

May 17, Thursday

8:30 Registration Room A 107

9:30 – 10:00 Opening Ceremony Room A 101

Viorel-Aurel Serban, Liviu Ioan Cadariu-Brailoiu, Florin Dragan, Levente Kovács, Nicolae Robu, Horia Ciocârlie, Radu-Emil Precup

10:00 – 10:45 Plenary Session I Room A101

Session chair: *Horia Ciocârlie*

119	Adrian Stoica	Robots on the Moon, and their Role in a Future Lunar Economy
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10:45 – 11:00 Coffee break

11:00 – 11:45 Plenary Session II Room A101

Session chair: *Radu-Emil Precup*

120	Hamido Fujita	Challenges on Data Analytics for Risk Predictions based on Deep and Ensemble Learning
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11:45 – 13:30 Lunch break

13:30 – 14:50 Parallel sessions

13:30 – 14:50 [T1a] Session on Intelligent Control**Room A 115**Session chairs: *Dan Ionescu and Sándor Szénási*

15	Dadiana-Valeria Caiman and Toma-Leonida Dragomir	Non Intrusive Load Monitoring: Analytic Expressions as Load Signature
28	David-Tiberiu Gruescu	Access to justice for the protection of pensioners' rights
62	Huba Somogyi, Daniel Pup, Péter Kőrös, András Mihály and Alexandros Soumelidis Dr.	Research of required vehicle system parameters and sensor system for autonomous vehicle control
19	David-Tiberiu Gruescu and Laura-Mariana Cismaş	SYSTEMIC ANALYSIS OF CREDIT CONTRACTS FROM THE PERSPECTIVE OF ABUSIVE CLAUSES

13:30 – 14:50 [T1b] Session on Intelligent Robotics**Room A 109**Session chairs: *Milan Tuba and Vlad Muresan*

90	András Kondákor, Zsombor Töröcsvári, Ákos Nagy and István Vajk	A Line Tracking Algorithm Based on Image Processing
30	Adriana-Maria Berdich and Gheorghe-Daniel Andreescu	Master-Slave Tracking System for Mobile Robots
13	Daniel Stojsics, Zsolt Domozi and Andras Molnar	LARGE-SCALE POINT CLOUD BASED VOLUME ANALYSIS ACCELERATION BASED ON UAV IMAGES
87	Gábor Péter and Bálint Kiss	Compact pose-graph SLAM framework based on algebra with embedded uncertainty

13:30 – 14:30 [T1c] Session on Intelligent Mechatronics**Room A 110**Session chairs: *Ioan Zaharie and Éva Hajnal*

11	Elena-Lorena Hedrea, Radu-Emil Precup, Claudia-Adina Bojan-Dragos and Ciprian Hedrea	Tensor Product-Based Model Transformation Technique Applied to Modeling Vertical Three Tank Systems
32	Zsofia Bodo and Bela Lantos	Error Caused by Kinematic Control in the Dynamic Behavior of Unmanned Ground Vehicles
5	Ioan-Daniel Borlea, Radu-Emil Precup, Florin Dragan and Alexandra-Bianca Borlea	Parallel Implementation of K-Means Algorithm Using MapReduce Approach

13:30 – 14:50 [T1P] Poster sessionSession chairs: *Ján Perháč and David-Tiberiu Gruescu*

65	Ján Perháč, Daniel Mihalyi and Lukáš Reřovský	Distribution of Linux Log Files Described by Predicate Linear Logic Formula
92	Liberios Vokorokos, Matúš Uchnár and Emília Pietriková	The Raspberry Pi in an Education Process

95	Branislav Mados, Anton Balaz, Norbert Ádám and Ján Hurtuk	Information Hiding into OBJ Format Files Using Vector Steganography Techniques
60	Iosif Szeidert, Ioan Filip, Octavian Prostean and Cristian Vasar	Above Modelling and Adaptive Control of a Double Winded Induction Generator

15:00 – 16:20 DHC I

Large Senate Room

16:30 – 17:50 DHC II

Large Senate Room

18:30 Banquet

May 18, Friday

9:00 – 9:40 Plenary Session III

Room A 109

Session chair: *Mihai V. Micea*

118	Attila Bilgic	The Disruptive Power of Machine Learning and IoT in Automation Industry
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9:40 – 10:20 Invited Talk

Room A 109

Session chair: *Mircea-Bogdan Radac*

121	Marcel-Mihai Sămânță	Industry X.0 – Digital Disruption and Smart Manufacturing IT&OT Transformation Journey
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10:20 – 10:40 Coffee break

10:40 – 12:20 Parallel sessions

10:40 – 12:20 [F1a] Session on Computational Intelligence I**Room A 115**Session chairs: *Gyula Hermann and Joao Papa*

24	Doru Todinca , Ioana Sora, Daniel-Eugen Butoianu and Radu-Emil Precup	A novel method to compute the membership value of the states of fuzzy automata
58	Stelian Nicola, Oana Sorina Lupse and Lacramioara Stoicu-Tivadar	Novel Gesture Interaction Using Leap Motion in 3D Applications
104	Dan Ionescu, Cristian Gadea and Bogdan Ionescu	Modeling and Simulation of an Operational Transformation Algorithm using Finite State Machines
55	Dinko Osmankovic and Aleksandar Acimovic	K Modal Logic Approach to Maze Solving
25	János Hollósi, Ernő Horváth and Claudiu Radu Pozna	Two-stage Racetrack Segmentation Method using Color Feature Filtering and Superpixel-based Convolutional Neural Network

10:40 – 12:20 [F1b] Session on Informatics I**Room A 109**Session chairs: *Iosif Szeidert and József Borbély*

22	Oana-Sorina Lupse , Ciprian-Bogdan Chirila and Horia Ciocarlie	Programming Concepts in the Silver Code Guide for Elders
83	Alin-Adrian Anton	Romanian biometric word list for public key fingerprint validation
96	Noemi-Clara Rohatinovici and Valentina Emilia Balas	On Reliability of 3D Hammock Networks
23	Felicia-Mirabela Costea , Ciprian-Bogdan Chirila and Vladimir Cretu	Towards Auto-Generative Learning Objects for Industrial IT Services
54	Ieva Ancveire	Fit Gap Analysis Methods for ERP Systems

10:40 – 11:20 [F1c] Session on Safety and Security**Room A 110**Session chair: *Zoltán Rajnai*

37	György Györök and Bertalan Beszédes	Adaptive optocoupler degradation compensation in isolated feedback loops
35	Iulian Aciobanitei, Iulian Buhus and Mihai Lica Pura	Lightweight version of SQL authentication protocol based on cryptography in the cloud

10:40 – 12:20 [F1P] Poster SessionSession chairs: *Adriana Albu and Alexandru Gavruta*

9	Adrian Mirea and Adriana Albu	Acquisition of Physical Data in an Automated System for Monitoring Medication Stocks
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17	Luis Claudio Sugi Afonso, Leandro Passos Junior and Joao Paulo Papa	Enhancing Brain Storm Optimization Through Optimum-Path Forest
39	Mohamed Lafif Tej and Stefan Holban	Comparative Study of Clustering Distance Measures to Determine Neural Network Architecture
72	Luiz Fernando Cieslak, Kelton Augusto Pontara Da Costa and João Paulo Papa	Seam Carving Detection Using Convolutional Neural Networks
125	Kinan Morani, György Eigner, Tamás Ferenci, Levente Kovács and Seref Naci Engin	Prediction of the Survival of Patients with Cardiac Failure by using Soft Computing Techniques

12:20 – 14:00 Lunch break

14:00 – 16:00 [F2a] Special Session PhD Student Research in Applied Informatics and Numerical Mathematics

Room A 115

Session chair: *László Horváth*

105	Ákos Odry and Róbert Fullér	Comparison of Optimized PID and Fuzzy Control Strategies on a Mobile Pendulum Robot
113	Endre Börcsök, Ágnes Gerse and János Fülöp	Applying Multiobjective Optimization for the Heat Supply in the Residential Sector in Budapest
116	István Lovas and András Molnár	Orthophoto creation based on low resolution thermal aerial images
97	Nicolae Dicu, Gheorghe-Daniel Andreescu and Eugen Horatiu Gurban	Automotive Dead-Reckoning Navigation System Based on Vehicle Speed and Yaw Rate
110	Yatish Bathla	Era of Behavioral Modeling from a System to a Cyber-Physical System: State of the Art Survey
130	Miklós Mezei and Imre Felde	Mass Event Monitoring by Using Mobile Cell Information: A Case Study for Budapest at the Celebration of the State Foundation Day
115	Neerendra Kumar and Zoltán Vámosy	Laser Scan Matching in Robot Navigation
122	Gergő Pintér, László Nádai, Gábor Bognár and Imre Felde	Evaluation of Mobile Phone Signals in Urban Environment during a Large Social Event

14:00 – 15:40 [F2b] Special Session on 'Systems, Man, and Cybernetics'

Room A 109

Session chair: *Kornélia Lazányi*

129	Kornélia Lazányi	Are we ready for self-driving cars – a case of principal-agent theory
128	Zsolt Illési, Áron Halász and Péter Varga	Wireless Networks and Critical Information Infrastructure
123	Dávid János Fehér, Monika Bartok and Lajos Fehér	The effects of computer games on teenagers
126	Péter Varga, András Kálec and Zsolt Illési	Thermal Test of Mobile Devices in Normal Use
114	Dávid János Fehér and Dai Nguyen Huu Phuoc	Security concerns towards Security Operations centers

14:00 – 15:20 [F2b] Session on Systems Engineering I**Room A 110**Session chairs: *Mihaela-Hanako Matcovschi and Ioana Sora*

99	Cosmin Copot, Cristina Muresan, Thoa Mac Thi and Clara Ionescu	An application to robot manipulator joint control by using constrained PID based PSO
21	Ana-Maria Dan and Toma-Leonida Dragomir	State Feedback Control Models for the Cardiovascular System in Constant Exercise Scenario
100	Ricardo Cajo Diaz , Cosmin Copot , Clara Ionescu , Robin De Keyser and Douglas Plaza Guingla	Fractional Order PD Path-Following Control of an AR.Drone Quadrotor
50	Octavian Pastravanu and Mihaela-Hanako Matcovschi	Comments and Expansion of a Result on Common Diagonal Quadratic Lyapunov Functions for Sets of Positive LTI Systems

14:00 – 16:00 [F2P] Poster SessionSession chairs: *Krisztina Némethy and Monika Trojanová*

42	Balduino Estison Mugilila Camachi and Dan Popescu	Cyber Security of Smart Grid Infrastructure
68	Dan Georgescu and Loredana Stanciu	Designing and Implementing a Method to Manipulate Signals in Automated Testing Using CANoe
69	Cristian Vasar, Octavian Prostean, Ioan Filip and Iosif Szeidert	Wind Energy Conversion System – a Laboratory Setup
8	Alexander Hošovský, Monika Trojanová, Ján Piteľ and Jozef Svetlík	Identification of DMSP-5 Fluidic Muscle Dynamics Using Hammerstein Model

16:00 – 16:20 Coffee break**16:20 – 18:00 Parallel sessions****16:20 – 18:00 [F3a] Session on Computational Intelligence II****Room A 115**Session chairs: *Claudia-Adina Bojan-Dragos and Jozef Svetlík*

10	Leandro Aparecido Passos , Clayton Reginaldo Pereira , Edmar Rezende , Tiago José Carvalho , Silke Anna Theresa Weber , Christian Hook and João Paulo Papa	Parkinson Disease Identification using Residual Networks and Optimum-Path Forest
29	Marina Adriana Mercioni	The recognition of the architectural style using Data Mining techniques
33	Gabriel Baban, Alexandru Iovanovici , Cristian Cosariu and Lucian Prodan	Network Betweenness shows road congestion spots: experimental assessment by means of simulation
64	Alexandru Gavruta, Marius Marcu and Razvan Bogdan	Software Solution For Monitoring And Analyzing Driver Behavior

93	Eva Tuba, Ivana Strumberger, Ira Tuba, Nebojsa Bacanin and Milan Tuba	Water Cycle Algorithm for Solving Continuous p-Median Problem
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16:20 – 17:40 [F3b] Session on Informatics II

Room A 109

Session chairs: *Clara M. Ionescu and Andrey Savchenko*

26	Grigoreta Sofia Cojocar and Adriana-Mihaela Guran	A Comparative Analysis of Monitoring Concerns Implementation in Object Oriented Systems
52	Sebastian-Aurelian Stefaniga and Mihail Gaiaru	Assessment of stereo camera calibration technique
117	László Horváth	Content Driven Engineering Model System for Cyber Physical Systems
59	Anthony Chapman, Wei Pang and George Coghill	CLEMI - An Imputation Evaluation Framework

16:20 – 17:40 [F3c] Session on Systems Engineering II

Room A 110

Session chairs: *Doru Todinca and Loredana Stanciu*

80	Niculescu – Faida Oana, Sgarciu Valentin and Niculescu – Faida Adrian	Software system for monitoring data traffic from a Smart Grid network
18	Ionel Romeo Petrut and Marius Ottesteanu	The IoT connectivity challenges
86	Vlad Muresan, Mihail Abrudean, Mihaela-Ligia Unguresan and Tiberiu Colosi	Control of the Isotopic Exchange for 18O Isotope Production
38	Marian Ionascu, Iasmina Gruicin and Marius Marcu	Laboratory Evaluation and Calibration of Low-Cost Sensors for Air Quality Measurement

16:20 – 18:00 [F3P] Poster Session

Session chairs: *Franciska Hegyesi and Alexandra-Iulia Szedlak-Stinean*

98	Sándor Szénási , Imre Felde, Gábor Nagy and Augusto Deus	Estimating the Heat Transfer Coefficient using Universal Function Approximator Neural Network
66	Gaye Ediboğlu Bartos , Éva Hajnal and Yaşar Hoşcan	Comparison of Feature Extraction Techniques for Handwriting Recognition
131	Franciska Hegyesi , Gyula Kártyás and József Gáti	The Experiences of Online Education, MOOC Courses, at a University with Technical Training
111	József Klespitz and Levente Kovacs	Multivariable control structures of hemodialysis machines for patient fluid balance maintenance

18:30 Coctail

May 19, Saturday

9:00 – 10:40 Parallel sessions

9:00 – 10:20 [S1a] Session on Computational Intelligence III

Room A 115

Session chairs: *Vasile Stoicu Tivadar and Péter Varga*

12	Leandro Aparecido Passos Junior , Douglas R. Rodrigues and João Paulo Papa	Fine Tuning Deep Boltzmann Machines Through Meta-Heuristic Approaches
46	Adrian-Aliosa Erofei, Cristian-Filip Druta and Catalin Căleanu	Embedded Solutions for Deep Neural Networks Implementation
44	Emilian Erman Mahmut and Vasile Stoicu Tivadar	Current Challenges in the Computer-Based Assessment of Speech Sound Disorders
47	Sebastian Mihai Ardelean and Mihai Udrescu	QC pp >: A Behavioral Quantum Computing Simulation Library

9:00 – 10:40 [S1b] Session on Informatics III

Room A 109

Session chairs: *Antonio Luputi and Ionel Romeo Petrut*

61	Renata-Graziela Boar and Horia Ciocarlie	Complex Networks with Applicability to the Structure and Dynamics of Stock Market Evolution
112	Eszter Kail, Anna Bánáti, László Erdődi and Miklos Kozlovsky	Security survey of Dedicated IoT networks in the unlicensed ISM bands
94	Ciprian Pungila, Darius Galis	Optimizing Pattern-Matching for Memory-Efficient Heterogeneous DNA Processing in Bioinformatics
48	Ioana Sora and Cosmin Cernazanu	Investigating Attributes that Characterize Important Classes in Object Oriented Systems
101	Andrei-Mihai Nicolae, Adrian Korodi and Ioan Silea	Modular and model-driven configurable approach for a centralized home-security system

9:00 – 10:40 [S1P] Poster Session

Session chairs: *Rita Fleiner and Andreea-Paula Robu*

88	Andreea - Paula Robu , Nicolae Robu and Adrian Neagu	New software tools for hydrogel-based bioprinting
106	Rita Fleiner	Linking of Open Government Data
107	Nidal Chalhoub and Gabriella Simon-Nagy	Indoor Navigation based on Linked Data at Honvéd Hospital, Budapest
124	Gábor Kertész, Sándor Szénási and Zoltán Vámosy	Vehicle Image Matching using Siamese Neural Networks with Multi-Directional Image Projections

10:40 – 11:00 Coffee break

11:00 – 12:40 Parallel sessions**11:00 – 12:40 [S2a] Session on Computational Intelligence IV****Room A 115**Session chairs: *Marian-Emanuel Ionascu and Alin-Adrian Anton*

56	Lucian Chis and Marius Marcu	Software Tool for Audio Signal Analysis and Automatic Music Transcription
77	Iasmına Gruicin, Marian-Emanuel Ionascu and Mircea Popa	A Solution for Air Quality Monitoring and Forecasting
49	Eugenia Capota, Cristina Stangaciu, Mihai Micea and Vladimir Cretu	P_FENP: A Multiprocessor Real-Time Scheduling Algorithm
70	Andrey Savchenko	Granular Computing and Sequential Analysis of Deep Embeddings in Fast Still-to-Video Face Recognition
53	Jozsef Bor	About Some Zero-Sum Problems

11:00 – 12:40 [S2b] Session on Informatics IV**Room A 109**Session chairs: *Radmila Gerov and Nicolae Dicu*

82	Razvan Bolintis , Razvan Bogdan, Crisan-Vida Mihaela Marcella and Lăcrămioara Stoicu-Tivadar	PillHelper, an application for treatment administration
1	Silvana Albert, Gabriela Czibula and Mihai Teletin	Analyzing the impact of protein representation on mining structural patterns from prote data
67	Iulian Aciobanitei, Iulian Buhus and Mihai Lica Pura	Using cryptography in the cloud for lightweight authentication protocols based on QR codes
41	Imad Ali Hasson, Anwar Chitheer Jasim and Nicolae Tapus	Privacy of Clients' Locations in Big Data and Cloud Computing
89	Aleksandar Pejić and Piroška Stanić Molcer	Relationship Mining in PISA CBA 2012 Problem Solving Dataset using Association Rules

11:00 – 12:40 [S2P] Poster SessionSession chairs: *György Györök and Elena-Lorena Hedrea*

16	Peter Holcsik , Judith Pálfi and László Pokorádi	Determination of customer number by matrix operations in case of network failure
27	Radmila Gerov and Zoran Jovanović	PID Tuning for Unstable Processes with Time Delay Based on Gain Margin
31	Zoran Jovanović and Radmila Gerov	Performance Analysis of Uncertain Changes in Parameters of an Unstable Time Delay Process Regulated with a PID Controller

40	Jozef Svetlik , Alexander Hošovský, Monika Trojanová, Peter Demeč, Tomáš Stejskal and Miroslav Štofa	Optimizing workspace for homogeneous assemblies of rotational motion modules
74	György Györök	Evidence of Detection of High-Energy Microwave Radiation in Electronic Equipments
75	Ioan Zaharie, Geza-Mihai Erdodi and Marius Dudu	The functioning of a wind system at its maximum power
102	Antonio-Marius-Flavius Lupuți , Corina-Anca Mnerie and Virgil-Florin Duma	Experimental setup for an optical micrometer with a polygonal mirror-based laser scanner
103	Claudia-Adina Bojan-Dragos, Alexandra-Iulia Szedlak-Stinean, Radu-Emil Precup, Lucia Gurgui, Elena-Lorena Hedrea and Ion-Cornel Mituletu	Control Solutions for Vertical Three-Tank Systems
108	Alexandra-Iulia Szedlak-Stinean, Radu-Emil Precup, Claudia-Adina Bojan-Dragos and Ion-Cornel Mituletu	Feedback Control Solutions for an Electromechanical Process with Rigid Body Dynamics