, Mingjie Hao, Yiming Bie
STS22-010	Dynamic electric bus control method for the route with dedicated bus lane Yuting Ji, Jinhua Ji, Yiming Bie
STS22-011	Evaluating the impact of signal control on emissions at intersections Jieyu Fan, Martin Baumann, Sarang Jokhio, Jie Zhu
STS22-014	Usage pattern analysis of e-scooter sharing system: A case study in Gothenburg, Sweden Gentrina Peci, Sadia Ali, Jieyu Fan, Jie Zhu
STS22-016	Traffic flow model of the weaving section in signalized roundabouts Tianshu Zhan, Xianmin Song, Yunxiang Zhang, Kunwei Wang
STS22-007	An Effective berths-based Approach to Calculate the Capacity of Drop-off Exclusive Roadway Yaping Zhang, Guifu Li, Chuanyun Fu, Qian Luo

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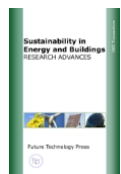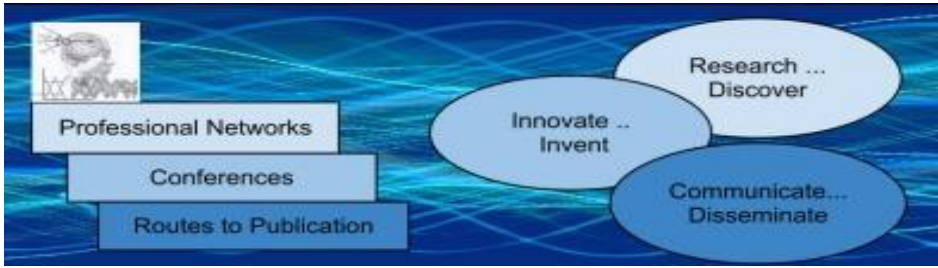
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