



17th CONFERENCE ON COMPUTER SCIENCE AND INTELLIGENCE SYSTEMS

1st Workshop on Complex Networks: Theory and Application (CN-TA'22)

Sofia, Bulgaria, 4 - 7 September, 2022

Time EEST	Room 1	Room 2	Room 3
Sunday 4.09 (on-site)			
9:00-10:30	AAIA - JOIN HERE	CN-TA - JOIN HERE	CSS+ (CANA+WSC) - JOIN HERE
10:30-10:45	Coffee Break		
10:45-11:15	Opening - JOIN HERE		
11:15-12:10	Invited Speaker (Chris Cornelis : Hybridization of Fuzzy Sets and Rough Sets: Achievements and Opportunities) - JOIN HERE		
12:20-13:15	Invited Speaker (Krassimir Atanassov : Remarks on index matrices) - JOIN HERE		
13:15-14:15	Lunch		
14:15-16:00	AAIA - JOIN HERE	IoT-ECAW - JOIN HERE	CSS+ (CANA+CS&P) - JOIN HERE
16:00-16:30	Coffee Break		
16:30-18:30	PeRS - JOIN HERE	IoT-ECAW - JOIN HERE	AIMaVIG+ AI4NextGenDI - JOIN HERE
19:00-	Reception		

This project is financed by the Minister of Education and Science of the Republic of Poland within the "Regional Initiative of Excellence" program for years 2019–2022. Project number 027/RID/2018/19, amount granted 11 999 900 PLN.



Time EEST	Room 1	Room 2	Room 3
Monday 5.09 (on-site)			
9:00-11:00	WCO - JOIN HERE	DS-RAIT - JOIN HERE	RSTA (Invited Speaker Andrzej Skowron : <u>Rough Sets Turn 40: From Information Systems to Intelligent Systems</u>) - JOIN HERE
11:00-11:30	Coffee Break		
11:30-12:30	Invited Speaker (Franco Zambonelli : <u>Individual and collective self-development</u>) - JOIN HERE		
12:30-13:30	Lunch		
13:30-15:30	WCO - JOIN HERE	S3E - JOIN HERE	AIST+DSH+ISM - JOIN HERE
15:30-16:00	Coffee Break		
16:00-18:00	DMC - JOIN HERE	MDASD (Invited Speaker Bogusław Cyganek : <u>Modern C++ in the era of new technologies and challenges - why and how to teach modern C++?</u>) - JOIN HERE	KAM - JOIN HERE
20:00-	Banquet		

Projekt finansowany w ramach programu Ministra Edukacji i Nauki pod nazwą „Regionalna Inicjatywa Doskonałości” w latach 2019 - 2022 nr projektu 027/RID/2018/19 kwota finansowania 11 999 900 zł.



Tuesday 6.09 (online)					
09:00-11:00	AAIA - JOIN HERE	AIMaVIG - JOIN HERE	AIST+ISM - JOIN HERE	CS&P - JOIN HERE	NSA+CN-TA - JOIN HERE
11:00-11:30	Coffee Break				
11:30-12:30	Invited Speaker (Thomas Blaschke: Coupling deep learning, knowledge-based and spatial concepts for the analysis and classification of Earth Observation images) - JOIN HERE				
12:30-13:30	Lunch				
13:30-15:30	RSTA - JOIN HERE	PeRS - JOIN HERE	AIST+ISM - JOIN HERE	S3E+MDASD - JOIN HERE	NSA+ (IoT- ECAW+NEMESIS) - JOIN HERE
15:30-16:00	Coffee Break				
16:00-18:00	AAIA	KAM - JOIN HERE	AIST+ISM - JOIN HERE	SEW&IWCPs - JOIN HERE	NSA+NEMESIS - JOIN HERE

Wednesday 7.09 (online)					
09:00-11:00	DMC - JOIN HERE	KAM - JOIN HERE	DSH - JOIN HERE	CSS+ (CANA+CS&P) - JOIN HERE	WCO - JOIN HERE
11:00-11:30	Coffee Break				
11:30-13:30	AAIA - JOIN HERE	MMAP - JOIN HERE			WCO - JOIN HERE

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AAIA Program

09:00-10:30 EEST	Sunday 04.09.2022 on-site. Session 1. Chairs: Eftim Zdravevski, Marcin Szczuka JOIN HERE
09:00-09:10	Introductory Word by the Chair
09:10-09:35	Grzegorz Rypeść, Łukasz Lepak and Paweł Wawrzyński, Reinforcement Learning for on-line Sequence Transformation
09:35-10:00	Sašo Pavlič, Iztok Fister Jr. and Sašo Karakatič, NiaNet: A framework for constructing Autoencoder architectures using nature-inspired algorithms
10:00-10:25	Stefanie Penzel, Mathias Rudolph, Helko Borsdorf and Olfa Kanoun, Prototypical investigation of the use of fuzzy measurement data in a case study in water analysis
14:15-16:00 EEST	Sunday 04.09.2022 on-site. Session 2. Chairs: Eftim Zdravevski, Marcin Szczuka JOIN HERE
14:15-14:40	Jens Dörpinghaus, Tobias Hübenthal and Jennifer Faber, A novel link prediction approach on clinical knowledge graphs utilizing graph structures
14:40-15:05	Jakub Pokrywka and Filip Graliński, Temporal Language Modeling for Short Text Document Classification with Transformers
15:05-15:30	Miloš Švaňa, Extending Word2Vec with Domain-Specific Labels
15:30-15:55	Karol Kaczmarek, Jakub Pokrywka and Filip Graliński, Using Transformer models for gender attribution in Polish

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09:00-11:00 EEST	Tuesday 06.09.2022 online. Session 3. Chair: Łukasz Sosnowski JOIN HERE
09:00-09:20	Joanna Henzel, Łukasz Wawrowski, Anna Kubina, Marek Sikora and Łukasz Wróbel, Demand forecasting in the fashion business — an example of customized nearest neighbour and linear mixed model approaches
09:20-09:40	Kacper Podbucki and Tomasz Marciniak, Aspects of autonomous drive control using NVIDIA Jetson Nano microcomputer
09:40-10:00	Horea-Bogdan Mureşan, An Automated Algorithm for Fruit Image Dataset Building
10:00-10:20	Md Rifatul Islam Rifat, Md Nur Amin, Mahmud Hasan Munna and Abdullah Al Imran, An End-to-end Machine Learning System for Mitigating Checkout Abandonment in E-Commerce
10:20-10:40	Cezary Maszczyk, Michał Kozielski and Marek Sikora, Rule-based approximation of black-box classifiers for tabular data to generate global and local explanations
10:40-18:00	Martin Vítá, Detecting Uninformative Research Job Titles via Classifier Failures -- Zero Shot Approach
16:00-18:00 EEST	Tuesday 06.09.2022 online. Session 4. Chair: Roberto Corizzo
16:00-16:20	Ridewaan Hanslo, Deep Learning Transformer Architecture for Named Entity Recognition on Low Resourced Languages: State of the art results
16:20-16:40	Piotr S. Maciąg, Wojciech Sitek, Łukasz Skonieczny and Henryk Rybiński, A Comparative Study of Short Text Classification with Spiking Neural Networks



16:40-17:00	Raúl Moreno, Alberto Fernandez-Isabel, Isaac Martín De Diego, Javier M. Moguerza, Carmen Lancho and Marina Cuesta Santa Teresa, Automatic detection of potential customers by opinion mining and intelligent agents
17:00-17:20	Witold Sosnowski, Anna Wróblewska and Piotr Gawrysiak, Applying SoftTriple Loss for Supervised Language Model Fine Tuning
17:20-17:40	Aleksandra Weiss, Marcin Młyński and Piotr Artiemjew, About Classifiers Quality Assessment: Balanced Accuracy Curve (BAC) as an alternative for ROC and PR Curve
17:40-18:00	Piotr Jezusek and Aleksandra Karpus, Improving Re-rankCCP with Rules Quality Measures
11:30-13:30 EEST	Wednesday 07.09.2022 online. Session 5. Chair: Maciej Świechowski JOIN HERE
11:30-11:50	Hikaru Ikeda, Hiroyuki Nakagawa and Tatsuhiro Tsuchiya, Towards Automatic Facility Layout Design Using Reinforcement Learning
11:50-12:10	Guilherme Gusmão, Alberto Raposo, Renato de Oliveira and Carlos Barbosa, Treating Dataset Imbalance in Fetal Echocardiography Classification
12:10-12:30	Jan Jakubik, Searching For Loops And Sound Samples With Feature Learning
12:30-12:50	Radosław Cybulski and Piotr Artiemjew, Application of Random Sampling in the Concept-Dependent Granulation Method
12:50-13:10	Katarzyna Miś and Michał Baczyński, The Compositional Rule of Inference vs the Bandler-Kohout Subproduct: a Comparison of Two Standard Rules of Inference



CN-TA Program

09:00-10:30 EEST	Sunday 04.09.2022 on-site. Chair: Marek Bolanowski JOIN HERE
09:00-09:20	Jan Sadolewski and Bartosz Trybus, Denotational Model and Implementation of Scalable Virtual Machine in CPDev
09:20-09:40	Mariusz Skoczylas, Łukasz Gotówko, Mateusz Salach, Bartosz Trybus, Marcin Hubacz and Bartosz Pawłowicz, Room mapping system using RFID and mobile robots
09:40-10:00	David Halasz and Barbora Buhnova, Rethinking Safety in Autonomous Ecosystems

CSS+ Program

09:00-10:30 EEST	Sunday 04.09.2022 on-site. Session 1. Chair: Katarzyna Wasielewska-Michniewska JOIN HERE
09:00-09:05	Introductory Word by the Chair
09:05-09:30	Morgan Geldenhuys , Ben Pfister, Dominik Scheinert, Lauritz Thamsen and Odej Kao, Khaos: Dynamically Optimizing Checkpointing for Dependable Distributed Stream Processing
09:30-09:55	Lubomír Štěpánek , Filip Habarta, Ivana Mala and Luboš Marek, A short note on post-hoc testing using random forests algorithm: Principles, asymptotic time complexity analysis, and beyond
09:55-10:15	Kamil Jarosz , Łukasz Opiola, Łukasz Dutka, Renata G. Słota and Jacek Kitowski, Increasing data availability and fault tolerance for decentralized collaborative data-sharing systems



14:15-16:00 EEST	Sunday 04.09.2022 on-site. Session 2. Chair: Katarzyna Wasielewska-Michniewska JOIN HERE
14:15-14:35	Tomas Plachetka , Channel-Less Process Communication
14:35-14:55	Marek Adrian and Gianluigi Greco, An observation on pure strategies in Security Games
14:55-15:15	Filip Kruzel and Mateusz Nytko , Intel Iris Xe-LP as a platform for scientific computing
09:00-11:00 EEST	Wednesday 07.09.2022 online. Session 3. Chair: Katarzyna Wasielewska-Michniewska JOIN HERE
09:00-09:25	Sergiy Fialko , Block Subspace Iteration Method for Structural Analysis on Multicore Computers
09:25-09:50	Beata Bylina, Jaroslaw Bylina and Monika Piekarz , Influence of loop transformations on performance and energy consumption of the multithreaded WZ factorization
09:50-10:10	Włodzimierz Bielecki, Marek Pałkowski and Maciej Poliwoda, Automatic code optimization for computing the McCaskill partition functions
10:10-10:30	Anna Sasak-Okoń , Flexible user query order for the speculative query support in RDBMS



IoT-ECAW Program

14:15- 16:00 EEST	Sunday 04.09.2022 on-site. Chair: Andrzej Paszkiewicz JOIN HERE
14:15- 14:40	Krzysztof Kanciak, Konrad Wrona and Michał Jarosz, Secure Onboarding and Key Management in Federated IoT Environments
14:40- 15:00	Janusz Furtak, Data Exchange Protocol for Cryptographic Key Distribution System Using MQTT Service
15:00- 15:20	Sarah Klein, Anna Hristoskova, Annanda Rath and Renaud Gonce, Anomaly detection on compressed data in resource-constrained smart water meters
16:30- 18:30 EEST	Sunday 04.09.2022 on-site. Chair: Janusz Furtak JOIN HERE
16:30- 16:50	Hubert Buczyński, Paweł Pisarczyk and Krzysztof Cabaj, Resource Partitioning in Phoenix-RTOS for Critical and Noncritical Software for UAV systems
16:50- 17:10	Veselka Boeva, Emiliano Casalicchio, Shahrooz Abghari, Ahmed Abbas Mohsin Al-Saedi, Vishnu Manasa Devagiri, Andrej Petef, Peter Exner, Anders Isberg and Mirza Jasarevic, Distributed and Adaptive Edge-based AI Models for Sensor Networks (DAISeN)
17:10- 17:30	Piotr Cybulski and Zbigniew Zieliński, A comprehensive framework for designing behavior of UAV swarms

PeRS Program

16:30-18:30 EEST	Sunday 04.09.2022 on-site. Session 1. Chair: Adam Przybyłek JOIN HERE
16:30-16:35	Introductory Word by the Chair
16:35-16:55	Eyad Kannout , Michał Grodzki and Marek Grzegorowski, Utilizing Frequent Pattern Mining for Solving Cold-Start Problem in Recommender Systems
16:55-17:10	Amanda Chagas de Oliveira and Frederico Araujo Durao, Evaluating Diversification in Group Recommender Systems
17:10-17:25	Paulo Roberto de Souza, Frederico Araújo Durão and João Paulo Dias de Almeida, Exploiting Social Capital for Recommendation in Social Networks
17:25-17:40	Karol Chlasta , Paweł Sochaczewski, Izabela Grabowska and Agata Jastrzębowska-Tyczkowska, MyMigrationBot: A Cloud-based Facebook Social Chatbot for Migrant Populations
13:30-14:30 EEST	Tuesday 06.09.2022 online. Session 2. Chair: Marek Grzegorowski JOIN HERE
13:30-13:50	Robert Kwieciński , Tomasz Górecki and Agata Filipowska, Learning edge importance in bipartite graph-based recommendations
13:50-14:10	Konstantin Markov , Personality Prediction from Social Media Posts using Text Embedding and Statistical Features
14:10-14:25	Lumbardha Hasimi and Aneta Poniszewska-Maranda, Navigation Systems in terms of User Experience and Multimodal Usability -- Evaluation of Effectiveness and Efficiency

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AIMaViG+AI4NextGenDI Program

16:30- 18:30 EEST	Sunday 04.09.2022 on-site. Chair: Dominik Ślęzak JOIN HERE
16:30- 16:50	Michał Kassjański, Marcin Kulawiak and Tomasz Przewoźny. Development of an AI-based audiogram classification method for patient referral
16:50- 17:10	Szymon Mazurek , Maciej Wielgosz, Jakub Caputa, Rafał Frączek, Michał Karwatowski, Jakub Grzeszczyk, Daria Łukasik, Anna Śmiech, Paweł Russek, Ernest Jamro, Agnieszka Dąbrowska-Boruch, Marcin Pietroń, Sebastian Koryciak and Kazimierz Wiatr. Canine age classification using Deep Learning as a step towards preventive medicine in animals
17:10- 17:30	Simon Hengeveld and Antonio Mucherino . On the Feasible Regions Delimiting Natural Human Postures in a Novel Skeletal Representation
17:30- 17:50	Paweł Kowaleczko, Przemysław Rokita and Marcin Szczuka . Neural Network Enhanced Automatic Garment Measurement System
17:50- 18:10	Povilas Treigys , Aleksas Vaitulevičius, Jolita Bernatavičienė, Jurgita Markevičiūtė, Ieva Naruševičiūtė and Mantas Trakymas. Detecting Cancerous Regions in DCE MRI using Functional Data, XGboost and Neural Networks
09:00- 11:00 EEST	Tuesday 06.09.2022 online. Chairs: Rafał Józwiak, Andrzej Śluzek JOIN HERE
09:00- 09:20	Tomasz Nowak and Piotr Skrzypczyński. Geometry-Aware Keypoint Network: Accurate Prediction of Point Features in Challenging Scenario
09:20- 09:40	Włodzimierz Kasprzak , Van Khanh Do and Paweł Piwowarski. A lightweight approach to two-person interaction classification in sparse image sequences

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09:40-10:00	Lewi Uberg and Seifedine Kadry . Analysis of Brain Tumor Using MRI Images
10:00-10:20	Andrzej Śluzek . Insights into Neural Architectures for Learning Numerical Concepts from Simple Visual Data
10:20-10:40	Tomasz Balon, Mateusz Knapik and Cyganek Bogusław. New Thermal Automotive Dataset for Object Detection
10:40-11:00	Tomasz Lehmann , Piotr Paziewski and Andrzej Pacut. Face and silhouette based age estimation for child detection system

WCO Program

09:00-11:00 EEST	Monday 05.09.2022 on-site. Session 1. Chair: Stefka Fidanova JOIN HERE
09:00-09:20	Simon B. Hengeveld and Antonio Mucherino , A GPU approach to distance geometry in 1D: an implementation in C/CUDA
09:20-09:40	Venelin Todorov , Ivan Dimov, Stefka Fidanova, Rayna Georgieva, Tzvetan Ostromsky and Stoayn Poryazov, An Optimized Monte Carlo Approach for Multidimensional Integrals Related to Intelligent Systems
09:40-10:00	Camilo Chacón Sartori and Christian Blum, Boosting a Genetic Algorithm with Graph Neural Networks for Multi-Hop Influence Maximization in Social Networks
10:00-10:20	Michel Bierlaire, Edoardo Fadda , Lohic Fotio Tiotsop and Daniele Manerba, A chance-constraint approach for optimizing social engagement-based services

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10:20-10:40	Venelin Todorov and Slavi Georgiev, A Stochastic Optimization Method for European Option Pricing
10:40-11:00	Eliseo Marzal and Laura Sebastian , Team Orienteering Problem with Time Windows and Variable Profit
13:30-15:30 EEST	Monday 05.09.2022 on-site. Session 2. Chair: Antonio Mucherino JOIN HERE
13:30-13:50	Stefka Fidanova , Ivan Dimov and Denica Angelova, Agricultural System Modelling with Ant Colony Optimization
13:50-14:10	Lubomír Štěpánek , Filip Habarta, Ivana Malá and Luboš Marek, Dirichlet's principle revisited: An inverse Dirichlet's principle definition and its bound estimation improvement using stochastic combinatorics
14:10-14:30	Venelin Todorov and Slavi Georgiev, An Optimization Technique for Estimating Sobol Sensitivity Indices
14:30-14:50	Petar Zhivkov and Alexander Simidchiev, Development of Software Tool for Optimization and Evaluation of Cycling Routes by Characterizing Cyclist Exposure to Air Pollution
14:50-15:10	Tzvetan Ostromsky , Performance and Scalability Experiments with a Large-scale Air Pollution Model on the EuroHPC Petascale Supercomputer DISCOVERER
15:10-15:30	Jens Dörpinghaus , Analyzing longitudinal Data in Knowledge Graphs utilizing shrinking pseudo-triangles
09:00-11:00 EEST	Wednesday 07.09.2022 online. Session 3. Chair: Stefka Fidanova JOIN HERE



09:00-09:20	Tomoya Miyazaki and Kouichi Hirata , Subcaterpillar Isomorphism: Subtree Isomorphism Restricted Pattern Trees To Caterpillars
09:20-09:40	Antonio Cassia, Ola Jabali, Federico Malucelli and Marta Pascoal , The electric vehicle shortest path problem with time windows and prize collection
09:40-10:00	Felipe Marchi and Rafael Stubs Parpinelli , A Multi-objective Cluster-based Biased Random-Key Genetic Algorithm with Online Parameter Control Applied to Protein Structure Prediction
10:00-10:20	Neta Stein and Tami Tamir, Stackelberg Strategies for Weighted Load Balancing Games
10:20-10:40	Adam Borowicz , Independent Component Analysis Based on Jacobi Iterative Framework and L1-norm Criterion
10:40-11:00	Velichka Traneva , Deyan Mavrov and Stoyan Tranev, Software Implementation of the Optimal Temporal Intuitionistic Fuzzy Algorithm for Franchisee Selection
11:30-13:30 EEST	Wednesday 07.09.2022 online. Session 4. Chair: Antonio Mucherino JOIN HERE
11:30-11:50	Radosław Puka , Bartosz Łamasz and Iwona Skalna, Improving N-NEH+ algorithm by using Starting Point method
11:50-12:10	Velichka Traneva , Deyan Mavrov and Stoyan Tranev, Software Implementation of the Optimal Temporal Intuitionistic Fuzzy Algorithm for Franchisee Selection
12:10-12:30	Michał Antkiewicz , Paweł Myszowski and Maciej Laszczyk, GaMeDE2 — improved Gap-based Memetic Differential Evolution applied to multi-modal optimisation
12:30-12:50	Alain Quilliot , Surrogate Estimators for Complex Bi-Level Energy Management

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RSTA Program

09:00-11:00 EEST	Monday 05.09.2022 on-site. Chairs: Piotr Artiemjew, Zaine Chelly Dagdia, A Mani, Dominik Ślęzak JOIN HERE
09:00-09:10	Dominik Ślęzak , 40 th Anniversary of Rough Sets: Introduction
09:10-10:00	Andrzej Skowron , Keynote (online) - Rough Sets Turn 40: From Information Systems to Intelligent Systems
10:00-10:20	Adnan Theerens , Chris Cornelis, Fuzzy Quantifier-Based Fuzzy Rough Sets
10:20-10:40	Ryszard Janicki, Mahmoud Mahmoud , On Multiplicative, Additive and Qualitative Pairwise Comparisons
10:40-11:00	Dominik Ślęzak , 40 th Anniversary of Rough Sets: Overview of the Associated Events
13:30-15:30 EEST	Tuesday 06.09.2022 online. Chairs: Piotr Artiemjew, Zaine Chelly Dagdia, A Mani, Dominik Ślęzak JOIN HERE
13:30-13:50	Bich Khue Vo, Hung Son Nguyen , Feature Selection and Ranking Method based on Intuitionistic Fuzzy Matrix and Rough Sets
13:50-14:10	Manel Jerbi , Zaine Chelly Dagdia, Slim Bechikh, Lamjed Ben Said, Malware Evolution and Detection Based on the Variable Precision Rough Set Model
14:10-14:30	Andrea Campagner , Davide Ciucci, Three-way Learnability: A Learning Theoretic Perspective on Three-way Decision

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14:30-14:50	Alicja Mieszkowicz-Rolka, Leszek Rolka , Multi-Criteria Decision-Making with Linguistic Labels
14:50-15:10	Carolín Hannusch , Tamás Mihálydeák, Algebraic structures gained from rough approximation in incomplete information systems
15:10-15:30	Zaineb Chelly Dagdia , Vania Bogorny, Towards a Granular Computing Framework for Multiple Aspect Trajectory Representation and Privacy Preservation: Research Challenges and Opportunities

DS-RAIT Program

09:30-11:00 EEST	Monday 05.09.2022 on-site. Chair: Maria Ganzha, Marcin Paprzycki JOIN HERE
09:30-10:00	Tomasz Ziętkiewicz, Tag and correct: high precision post-editing approach to speech recognition errors correction
10:00-10:30	Olga Kamińska and Katarzyna Kaczmarek-Majer, Impact of clustering unlabeled data on classification: case study in bipolar disorder
10:30-11:00	Dzhakhongir Normatov and Paolo Mercorelli, Parameters Estimation of a Lotka-Volterra Model in an Application for Market Graphics Processing Units



S3E Program

13:30-15:30 EEST	Monday 05.09.2022 on-site. Chair: Ivan Luković JOIN HERE
13:30-13:40	Introductory Word by the Chair
13:40-14:10	Anton Hristozov, Eric Matson, Eric Dietz and Marcus Rogers, Sensor Data Protection in Cyber-Physical Systems
14:10-14:40	Anton Hristozov, Eric Matson, Eric Dietz and Marcus Rogers, Component Interface Formalization in Robotic Systems
14:40-15:10	Noah Lambaria and Tomas Cerny, A Data Analysis Study of Code Smells within Java Repositories
15:10-15:30	Bogusław Cyganek , Small Footprint Embedded Systems Paradigm Based on a Novel and Scalable Implementation of FORTH

AIST+DSH+ISM Program

13:30-15:30 EEST	Monday 05.09.2022 on-site. Session 1. Chair: Dorota Jelonek JOIN HERE
13:30-13:40	Opening of AIST/DSH/ISM, Dorota Jelonek
13:40-14:10	Optimization of Processes for Shared Cars: Janis Bicevskis (University of Latvia), Ivo Odītis, Zane Bicevska, & Viesturs Spulis (DIVI Grupa Ltd, Latvia)
14:10-14:40	The Use of Information Communication Technology and Distributed Ledger Technology in Combatting Public Procurement Corruption: A South African Perspective: Johnny Prince, Jean-Paul Van Belle (University of Cape Town, South Africa), & Marita Turpin (University of Pretoria, South Africa)

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114:40-15:10	<i>The Mood of the Silver Economy: A Data Science Analysis of the Mood States of Older Adults and the Implications on their Wellbeing:</i> Marco Palomino, Rohan Allen, Farida Aider, Francesca Tiroto, Ioanna Giorgi (University of Plymouth, United Kingdom), Hazel Alexander (Plymouth Community Homes, United Kingdom), & Giovanni Masala (University of Kent, United Kingdom)
15:10-15:30	Closing of AIST/DSH/ISM
09:00-11:00 EEST	Tuesday 06.09.2022 online. Session 2. Chair: Jarosław Wątróbski & Oskar Szumski JOIN HERE
09:00-09:10	Opening of AIST/ISM, Witold Chmielarz, Ewa Ziemia, & Jarosław Wątróbski
09:10-09:30	<i>Identifying Reliable Sources of Information about Companies in Multilingual Wikipedia:</i> Włodzimierz Lewoniewski, Krzysztof Węcel, & Witold Abramowicz (Poznań University of Economics and Business, Poland)
09:30-09:50	<i>Process-oriented Documentation of User Requirements for Analytical Applications - Challenges, State of the Art and Evaluation of a Service-based Configuration Approach:</i> Christian Hrach, Rainer Alt (Leipzig University, Germany), & Stefan Sackmann (Martin Luther University Halle-Wittenberg, Germany)
09:50-10:10	<i>Modelling an IT solution to Anonymise Selected Data Processed in Digital Documents:</i> Barbara Probiez, Tomasz Jach, Jan Kozak, Radosław Pacud (University of Economics in Katowice, Poland), & Tomasz Turek (Częstochowa University of
10:10-10:30	<i>Towards the Temporal Multi-Criteria Assessment of Sustainable RES Exploitation in European Countries:</i> Aleksandra Bączkiewicz (University of Szczecin, Poland)
10:30-10:45	<i>A Look at Intersection of the Society Evolution and Information Systems:</i> Dmitry Gakh (Institute of Control Systems of ANAS, Azerbaijan)
10:45-11:00	<i>High-tech Offers on Ecommerce Platform During War on Ukraines:</i> Dariusz Grabara (University of Economics in Katowice, Poland)
13:30-15:30 EEST	Tuesday 06.09.2022 online. Session 3. Chair: Alberto Cano JOIN HERE
13:30-13:50	<i>Towards Sustainable Transport Assessment Considering Alternative Fuels Based on MCDA Methods:</i> Jarosław Wątróbski & Aleksandra Bączkiewicz (University of Szczecin, Poland)
13:50-14:10	<i>Towards the Identification of MARCOS Models Based on Intuitionistic Fuzzy Score Functions:</i> Bartłomiej Kizielewicz, Bartosz Paradowski, Jakub Więckowski (West Pomeranian University of Technology in Szczecin, Poland), & Wojciech Sałabun (National Institute of Telecommunications, Poland)
14:10-14:30	<i>A Novel Iterative Approach to Determining Compromise Rankings:</i> Bartłomiej Kizielewicz, Andrii Shekhovtsov (West Pomeranian University of Technology in Szczecin, Poland), & Wojciech Sałabun (National Institute of Telecommunications, Poland)
14:30-14:50	<i>Blockchain-Based Self-Sovereign Identity Approach for Inter-Organizational Business Processes:</i> Amal Abid, Saoussen Cheikhrouhou (ReDCAD Lab – ENIS, Tunisia), Slim Kallel (University of Sfax, Tunisia), & Mohamed Jmaiel (ReDCAD Laboratory, Tunisia)
14:50-15:10	<i>Web Intrusion Detection Using Character Level Machine Learning Approaches with Upsampled Data:</i> Talya TÜmer Sivri, Nergis Pervan Akman, Ali Berkol, & Can Peker (BITES, Turkey)

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16:00-18:00 EEST	Tuesday 06.09.2022 online. Session 4. Chair: Ewa Ziemia JOIN HERE
16:00-16:25	Performance Management of IT Professionals: A Humanistic Model: Marcus Vinicius Alencar Terra, & Rodolfo Miranda de Barros (Universidade Estadual de Londrina, Brazil)
16:25-16:50	Students' Online Behaviour in the Time of the COVID-19 Pandemic: Insights from Poland and Ukraine: Dariusz Dymek, Svitlana Didkivska, Mariusz Grabowski, Grażyna Paliwoda-Pękosz (Cracow University of Economics, Poland), & Tetiana Anatoliivna Vakaliuk (Zhytomyr Polytechnic State University, Ukraine)
16:50-17:10	Required Quality of Service Attributes in the Context of Various Web Services Types: Maksymilian Iwanow, Helena Dudycz, & Krzysztof Michalak (Wroclaw University of Economics and Business, Poland)
17:10-17:30	Digital Business Transformation Methodologies: A Quasi-systematic Review of Literature: Adriano Lima, Methanias Júnior, Rogério Nascimento, & Francisco Neto (Universidade Federal de Sergipe, Brazil)
17:30-17:50	Critical Success Factors for Adopting Electronic Document Management Systems in Government Units: Ewa Ziemia, Tomasz Papaj (University of Economics in Katowice, Poland), & Danuta Descours (Marshal's Office of the Silesian Voivodeship, Poland)
17:50-18:00	Closing and awarding AIST/ISM, Ewa Ziemia & Jarosław Wątróbski

DMC Program

16:00-18:00 EEST	Monday 05.09.2022 on-site. Chairs: Andrzej Janusz, Michał Okulewicz, Dominik Ślęzak JOIN HERE
16:00-16:20	Michał Okulewicz , Predicting the Costs of Forwarding Contracts: Analysis of Data Mining Competition Results
16:20-16:40	Andrzej Janusz, Dominik Ślęzak , KnowledgePit Meets BrightBox: A Step Toward Insightful Investigation of the Results of Data Mining Competitions
16:40-17:00	Dymitr Ruta, Ming Liu , Ling Cen, Quang Hieu Vu - Diversified gradient boosting ensembles for prediction of the cost of forwarding contracts
17:00-17:20	Podlodowski Łukasz , Predicting the Costs of Forwarding Contracts Using XGBoost and a Deep Neural Network

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17:20-17:40	Eftim Zdravevski , Application of Diversified Ensemble Learning in Real-life Business Problems: The Case of Predicting Costs of Forwarding Contracts
17:40-18:00	Sławomir Pioroński , Tomasz Górecki, Using gradient boosting trees to predict the costs of forwarding contracts
09:00-11:00 EEST	Wednesday 07.09.2022 online. Chairs: Andrzej Janusz, Michał Okulewicz, Dominik Ślęzak, Marcin Szczuka JOIN HERE
09:00-09:20	Haitao Xiao , Yuling Liu, Dan Du, Zhigang Lu - An Approach for Predicting the Costs of Forwarding Contracts using Gradient Boosting
09:20-09:40	Quang Hieu Vu , Ling Cen, Dymitr Ruta, Ming Liu - Key Factors to Consider when Predicting the Costs of Forwarding Contracts
09:40-10:00	Aleksandra Lewandowska - XGBoost meets TabNet in Predicting the Costs of Forwarding Contracts
10:00-10:20	Eyad Kannout, Michał Grodzki , Marek Grzegorowski - Considering various aspects of models' quality in the ML pipeline - application in the logistics sector
10:20-10:40	Stanisław Kaźmierczak - Prediction of the Costs of Forwarding Contracts with Machine Learning Methods
10:40-11:00	Marcin Szczuka, Andrzej Janusz, Andrzej Bukała, Bogusław Cyganek, Jakub Grabek, Łukasz Przebinda, Dominik Ślęzak, Tomasz Tajmajer, Andżelika Zalewska - What's next at KnowledgePit: Privacy-preserving Matching of Encrypted Images (IEEE BigData 2022 Cup)

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MDASD Program

16:00-18:00 EEST	Monday 05.09.2022 on-site. Chair: Ivan Luković JOIN HERE
16:00-16:10	Introductory Word by the Chair
16:10-17:00	KEYNOTE: Bogusław Cyganek, Modern C++ in the era of new technologies and challenges - why and how to teach modern C++?
17:00-17:20	Szymon Kutra, Wiktor Daszczuk and Danny Czejdo, An Experimentation Framework for Specification and Verification of Web Services
17:20-17:40	Henrik Gustavsson, Jan Carlson and Eduard Enoiu, Model-Based System Engineering Adoption in the Vehicular Systems Domain
17:40-18:00	Leo van Schooten, Marco Alonso, Ronald Wiericx and Mathijs Schuts, From MSL to Dezyne: an Industrial Application Of QVTo

KAM Program

16:00-18:00 EEST	Monday 05.09.2022 on-site. Chairs: Maciej Pondel, Mieczysław Owoc JOIN HERE
16:00-16:10	Conference Opening
16:10-16:30	Dorota Walentek and Dorota Jelonek, Top-down and bottom-up collaboration as a factor in the technological development of smart city. The example of Taipei

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16:30-16:50	Anna Nowacka and Dorota Jelonek, The impact of the multi-variant remote work model on knowledge management in enterprises. Applied tools.
16:50-17:10	Adamu Hussaini , Zahia Guessoum and Eunika Mercier Laurent, Elaboration of Financial Fraud Ontology
16:00-18:00 EEST	Tuesday 06.09.2022 online. Chairs: Maciej Pondel, Mieczysław Owoc JOIN HERE
16:00-16:20	Shuvam Chatterjee and Pawel Bryla - The impact of fragrance on store brand loyalty
16:20-16:40	Edward Szczerbicki , Cesar Sanin and Karina Sterling-Zuluaga - Representing and Managing Experiential Knowledge with Decisional DNA and its Extensions
16:40-17:00	Maciej Suder and Tadeusz Gospodarek - SAP Fiori as a Cause of Innovation and Sociotechnical System Arising
17:00-17:20	Iwona Chomiak-Orsa, Piotr Domagała, Andrzej Greńczuk, Wojciech Grzelak , Artur Kotwica and Kazimierz Perechuda-Open Data for simulation to determine the efficient management of parking spaces in Smart City
09:00-11:00 EEST	Wednesday 07.09.2022 online. Chairs: Maciej Pondel, Mieczysław Owoc JOIN HERE
09:00-09:20	Agata Kozina, Zdzisław Kes, Marcin Hernes, Paweł Golec , Krzysztof Nowosielski, Olena Sidor and Korlan Zhanat - Generative Adversarial Networks for students' structure prediction. Preliminary research
09:20-09:40	Katarzyna Hołowińska, Małgorzata Sobińska , Beata Butryn and Laura Martini - Digitalization impact on higher education – potential and risks

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09:40-10:00	Natalia Nitarska, Piotr Wiśniewski, Krzysztof Kluza, Mateusz Zaremba and Antoni Ligeza - Case Study of Designing Interface of the AGH Students Information Bulletin Work Support System
10:00-10:20	Raghav Sharma , Deependra Singh and Raksha Sharma - Named Entity Recognition System for the Biomedical Domain

CS&P Program

09:00-11:00 EEST	Tuesday 06.09.2022 online. Chair: Nguyen, Hung Son JOIN HERE
09:00-09:25	Billy Naumann , Christine Jakobs and Matthias Werner, Formal analysis of timeliness in the RaSTA protocol
09:25-09:50	Łukasz Puławski , Improvement of design anti-pattern detection with spatio-temporal rules in the software development process
09:50-10:10	Pawel Batko and Marcin Kuta , Type System of Anemone Functional Language
10:10-10:30	Marcin Zimniak , Marta Burzańska, Piotr Wiśniewski and Bogdan Franczyk, Heuristic algorithm for periodic patterns discovery in a database workload reconstruction

NSA+ Program

09:00-11:00 EEST	Tuesday 06.09.2022 online. Chair: Marek Bolanowski JOIN HERE
09:00-09:25	Arman Ferdowsi, An Integer Programming Approach Reinforced by a Message-passing Procedure for Detecting Dense Attributed Subgraphs

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09:25-09:45	Jaroslav Michalak, Location Accuracy of a Ground Station based on RSS in the Rice Channel
09:45-10:05	Mina Khoshrangbaf, Vahid Khalilpour Akram and Moharram Challenger, Ant Colony based Coverage Optimization in Wireless Sensor Networks
10:05-10:25	Paweł Dymora, Mirosław Mazurek and Kamil Łyczko, The effectiveness analysis of selected IT tools for predictions of the COVID-19 pandemic
10:25-10:45	Fabiola Pereira, Evaluation without Ground Truth: a Comparative Study on Preference Mining Techniques in Twitter Social Network
13:30-15:30 EEST	Tuesday 06.09.2022 online. Chair: Andrzej Białas JOIN HERE
13:30-13:55	Ghada Moualla, Sebastien Bolle, Marc Douet and Eric Rutten, Self-adaptive Device Management for the IoT Using Constraint Solving
13:55-14:20	Michał Jarosz, Konrad Wrona and Zbigniew Zieliński, Formal verification of security properties of the Lightweight Authentication and Key Exchange Protocol for Federated IoT devices
14:20-14:40	Stefan Bosse, Wireless Agent-based Distributed Sensor Tuple Spaces using Bluetooth and IP Broadcasting
14:40-15:00	Vasyl Ustimenko and Michal Klisowski, On $D(n; q)$ quotients of large girth and hidden homomorphism based cryptographic protocols
15:00-15:20	Sota Kato, Chalee Vorakulpipat and Soontorn Sirapaisan, A Comparative Study of User Identification for COVID-19 Vaccination Online Registration



16:00-18:00 EEST	Tuesday 06.09.2022 online. Chair: Andrzej Białas JOIN HERE
16:00-16:25	Mariusz Sepczuk, Zbigniew Kotulski, Wojciech Niewolski and Tomasz Nowak, Low-complexity access control scheme for MEC-based services
16:25-16:50	Sławomir Matelski, Universal Key to Authentication Authority with Human-Computable OTP Generator
16:50-17:15	Christine Jakobs, Matthias Werner, Karsten Schmidt and Gerhard Hansch, Heuristic Risk Treatment for ISO/SAE 21434 Development Projects
17:15-17:35	Frank Moses and Kurt Sandkuhl, Information security management in German local government
17:35-17:55	Thiago Sandes, Admilson Lima and Edward Moreno, Performance Analysis and Application of Mobile Blockchain in Mobile Edge Computing Architecture
17:55-18:15	Jens Dörpinghaus, Vera Weil, Carsten Düing and Martin W, Sommer. Centrality Measures in multi-layer Knowledge Graphs

S3E+MDASD Program

13:30-15:30 EEST	Tuesday 06.09.2022 online. Chair: Ivan Luković JOIN HERE
13:30-14:00	Łukasz Korzeniowski and Krzysztof Goczyla, Discovering interactions between applications with log analysis



14:00-14:30	Kamil Rybiński and Michal Smialek Beyond, Low-Code Development: Marrying Requirements Models and Knowledge Representations
14:30-14:50	Istvan David, Eugene Syriani and Constantin Masson, Extensible Conflict-Free Replicated Datatypes for Real-time Collaborative Software Engineering
14:50-15:10	Mert Ozkaya, Mehmet Alp Kose, Arda Burak Mamur and Turker Koc, ModelWeb: A Toolset for the Model-based Testing of Web Applications

SEW&IWCPs Program

16:00-18:00 EEST	Tuesday 06.09.2022 online. Chair: Mike Hinchey JOIN HERE
16:00-16:05	Introductory Word by the Chair
16:05-16:30	Necmettin Ozkan, Seval Bal, Tugba Gurgun Erdogan and Mehmet Sahin Gök: <i>Scrum, Kanban or a Mix of Both? A Systematic Literature Review (#143)</i>
16:30-16:55	Sanidhya Vijayvargiya, Lov Kumar, Lalita Bhanu Murthy and Sanjay Misra: <i>Software Requirements Classification using Deep-learning Approach with Various Hidden Layers (#140)</i>
16:55-17:20	Venkata Krishna Chandra Mula, Lov Kumar, Lalita Bhanu Murthy and Prof. Aneesh Krishna: <i>Software Sentiment Analysis using Deep-learning Approach with Word-Embedding Techniques (#138)</i>
17:20-17:40	Adela Bierska, Barbora Buhnova and Hind Bangui: <i>An Integrated Checklist for Architecture Design of Critical Software Systems (#287)</i>

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17:40-18:00	Onur Berker Alhas, Melike Oruc, Goksun Beren Usta, Hussein Marah, Baris Tekin Tezel and Moharram Challenger: <i>Towards developing a Cyber-physical Warehouse System for Automated Order-Picking for Online Shopping</i> (#208)
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DSH Program

09:00-11:00 EEST	Wednesday 07.09.2022 online. JOIN HERE
09:00-09:25	Łukasz Sosnowski , Joanna Żuławińska, Soma Dutta, Iwona Szymusik, Aleksandra Zyguła and Elżbieta Bambul-Mazurek, Artificial Intelligence in Personalized Healthcare Analysis for Womens' Menstrual Health Disorders
09:25-09:50	Oussama Hamel and Messaouda Fareh, Encoder-Decoder Neural Network with Attention Mechanism for Types Detection in Linked Data
09:50-10:10	Oleksandr Sokolov, Aleksandra Mrela, Maryla Bieniek-Majka, Veslava Osinska and Włodzisław Duch, Model of Trust Dissemination of Products Based on Fuzzy Aggregation Norms
10:10-10:30	Minoru Nakayama , Wioletta Nowak and Anna Zarowska, Detecting Symptoms of Dementia in Elderly Persons using Features of Pupil Light Reflex
10:30-10:45	Alexandre Heidein and Rafael Stubs Parpinelli , Financial News Effect Analysis on Stock Price Prediction Using a Stacked LSTM Model
10:45-11:00	Mauro Nascimben and Lia Rimondini, Visually enhanced python functions for clinical equality of measurement assessment

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MMAP Program

11:30-13:30 EEST	Wednesday 07.09.2022 online JOIN HERE
11:30-11:55	Andrzej Lamecki , Krzysztof Kaczmarek and Joanna Porter-Sobieraj, Hierarchical data structures in rendering scenes containing a massive number of light sources
11:55-12:15	Konrad Koniarski and Andrzej Myśliński, A Modified ICP Algorithm Based on FAST and Optical Flow for 3D Registration
12:15-12:35	Marek Parfieniuk , Encrypting JPEG-compressed images by substituting Huffman code words
12:35-12:55	Julia Falkowska and Janusz Sobiecki, Replication of first-click eye tracking A/B test of webpage interactive elements