

SISY 2023 preliminary program

Venue: "Dr. Mijo Mirković" Faculty of Economics and Tourism, Juraj Dobrila University of Pula
Address: Preradovićeva 1/1, 52100 Pula, Croatia

Time zone: CEST

September 21 (Thursday)



9:00 – 9:30 **Opening Ceremony**

Room Dvorana Pula

9:30 – 10:10 **Plenary Talk I**
Session chair: Levente Kovács

Room Dvorana Pula and online via Teams at [Plenary talk](#) link

104	Peng Shi	Distributed Coordination and Learning on Multi-Agent Systems
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10:10 – 10:30 Coffee break

10:30 – 11:10 **Plenary Talk II**
Session chair: Imre Felde

Room Dvorana Pula

44	Ján Vaščák	UAVs in the Environment of Internet of Vehicles: Fusion of Autonomous Vehicles for Traffic and Transportation Tasks
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11:10 – 11:50 **Plenary Talk III**
Session chair: Péter Galambos

Room Dvorana Pula

126	László Szilágyi	Fuzzy-Possibilistic Product Partition: \rightarrow the First Twelve Years
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12:00 – 13:30 Lunch

University Restaurant

13:30 – 15:30 [T1a] Session on Computational Intelligence I

Room Dvorana Pula

Session chair: Domagoj Frank

29	Tomislav Horvat, Ladislav Havaš, Dunja Srpak, Juraj Havaš, Josip Srpak and Dražen Crčić	Predicting Metabolic Syndrome Risks Using Machine Learning Methods
61	Martin Ferenc Dömény, Melánia Puskás, Levente Kovács and Dániel András Drexler	Population-based chemotherapy optimization using genetic algorithm
4	Kenichi Tamura	A Controllable and Developmental Virtual Life Model
124	Andrej Korenic, Ivan Lorencin, Nikola Tankovic, Pavle Andjus and Domagoj Frank	Review of the machine learning based methods applicable for analysis of intracellular calcium transients imaging
65	Lilla Kisbenedek, Melánia Puskás, Levente Kovács and Dániel András Drexler	Clustering-based parameter estimation of a tumor model
55	Josip Spišić, Matko Zrnić, Drago Žagar and Krešimir Grgić	Modeling and Assessment of RSSI in LoRaWAN Network Using a Neural Network Approach

13:30 – 15:30 [T1b] Session on Informatics I

Room 303

Session chair: Enikő Nagy

12	Isabela Dramnesc and Tudor Jelelean	Mechanical Verification of Insert-Sort and Merge-Sort using Multisets in Theorema
8	Krisztián Mátis, Krisztián-Attila Szilágyi, Csaba Sulyok, Boglárka Hegyi, István Kecseti and Tas Szakács	Voice Recognition Based Automated Teleprompter Application
23	Modupe Odusami, Rytis Maskeliunas, Robertas Damaševičius and Sanjay Misra	Gaussian Laplacian Pyramid Fusion-Based Hybrid Approach for Alzheimer's Disease Classification
32	Bence Both, István Lukács, Beáta Brassai, Zsolt Szabó and Csaba Sulyok	Sensor Throne: Improvement and Monitoring of Sitting Posture through a Mobile Application
70	Dragana Krstić, Suad Suljović, Nenad Petrovic, Sinisa Minic and Zoran Popovic	Utilizing LCR of Wireless System with SC Receiver Weakened by Beaulieu-Xie Fading and κ - μ Interference for Machine Learning-Based QoS Prediction
33	Kristóf-Bálint Nagy, Dániel Bíró, Mátyás Gagy, Norbert Nagy-Seres, Ákos Zsebe and Csaba Sulyok	Home Thermostat for Smart Temperature Control

13:30 – 15:30 [T1c] Online Session on Intelligent Systems

Session chair: Bálint Varga

online session via Teams at [\[T1c\] Online Session on Intelligent Systems](#) link

77	Lam Ka Yeung and Ilya Makarov	Financial Trading via Reinforcement Learning and Convolutional Neural Networks
11	Herlea Alexandru-Emil	Obstacle avoidance using extremities
5	Gergo Ferenc Ignezi, Ernő Horváth and Krisztian Nyilas	A Linear Driver Model of Local Path Planning for Lane Driving
45	Balint Varga, Dongxu Yang, Manuel Martin and Soeren Hohmann	Cooperative Decision-Making in Shared Spaces: Making Urban Traffic Safer through Human-Machine Cooperation
27	Sebastian Cabezas, György Hegedűs and Péter Bencs	Dark-Gray Box Lumped Parameter Thermal Network for High-Speed Spindle Rolling Bearings
102	Tóth Róbert, Kása Richárd and Lentner Csaba	Corporate Financial Literacy at the Hungarian Small and Medium-sized Enterprises across Pandemic Times

13:30 – 14:00 [T1d] E-poster Special Session on Digitalisation, Generation Research, Consumer Trends

Session organizers: Mónika Garai-Fodor and Ágnes Csiszárík-Kocsir

Session chairs: Ágnes Csiszárík-Kocsir and Miklós Mezei

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82	Majid Moazzami, Ghazanfar Shahgholian, Zahra Heydaran-Darougheh-Amnyieh, Amir Mosavi and Arman Fathollahi	Applications of Particle Swarm Optimization Algorithms in Coordination Between Power system stabilizer and flexible AC transmission systems
99	Katalin Jaeckel and Monika Garai-Fodor	How should we change? What skills and knowledge are needed in our changing world?
103	Ágnes Csiszárík-Kocsir and Csaba Berényi	Digital literacy in device use among secondary school students
106	Anett Popovics and Monika Garai-Fodor	Analysis of information on Hungarian food products from the perspective of data obtained from a domestic sample
107	Csilla Ilona Mizser	The war that also destroys trust. An outlook towards some possible solutions.
108	Katalin Jaeckel and Monika Garai-Fodor	Happiness as a goal How do Generation Z students, the marketing professionals of the future, think?
110	Monika Garai-Fodor	The value orientation of young Hungarian consumers and the segmentation role of individual values
111	Csaba Berényi and Ágnes Csiszárík-Kocsir	Examining attitudes towards digital solutions among generation Z
112	Ágnes Csiszárík-Kocsir and Csaba Berényi	Digital device use as a function of digital socialisation among secondary school students
113	Ágnes Csiszárík-Kocsir and Oszkár Dobos	The aspects of RDI project management in Hungary and Romania in the light of the pandemic
114	Ágnes Csiszárík-Kocsir and Oszkár Dobos	The place and role of research, development and innovation projects in the life of Hungarian and Polish micro, small and medium-sized enterprises after the pandemic
115	Ágnes Csiszárík-Kocsir	Digital presence and awareness through the content consumption habits of different generations
116	Ágnes Csiszárík-Kocsir and János Varga	A project analysis of the introduction of public cryptocurrencies - The example of Sand Dollar and Digital Real

117	Ágnes Csiszárík-Kocsir and János Varga	Detectable manifestations of project orientation in Hungary and Romania after the pandemic period
118	Réka Saáry	Conceptualization of Corporate Security Responsibility (CSecR) as Perceived by Security Experts
119	István Márk Tóth and Ágnes Csiszárík-Kocsir	Exploring the identification with agile values in different generations
120	János Varga	The potential benefits of innovation as seen by some domestic businesses
121	János Varga	Exploring the link between competitiveness and innovation
122	János Varga and Ágnes Csiszárík-Kocsir	Climate change megaprojects - End-user evaluation of Maldive Floating City and Oceanix Busan
123	János Varga and Ágnes Csiszárík-Kocsir	Exploring the use of digital tools in a technology and change-driven world in Hungary and Poland in the light of the pandemic
125	Monika Garai-Fodor and Anett Popovics	Online purchasing habits and the communication solutions in the light of the digitalisation trend

15:30 – 15:50 Coffee break

15:50 – 17:50 [T2a] Session on Computational Intelligence II
Session chair: Nikola Tanković

Room Dvorana Pula

74	Robert Logožar, Matija Mikac and Jurica Hizak	ChatGPT on the Freshman Test in C/C++ Programming
14	Szilárd Aradi, László Lindenmaier and István Ferenc Lovétei	Runtime Performance Analysis of a MILP-Based Real-Time Railway Traffic Management Algorithm
63	Alesandro Žužić, Robert Sajina and Nikola Tanković	Classification of Visual Perception EEG signals for a 2D platformer game
52	Lehel Csató, Tamás Kaszta and Hanna-Georgina Lieb	Wavelet-based Image Classification Using Prototypes
71	Eszter Virágh, Bálint Kiss and Dániel András Drexler	Closed-loop control and motion planning for parallel structural chemical reactions
91	Ádám Kovács and Tibor Tajti	Enhancing Sentiment Analysis Accuracy on IMDB Reviews through Ensemble Machine Learning Techniques

15:50 – 16:35 [T2b] Special Session on PhD Student Research in Applied Informatics

Room 303

Session chair: Rita Fleiner

43	Berta Mach, Renáta Nagyné Elek and Tamás Haidegger	Recent Approaches in Laparoscopic Training Phantom Development—a Review
50	Attila Biró, Antonio Ignacio Cuesta-Vargas and Sándor Miklós Szilágyi	Predictive sports strategy approach using YOLO and YOLO-NAS in performance sports
69	Barbara Tóth, László Gulácsi and Zsombor Zrubka	The relationship between young adults' internet skills and their satisfaction with life and career

15:30 – 17:50 [T2c] Online Session on Informaticsonline session via Teams at [\[T2c\] Online Session on Informatics](#) link

Session chair: Zsombor Zrubka

56	Imre Pethő, Tamás Micsik, György Eigner and Rita Fleiner	Detection and visualization of metabolic pathway activity based on immunohistochemistry
1	Barnabás Sándor and Zoltán Rajnai	Smart Building IoT Cybersecurity: A Review of Threats and Mitigation Technique
2	Ferenc Tolner, György Eigner and Balázs Barta	Comprehensive Analysis of H2020 Funding Participation based on LDA Topic Modeling and Robust Outlier Identification
18	Michal Staňo, Ladislav Hluchý, Peter Krammer, Štefan Dlugolinský, Viet Tran and Marcel Kvassay	Classification of Tree Species by Federated Learning
39	Alin-Marius Stanciu, Horia Ciocarlie and Carla-Patricia Julean	Product Security: An Overview of Concepts and Challenges
40	Jean Rosemond Dora, Ladislav Hluchy and Jean Rosemond Dora	Exploitation of the Java Deserialization Vulnerability To Access ForgeRock-OpenAM Server
49	Renata Kramberger, Iztok Fister, Iztok Fister Jr. and Aida Kamisalic	Toward anomaly detection in the blockchain using Numerical Association Rule Mining

15:50 – 16:50 [T2d] E-poster Session on Intelligent Systems
 Session chairs: Sándor Szénási and Miklós Mezei

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100	Dávid Kelemen and Sándor Szénási	Optimization and representation of a network of food delivery drones in simulation
90	Károly Beneda, Peter Klamo, Rudolf Andoga, Róbert Czakó, Peter Korba and Ladislav Főző	Conceptual Development of Wireless Distributed Control System for a Micro Gas Turbine Engine
85	Ghazanfar Shahgholian, Arman Fathollahi and Amir Mosavi	Dynamic Load Frequency Control for Small-Signal Stability Analysis in Steam Plant with Reheater
88	Michal Hovanec, Peter Korba, Volodymyr Tymofiiiv, Ingrid Sekelová and Ladislav Főző	Simulating Decarbonization of the Road Transport Sector by Technomatix Plant Simulation
34	Andrea Ferenczová and Ján Perháč	Interactive Web-based Interpreter of the λ -Calculus
101	Karlo Graf, Jonatan Lerga and Branka Dobraš	Data Collection and Hiding Capabilities of Android Stalkerware
89	Michal Hovanec, Peter Korba, Samer Al-Rabeei, Martin Vencel, Branislav Ráček and Jana Tkáčová	Simulation of a digital factory using Tecnomatics Plant Simulation to evaluate production processes and improve logistics safety

18:00 Welcome Reception

University Restaurant

September 22 (Friday)

9:00 – 10:40 [F1a] Session on Informatics II
 Session chair: Snježana Babić

Room Dvorana Pula

97	Snježana Babić, Darko Etinger and Marina Šnobl	The Adoption of Smart Personal Assistants in Education: The Case of Croatian Primary School Teachers
30	Cintia Szabó, Károly Simon, Krisztián-Tamás Antal and Levente-Zoltán Bartus	Energy-efficient Timetable Display for Meeting Rooms using e-Paper Technology and Low-powered Microcontrollers
105	Elena Đerić and Domagoj Frank	Factors influencing perceived switching cost and user switching behavior towards AI-based solutions and technologies - a systematic review
9	Ildikó Holik, Tamás Kersánszki and István Dániel Sanda	The Impact of the Pandemic Period on Digital Educational Innovations
17	Csaba Sulyok, Viven Bartha, Bertalan Vad, Hunor Szimma and Nikolette Domokos	Real-time Software System for Latin Dance Festival Organizers and Participants

9:00 – 10:40 [F1b] Special Session on Digitalisation, Generation Research, Consumer Trends I

Room 303

Session organizers: Mónika Garai-Fodor and Ágnes Csiszárík-Kocsir

Session chair: Ágnes Csiszárík-Kocsir

6	Krisztián Bálint	Tracking Consumer Habits and Orders Using Blockchain Technology
10	Yue Wu and Katalin Dr. Takácsné Prof. Dr. György	Sustainable paths to food security from the perspective of food loss and waste management
13	Michael Krempf and Philipp Rosenberger	Practical Application of Risk Management in Project Management
15	Máté Prorok and István Takács	Legal and moral issues related to artificial intelligence technology in business
46	Tibor Farkas	The challenges for the European Defense Industry

9:00 – 11:00 [F1c] Online Special Session on PhD Student Research in Applied InformaticsOnline session via Teams at [\[F1c\] Online Special Session on PhD Student Research in Applied Informatics](#) link

Session organizer: László Horváth

Session chair: Amir Mosavi

22	Olta Llaha, Azir Aliu and Esmeralda Kadena	Predicting the Impact of Data Visualization on Decision-Making in Higher Education
66	Meriem Fgaier and Zsombor Zrubka	Less is more: imputing for missing direct medical costs within the Middle East and North Africa region using macroeconomic indicators
67	Hana Al-Abdulkarim and Zsombor Zrubka	How Effective is Continuous Glucose Monitoring? A Comparison of different Random-Effect Meta-analysis Techniques
81	Mohammad Amin Honarvar, Ghazanfar Shahgholian, Hamid Mahmoodian, Somaye Yaghoubi, Amir Mosavi and Arman Fathollahi	A Review of PSS Parameters Optimization Using Evolution-Based Meta-Heuristic Optimization Algorithms to Improve Power System Stability
83	Sina Ardabili, Amir Mosavi and Imre Felde	Machine learning in Diabetes Modeling
84	Seyed Milad Mousavi, Fatemeh Sadat Mirshafiee, Emad Shahbazi, Mohadeseh Safi and Amirhosein Mosavi	YOLO for Lung Disease Detection from CT Scans
86	Sina Ardabili, Amir Mosavi and Imre Felde	Advances of Deep learning in Breast Cancer Modeling
47	Bence Varga, József K. Tar and Richárd Horváth	Fixed Point Iteration-based Adaptive Control with Output Filtering

10:40 – 11:00 Coffee break

11:00 – 12:20 [F2a] Session on Informatics III

Room Dvorana Pula

Session chair: Tibor Tajti

72	Tamás Menyhárt, Péter Polgár, Csanád Bátor Baksay, Tibor Tajti, Gergely Kocsis and Zoltán Gál	Performance of Parallel and Storage Intensive Jobs on Clustered Singularity Containers
109	Goran Martinović, Ines Drenjančević, Drago Žagar and Tatjana Bačun	Coronary and Heart Disease Risk Estimation based on Predictive Data Analysis
95	Eszter Kail, Anna Banati, Torok Bernat, Amirhosein Mosavi and Csaba Mako	Machine Learning Methods for Cybersecurity: Review and Bibliometric Analysis
57	Ágnes Gerse, Rita Fleiner and Adrienn Dineva	Wind and Solar Power Resource Availability Assessment Using Market Monitoring Data

11:00 – 12:40 [F2b] Special Session on Digitalisation, Generation Research, Consumer Trends II

Room 303

Session organizers: Mónika Garai-Fodor and Ágnes Csiszárík-Kocsir

Session chair: Ágnes Csiszárík-Kocsir

25	Nóra Fodor and Andrea Tick	The Digital Paper Chase: Investigating Acceptance and Usage of an E-Document App
62	Pallagi András, Peto Richard and Hronyecz Erika	Increasing the resilience of critical infrastructures with defense zone system
53	Mariann Békésy	Forecasting patient arrival trends to the Emergency Department based on weather: a scoping review
36	Zsuzsanna Deak	Internet Use, Social Support, and Sense of Well-Being from a Generational Perspective
16	Lili Belkovics and István Takács	The digitalization of Formula 1: Innovations from car design to race strategy

12:40 – 14:00 Lunch

University Restaurant

14:00 – 15:40 [F3a] Special Session on 5G and Cybersecurity

Room Dvorana Pula

Session organizers and chairs: Anna Bánáti and Miklós Kozlovszky

28	Lourdes Ruiz and Rajnai Zoltan	5G Standardization Process: An Overview
37	Silvana Qose and Rajnai Zoltan	Blockchain Applications in 5G Networks: Incentives.
79	Mera Saulaiman and Akos Csilling	Side Benefits of Cybersecurity Measures An Empirical Study
94	Áron Puskás, Anna Bánáti and Eszter Kail	Neural Network-based Log Analysis Methods
96	Jan Francisti, Zoltán Balogh, György Molnár Dr., József Kopják, Gergely Sebestyén and Enikő Nagy	Methods for verifying the security of available IoT devices

14:00 – 15:20 [F3b] Session on Intelligent Robotics and Intelligent Mechatronics

Room 303

Session chairs: Snježana Babić and Darko Etinger

51	István Tüske	Analysing the workspace and singularities of a tilting table with parallel kinematics
93	Goran Bubaš, Snježana Babić and Antonela Čizmešija	Usability and User Experience Related Perceptions of University Students Regarding the Use of Bing Chat Search Engine and AI Chatbot: Preliminary Evaluation of Assessment Scales
98	Ármin Károly and Péter Galambos	A Hands-on Tutorial for Implementing Eye-in-hand Visual Servoing in Robot Applications
24	Andras Nagy and Zoltan Rigo	Development of digital diode driver for modern pentathlon laser pistols

15:40 – 16:00 Coffee break

16:00 – 17:00 [F4a] Session on Intelligent Manufacturing Systems

Room Dvorana Pula

Session chair: Zoltán Rajnai

7	Haya Altaieb and Zoltán Rajnai	Malware Attacks on SCADA Systems: Assessing Risks and Strengthening Cybersecurity Measures
54	Ákos Szabó-Gali and Imre Felde	Utilizing Artificial Neural Networks for Estimating Heat Transfer Coefficients
68	Viktor Vass and György Györök	The role of intelligent measurement and data collection systems for life cycle assessment of technological processes

16:00 – 17:00 [F4b] Special Session on PhD Student Research in Applied Informatics

Room 303

Session chair: Dániel Drexler

48	Suryakant Tyagi and Sándor Szénási	Speech Emotion Recognition using Long Short Term Memory Models and Grey Wolf Optimization
60	Gergely Sebestyén and József Kopjak	Assessing the Stability of Time-Division Multiple Access (TDMA) Mesh Networks through Flooding Route Selection
87	Attila Biró, Antonio Ignacio Cuesta-Vargas and László Szilágyi	Applied AI for real-time detection of lesions and tumors following severe head injuries
58	Gergely Sebestyén and József Kopjak	Optimization of TDMA Wireless Network Mapping using Merged Data Collecting

18:00 Banquet

University Restaurant

September 23 (Saturday)

10:00 Walking tour in the city and lunch