

SAMI 2019 technical program

January 24, Thursday

10:30 – 10:45 Opening Ceremony

10:45 – 11:30 Plenary Session I
Session chair: Imre J. Rudas

81	Zoltán Rajnai	Cybercoordination on Government Level in Hungary
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11:30 – 11:45 Coffee break

11:45 – 12:30 Plenary Session II
Session chair: Levente Kovács

76	Clara Ionescu	Computer-assisted Drug Delivery for General Anesthesia: Completing the Puzzle
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12:30 – 14:00 Lunch

14:00 – 16:00 [T1] Session on Informatics
Session chair: Ján Vascák

48	Jakub Nosek , Stanislav Pleninger and Vladimír Socha	Analysis of Real Airborne Collision Avoidance System Surveillance Parameters
54	Martin Kenyeres, Jozef Kenyeres and Ivana Budinska	Distributed Linear Summing in Wireless Sensor Networks
68	Rita Fleiner, Andras Ferkai and Peter Biro	College admission problem for university dual education
55	Martin Kenyeres, Jozef Kenyeres and Ivana Budinska	Vulnerability of Average Consensus Algorithm: Impact of Stochastic Communication Breakdowns on Generalized Metropolis-Hastings Weight Design
5	Rana Mohamed Eisa, Merna Labib and Amr Elmougy	SOS: Save Our Social Network Accounts
16	Miklos Taliga	Image Quality in Safety Critical System

16:00 – 16:20 Coffee break

16:20 – 17:40 [T2] Session on Intelligent Manufacturing Systems and Intelligent Mechatronics

Session chair: Clara M. Ionescu

38	Razvan Claudiu Petrenci, Mihaela Frigura-Iliasa, Lia Dolga and Hannelore Filipescu	Digital Based Solutions for the Refurbishment of Existing Hydro-generators
32	Mihaela Frigura-Iliasa , Mirela Iorga , Lia Dolga and Hannelore Filipescu	Computer Based Algorithm for Optimizing Design and Construction of Large Industrial Power System Industrial Objectives
30	Adrian Flavius Olariu , Mihaela Frigura-Iliasa , Lia Dolga and Hannelore Elfride Filipescu	A New Technical Solution for an Industrial 3D Safety Recognition System
15	Károly Beneda and Khaoula Derbel	Design of Two Degree of Freedom Turbofan-Power-Ratio Control System for Micro Turbojet Engine

16:20 – 17:40 Poster session

Session chair: Ladislav Főző

2	Zarrouk Rim , Imed Benour and Abderazak Jemai	New Particle Swarm Optimisation variant for the Flexible Job Shop Scheduling Problem
9	Jan Kubiček , Marek Penhaker , David Oczka, Marek Buzga, Martin Augustynek and Martin Cerny	A Proposal of Optimal Wavelet Filter Design for EGG Signal Decomposition based on Modified ABC Evolutionary Optimization
28	Milan Oravec , Andrii Kulikov, Daniel Jurc, Olha Kulikova, Jakub Vahovsky and Milan Abraham	Analysis of the effect of non-ionizing radiation in the area of magnetism under the limit of 1Hz generated by means of transport from the perspective of neurobehavioral effects
31	Norbert Ferencik , Miroslav Jascur, Marek Bundzel and Ladislav Pomsar	Using surface electromyography for gesture detection
33	Milan Oravec , Hana Pačaiová, Gabriela Ižaríková and Michal Hovanec	Magnetic Field Image – Source of Information for Action Causality Description
34	Jaroslav Vondrak , Jan Grepl, Marek Penhaker , Milada Hlavackova and Jan Kubicek	Design and FEM Analysis of Laparoscopic Tool for Electrocoagulation Surgery

18:00 Welcome reception

January 25, Friday

8:45 – 10:30 [F1] Session on Man-Machine Systems and Intelligent Robotics

Session chair: Tamás Haidegger

47	Artem Sokolov and Andrey Savchenko	Voice command recognition in intelligent systems using deep neural networks
65	Árpád Takács, Dániel András Drexler, Péter Galambos, Imre J. Rudas and Tamás Haidegger	The Transition of L2–L3 Autonomy through Euro NCAP Highway Assist Scenarios
62	Ján Vaščák	Navigation Based on Fuzzy Cognitive Maps for Needs of Ubiquitous Robotics
3	Dominika Čupková, Filip Hendrichovský, Peter Papcun and Iveta Zolotová	Cloud-enabled assisted living: The role of robot receptionist in the home environment
44	Noriaki Takahashi, Natsuhiko Sakiyama, Takuji Yamamoto, Sakuya Kishi, Yoichiro Hashizume, Takashi Nakajima, Takahiro Yamamoto, Mikio Hasegawa, Takumi Ito and Takayuki Kawahara	An Evaluation of Wooden House Health Monitoring System using PVDF Piezoelectric Sensor with 3-layer Neural Network and Inverted Binary-Data Augmentation
4	Roland Bartok and Jozsef Vasarhelyi	Examining Cache Handling of FIVE Method on Multicore Systems
72	Ádám Domina and Viktor Tihanyi	Comparison of path following controllers for autonomous vehicles

8:45 – 10:30 Poster session

Session chair: Vladimír Gaspar

35	Jan Chrobok, Martin Schmidt , Marek Penhaker, Jan Kubíček, Milada Hlavackova and Petr Vavra	Design and Stress Analysis of a System for Cleaning Needle Electrodes for Radiofrequency Ablation during Surgeries
37	Jan Grepl, Petr Vavra, Petr Ihnat, Milada Hlavackova, Marek Penhaker , Alice Křestánová and Jan Kubicek	Design and Testing of Radiofrequency Instrument Ronja ICS
40	Miroslav Jascur, Norbert Ferenčík, Marek Bundzel and Iveta Zolotová	Using LSTM for Detection of Wrist Related Disorders
45	Vladimír Gašpar	Teaching development for SMART devices with focus on future key skills
46	Norbert Ádám, Anton Balaz, Gergely Tóbiás, Ján Hurtuk, Branislav Mados and Michal Hulič	Proto-cluster: A Multi-device Approach to Parallel Computing
49	Lenka Hanakova, Vladimir Socha, Lubos Socha, Andrej Lalís, Jakub Kraus and Tomas Malich	The influence of fatigue on psychophysiological indicators during 24hours testing of pilots

10:30 – 10:45 Coffee break



10:45 – 12:30 [F2] Special Session on Recent PhD Research Achievements in Applied Informatics I

Session chair: László Horváth

14	Hamza Khan and József Tar	Fixed Point Iteration-based Problem Solution without the Calculation of the Jacobian
18	Balázs Hörömpöli, Bálint Kis and Ervin Rác Dr.	Analyzation of electric operation of a dye sensitized solar cell at different incoming light spectra
21	Albert Nagy and Jozsef Tick	Tasks of operative planning for transport management systems
39	Hemza Redjimi, József Tar and János F. Bitó	On Function Extrapolation by Fixed Point Iteration for Time-Delayed Systems
52	György Fekete, Miklós Taliga and Henriette Steiner	Gait features and where to find them
57	Pál Tamás Tolnai and Ervin Rác Dr.	Preliminary spectral design of a LED- and light bulb-based sun spectrum simulator
59	Endre Börcsök, Ágnes Gerse and János Fülöp	Optimizing the Use of Renewable Energy Sources in the Energy Mix of Hungary

12:30 – 14:00 Lunch**14:00 – 15:45 [F3] Special Session on Recent PhD Research Achievements in Applied Informatics II**

Session chair: László Horváth

61	Gábor Kertész, Sándor Szénási and Zoltán Vámosy	A novel method for Convolutional Neural Architecture Generation with memory limitation
67	Matyas Szigeti, Levente Kovacs and Tamas Ferenci	Stability of relative and absolute metrics: empirical evidence from pulmonology
69	Ágoston Romhányi and Sándor Szénási	OpenGL-based modular lightweight 3D framework with physics capabilities
70	Bence Tamás Tóth and Sándor Szénási	The Simulation of Tree Growth in the Light of Environmental Effects
71	Bence Dankó and Gábor Kertész	Recognition of the Hungarian fingerspelling alphabet using Recurrent Neural Network
74	Zoltán Garaguly, Levente Kovács and Miklós Kozlovsky	Assessment of digital holographic image quality parameters
78	Abdallah Benhamida, Akram Zouaoui, Gábor SzÓcska, Krisztián KarÓczkai, Ghaith Slimani and Miklos Kozlovsky	Problems in archiving long-term continuous ECG data – a review

14:00 – 15:45 Poster session

Session chair: Branislav Mados

50	Branislav Mados , Anton Balaz, Norbert Ádám, Ján Hurtuk and Zuzana Bilanová	Algorithm Design for User Experience Enhancement of Volume Dataset Reading from Storage Using 3D Binary Image as the Metadata
51	Adnan Shujah and Hasan Habib	Design and Experimental Testing of Semi-Autonomous Wall Climbing Robot Usign Vacuum Suction Adhesion
64	Alžbeta Kanáliková and Emília Bubeníková	Parking system with image processing
66	Miroslav Spodniak , Karol Semrád , Ladislav Főző and Jozef Pavlinský	FEM analysis of natural frequencies of jet engine iSTC-21v turbine blade

15:45 – 16:00 Coffee break**16:00 – 17:40 [F4] Session on Artificial Intelligence**

Session chair: Miklós Kozlovsky

58	András Rövid and Viktor Remeli	Towards Raw Sensor Fusion in 3D Object Detection
25	Levente Alekszejenkó and Tadeusz Dobrowiecki	Intelligent Vehicles in Urban Traffic – Communication Based Cooperation
11	Szidónia Lefkovits and László Lefkovits	Combining Subspace Methods and CNN Segmentation for Iris Identification
10	Halit Eriş and Ulus Çevik	Implementation of Target Tracking Methods on Images Taken from Unmanned Aerial Vehicles
56	Mariia Martynova and Ondrej Kaas	A Novel Methods Based on Clustering Algorithms as The Neural Network Preprocessing

18:00 Banquet

January 26, Saturday

8:30 – 10:30 [S1] Session on Systems Engineering

Session chair: Bertalan Beszédes

77	Mihaela Ghita, Maria Ghita, Dana Copot and Clara Ionescu	Methodologically study for detection of thermal induced pain via skin impedance
80	László Horváth	Laboratory in Cloud for Model Systems of System Based Engineering Structures
73	Krisztián Juhász, Valéria Póser, Miklós Kozlovsky and Anna Bánáti	WiFi vulnerability caused by SSID forgery in the IEEE 802.11 protocol
6	Nawar Al Hemeary and Gábor Szederkényi	Fuel tank temperature control of a time-varying CubeSat model
75	István Orosz, Attila Selmei and Tamás Orosz	Software as a Service operation model in cloud based ERP systems
79	Bertalan Beszédes	Reliable Presence and Intrusion Detection with Collaborative Sensor Modules in Electronic Property Protection Systems

10:30 – 10:45 Coffee break

10:45 – 12:30 [S2] Session on Computational Intelligence

Session chair: Martin Kenyeres

12	Emil Lazarescu, Emil Cazacu, Flaviu Mihai Frigura-Iliasa and Mihaela Frigura-Iliasa	Computational Model for the Dimensioning of Neutral Conductor in Low Voltage Power Networks Operating in Various Regimes
26	Lóránt Szabó, László Lindenmaier and Viktor Tihanyi	Smartphone Based HD Map Building for Autonomous Vehicle
13	Nicolae Iacobici-Luca , Emil Cazacu , Flaviu Mihai Frigura-Iliasa and Mihaela Frigura-Iliasa	Computer Based Analysis for the Parameters of a Distribution Transformer in a Non-Sinusoidal Regime
42	Bence Dávid, Gergő Lánicz and Gergely Hunyady	Highway Situation Analysis with Scenario Classification and Neural Network based Risk Estimation for Autonomous Vehicles
20	Alexandra Popescu , Flaviu Mihai Frigura-Iliasa , Mirela Iorga and Mihaela Frigura-Iliasa	Computer Based Model for an Off-Grid Photovoltaic System with no DC – DC Adapter
43	Bence Dávid, Gergő Lánicz and Gergely Hunyady	Real-time Behaviour Planning Concept for Autonomous Vehicles
53	Agus Kurniawan and Marcel Kyas	A Privacy-Preserving Sensor Aggregation Model Based Deep Learning in Large Scale Internet of Things Applications

12:30 Lunch and Farewell