

March 2, Wednesday

10:00 – 10:15 **Opening Ceremony**

10:15 – 10:55 **Keynote Speech**

Session Chair: **Levente Kovács**, Óbuda University, Budapest, Hungary

The SAMI Saga: Milestones, Excellences, Family Members

Imre J. Rudas, Óbuda University, Budapest, Hungary

10:55 – 11:00 **Group photo / onsite and via Zoom also**

11:00 – 11:20 **Coffee break**

11:20 – 12:00 **Plenary Session I**

Session Chair: **Radovan Hudák**, Technical University of Košice, Slovakia

Biomedical Engineering in the 21st Century and in the Future

Marek Penhaker, Technical University of Ostrava, Czech Republic

12:00 – 13:30 **Lunch**

13:30 – 14:10 **Plenary Session II**

Session Chair: **Tamás Haidegger**, Óbuda University, Budapest, Hungary

Building a Surgical Robotics Company to Succeed

Dwight Meglan, USA

14:10 – 15:30 **[W1] Session on Artificial Intelligence and Intelligent Manufacturing Systems**

Session Chair: **József Kopják**

29	Szilárd Hunor Tóth, Zsolt János Viharos and Ádám Bárdos	Autonomous Vehicle Drift With a Soft Actor-critic Reinforcement Learning Agent
34	Mercedes Vetráb and Gábor Gosztolya	Handling the stochastic behaviour of the Bag-of-Audio-Words method
84	József Kopják and Gergely Sebestyén	Energy Consumption Model of Sensor Nodes using Merged Data Collecting Methods
85	Gergely Sebestyén and József Kopják	Battery Life Prediction Model of Sensor Nodes using Merged Data Collecting methods

14:10 – 15:30 [W1P] E-poster session on Artificial Intelligence and System Engineering

Session Chair: **Eva Chovancová**

36	Eva Chovancová, Ján Hurtuk, Jakub Palša and Matúš Škerlík	Chord analyzer
71	Miriam Hlinková, Šimon Karaffa, Jakub Leško, Natália Gecejová, Rudolf Andoga and Róbert Bréda	Analysis of Intelligent Decision System for a Small Unmanned Aircraft
72	Roland Istenes-Németh, Károly Beneda and Ladislav Fozo	Development of Hardware Simulator for Turbojet Engine

15:30 – 15:50 Coffee break

15:50 – 17:10 [W2] Session on Informatics, Systems Engineering and Engineering Education (e-learning)

Session Chair: **Zoltán Balogh**

43	Michal Kolárik, Ján Paralič, Zuzana Pella and Lucia Szalonová	Web based application for processing cardiology medical records
9	László Kocsány and Emese Gincsiné Szádeczky-Kardoss	Development of a user interface for parking lot exploration
13	Melvin Ogbolu, Abdullahi Mohammed Alhaji and Miklos Kozlovsky	The Structural Diagram for the Development of Human Papillomavirus (HPV) and Cervical Cancer Risk Assessment
78	György Molnár, Zoltan Balogh, Beáta Orosz, Kristian Fodor, Jan Francisti, József Cserkó and Brigitta Balázs	Possibilities and challenges of monitoring and evaluating digital education in electronic environments from a pedagogical and technological perspective

15:50 – 17:10 [W2P] E-poster session on Informatics

Session Chair: **Jakub Palša**

3	Jakub Palša, Ján Hurtuk, Eva Chovancová and Marek Havira	Configuration Honeypots with an Emphasis on Logging of the Attacks and Redundancy
15	Martin Chovanec, Martin Havrilla, Martin Hasin and Eva Chovancová	Analysis of Attacks on Mail Service Infrastructure Based on Application Logs and NetFlow Protocol
31	Branislav Mados, Anton Balaz, Heidar Khorshidiyeh and Martin Hasin	Information Hiding Using Domain-Specific Hierarchical Data Structure Symmetry-aware Sparse Voxel Directed Acyclic Graphs

18:30 Welcome Reception

at Coctail Bar

March 3, Thursday

9:00 – 10:20

[T1] Session on Computational Intelligence and Artificial Intelligence

Session Chair: **László Lindenmaier**

12	László Lindenmaier, Szilárd Aradi, Tamás Bécsi and Olivér Törő	Comparison of Sensor Data Fusion Algorithms for Automotive Perception System
28	Domonkos Csuzdi, Olivér Törő and Szilárd Aradi	Evaluation of the log-homotopy particle flow filter for localisation
56	Anikó Kopacz, Ágnes Mester, Sándor Kolumbán and Lehel Csató	Feature space based on pairwise conflicts applied to the train rescheduling problem
48	Olivér Rákos and Szilárd Aradi	Maneuver Classification of Dynamic Occupancy Grid Time Series From Highway Traffic

9:00 – 10:20

[T1P] E-poster Session on Computational Intelligence and Man-Machine Systems

Session Chair: **Matus Pleva**

1	Ioana Albisoru, Mirabela Ursu and Marius Marcu	Prediction of user interruptions generated by mobile communication media and evaluating the impact of interruption
46	Dacian Avramoni, Alexandru Iovanovici, Anca-Maria Ilienescu and Lucian Prodan	Short term traffic congestion prediction using publically available traffic data: a case study on Timisoara
37	Matus Pleva, Elie Martens and Jozef Juhar	Automated Covid-19 Respiratory Symptoms Analysis from Speech and Cough

10:20 – 10:40

Coffee break

10:40 – 11:20

[T2] Session on Biomedical Engineering and Intelligent Mechatronics

Session Chair: **Dániel András Drexler**

67	Erzsébet Nagy, Melánia Puskás and Dániel András Drexler	Comparison of artificial neural network and ANFIS for parameter estimation of a tumor model
14	Ádám Szabó, Tamás Bécsi and Szilárd Aradi	LPV-based modeling of a floating piston pneumatic actuator

11:20 – 12:00 [T3] Special Session on Cybersecurity, 5G Cybersecurity

Session Chair: **Miklós Kozlovsky**

69	Miklós Orsós, Miklós Vilmos Kecskés, Eszter Kail and Anna Bánáti	Logcollection and SIEM for 5G SOC
70	Ádám Balogh, Máté Érsok, László Erdődi, Anikó Szarvák, Eszter Kail and Anna Bánáti	Honeypot optimization based on CTF game

12:00 – 13:30 Lunch**13:30 – 14:45 [T4] Special Session on Recent PhD Research Achievements in Applied Informatics**

Session Chair: **László Horváth**

17	Zoltan Varga and Dr. Ervin Racz	Experimental Investigation of the Performance of a Thermoelectric Generator
61	Ioan-Marius Pisak-Lukáts and Laszlo Szilagyi	Markov Clustering Based Feature Selection for Brain Tumor Segmentation from Multi-Spectral MRI Records
63	Tamás Ferenci, Levente Kovács and Mátyás Szigeti	Using non-stationary extreme value analysis to characterize blood glucose curves
60	Attila Érchegeyi and Ervin Racz	Considering needs of the temperature dependence of a thermal conductivity coefficient at simulating thermal conduction tasks
81	Suryakant Tyagi and Sándor Szénási	Emotion Extraction from Speech using Deep Learning

13:30 – 14:45 [T4P] e-poster Special Session on Recent Generational Aspects of Digitalization

Session Chairs: **Mónika Garai-Fodor and Ágnes Csiszárik-Kocsir**

89	Mónika Garai-Fodor and Klaudia Csercsa	Perceptions of the digital generation and the millennials on online education during the pandemic
90	Mónika Garai-Fodor, János Varga and Ágnes Csiszárik-Kocsir	Generation-specific perceptions of financial literacy and digital solutions
91	Ágnes Csiszárik-Kocsir, Mónika Garai-Fodor and János Varga	Generation-specific analysis of the pandemic's impact on financial culture
92	Oszkár Dobos, István Márk Tóth, Ágnes Csiszárik-Kocsir, Mónika Garai-Fodor and László Kremmer	How Generation Z managers think about the agility in a world of digitalization

18:30 Gala Dinner**Conference Hall**

March 4, Friday only online presentations via Zoom

Zoom link: <https://us06web.zoom.us/j/85187981176> (CEST)

8:00 – 9:40 [F1] Session on Artificial Intelligence

Session Chair: **Adrian Groza**

22	Máté Hireš, Matej Gazda, Lukáš Vavrek and Peter Drotár	Voice-Specific Augmentations for Parkinson's Disease Detection Using Deep Convolutional Neural Network
25	Patricia Mateiu, Adrian Groza and Cristina Nica	Learning ontologies with relational concept analysis
54	Kaoru Yamamoto and Takayuki Kawahara	Implemented Parallel Annealing in Scalable Fully Coupled Annealing Processing System
27	Maroš Hliboký, Marek Bundzel and Stanislav Husár	Detecting Ancient Mayan Construction Activity by U-Net
32	Sergiu Redeca and Adrian Groza	Logic-based machine comprehension for chatbots

9:50 – 11:30 [F2] Session on Informatics

Session Chair: **Oliver Lohaj**

4	Andrea Tick and Alexandra Ágnes Mészáros	Hungarian Organizations' Attitude toward the Protection against Industrial Espionage
16	Oliver Lohaj, Zuzana Pella and Jan Paralič	Data analytics methods for analyzing the impact of factors on early detection of cardiovascular risk
21	Alexander Brecko, Filip Burda, Peter Papcun and Erik Kajati	Applicability of OPC UA and REST in Edge Computing
33	Marco Pacurariu and Marius Marcu	Impact of the persistence layer on performance and architecture for a Java web application
50	Viera Anderková, Tomáš Adam and František Babič	Data-driven Student Performance Prediction

11:40 – 12:00 [F3] Special Session on Recent Generational Aspects of Digitalization

Session Chairs: **Mónika Garai-Fodor and Ágnes Csiszárík-Kocsir**

93	Zoltán Zakota, József Fogarasi	The Effects of the Covid-19 Pandemic on High School Education
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13:00 – 14:20 [F4] Session on Biomedical EngineeringSession Chair: Clara Ionescu

23	Stanislav Husár, Norbert Ferenčík, Marek Bundzel and Slavomír Kardoš	Design and evaluation of the electronic sensing system of Rehapiano
55	Mihaela Ghita, Maria Ghita, Dana Copot, Isabela Birs, Robin De Keyser and Clara Ionescu	Time-frequency varying tissue impedance properties from alternated noxious stimulation protocols
80	Mohammed Faeik Ruzaij Al-Okby, Sebastian Neubert, Thomas Roddelkopf, Heidi Fleischer and Kerstin Thurow	Evaluating of IAQ-index and TVOC As Measurements Parameters for IoT-based Hazardous Gases Detection and Alarming Systems
57	Maria Ghita, Mihaela Ghita, Dana Copot, Isabela Roxana Birs, Cristina Muresan and Clara Mihaela Ionescu	Optimizing radiotherapy with chemotherapy using PKPD modeling for lung cancer

14:30 – 16:15 [F5] Special Session on Recent PhD Research Achievements in Applied InformaticsSession Chair: László Horváth

7	Awudu Atinga and József Tar	Preliminary Ideas on the Estimation of Parameter and Model Component Significance in Adaptive Control of Nonlinear Systems
24	Bence Tureczki and Katalin Szenes	AI Assistant in a Smart Cloud
41	Farida Asadova, Gábor Kertész, Róbert Lovas and Sándor Szénási	Fault detection in GPU-enabled Cloud Systems –An Overview
20	Bence Varga, Richárd Horváth and József Tar	Adaptive Control of a Nonlinear System Avoiding State Estimation
59	Artúr István Károly and Péter Galambos	Automated Dataset Generation with Blender for Deep Learning-based Object Segmentation
74	Ferenc Tolner, Balázs Barta, Levente Kovács and György Eigner	Application of MFV-robustified Correlation Coefficient for the Investigation of the Strength of Beta-convergence of EU NUTS regions
83	Aguir Mohamed Amine and Annamária R. Várkonyi-Kóczy	Efficient Eye-tracking framework on Mobile devices

16:30 – 17:30 [F6] Special Session on Cybersecurity, 5G CybersecuritySession Chair: Miklós Kozlovsky

58	Gergely Kún, Péter János Varga, Tibor Wühl, Dóra Wühl, Sándor Gyányi, László Náday and Róbert Kovács	“Opened” or “Closed” RAN in 5G
65	Anikó Szarvák and Valéria Póser	Review the progress of threat and risk assessment on 5G network
68	Péter János Varga, László Náday, András Bálint Tóth, Eszter Kail, Wühl Tibor, Sándor Gyányi, Gergely Kún, Robert Kovacs, Anna Bánáti and Miklos Kozlovsky	5G RAN research in Obuda University

March 5, Saturday

only online presentations via Zoom

Zoom link: <https://us06web.zoom.us/j/85187981176> (CEST)

8:00 – 9:40 [S1] Session on Artificial Intelligence

Session Chair: **Norbert Ádám**

19	David Valko, Norbert Ádám and Martin Havrilla	Using Neural Networks for ECG Classification
52	Marina Pozhidaeva and Ilya Makarov	Information Extraction for Modeling Screenplay Evolution of Star Wars Fiction
62	Zoltán Biczó, Imre Felde and Sándor Szénási	Safe Overfitting of Boosted Tree Algorithm in Heat Transfer Modeling
82	Saulo Cardoso Barreto and Péter Tamás Szemes	Training and Analysis of Hyperparameters in Neural Networks for Computer Vision Applications: A Didactic Approach
53	Igor Vasilyev and Ilya Makarov	Optimal classification using latent space generated from Autoencoders

9:50 – 11:30 [S2] Session on Man-Machine Systems, Engineering Education (e-learning) and Systems Engineering

Session Chair: **Stanislav Ondas**

8	Kae Doki, Yuki Funabara, Shinji Doki and Yoshikazu Yano	AR Image Presentation based on Gaze Information for Operator support in teleoperation
35	Stanislav Ondas, Matus Pleva and Jozef Juhar	Overlapping speech analysis in Slovak conversational interactions
64	Judit Módné Takács and Monika Pogatsnik	Stress-management skills among Dutch and Hungarian students
79	Tamas Kersanszki	Are we prepared to learn digital in the digital economy and society?
42	Balázs Németh	Route selection method with ethical considerations for automated vehicles under critical situations

11:40 – 12:40 [S3] Session on Intelligent Manufacturing Systems and CAD/CAM/CAE Systems

Session Chair: **Mirco Soderi**

39	Mirco Soderi, Vignesh Kamath, Jeff Morgan and John G. Breslin	Advanced Analytics as a Service in Smart Factories
95	László Horváth	High Abstraction in Engineering Communication
6	Vaclav Skala	Geometric Transformations and Tensor Product

13:30 – 14:50 [S4] Session on Informatics

Session Chair: **Jana Fortes**

30	Kristián Kelij and Jana Fortes	Matlab software designed for 3D localization by a multistatic UWB radar
38	Martin Sarnovsky	Concept Drift Visualization Using Feature Importance on the Streaming Data
44	Kristian Micko, Frantisek Babic, Peter Papcun and Iveta Zolotova	Temporary Parking via Computer Vision and Deep Learning
47	Ladislav Pomšár, Alexander Brecko and Iveta Zolotova	Brief overview of Edge AI accelerators for energy-constrained edge

15:00 – 16:20 [S5] Session on Intelligent Robotics and Computational Intelligence

Session Chair: **Dusan Krokavec**

10	Gergo Ignezi and Ernő Horváth	A Clothoid-based Local Trajectory Planner with Extended Kalman Filter
26	Igor Astrov, Andres Udal, Heiko Pikner and Ehsan Malayjerdi	A Model-Based LQR Control of an Obstacle Avoidance Maneuver of a Self-Driving Car
45	Dusan Krokavec and Anna Filasova	Quadratical Stabilization of Uncertain Discrete-Time Takagi-Sugeno Fuzzy Systems
87	Philipp Rosenberger and Andrea Tick	A Generic Approach for Multivariate Process Optimization

Thank you for your contribution and participation!

See you next year at SAMI 2023!