Venue: **Óbuda University, Rooms F07, F08 and F09**

Address: **Bécsi út 96/b, H-1034 Budapest, Hungary**

November 21, Wednesday

| **9:00 – 9:15** | **Opening Ceremony** | **Room F09** |

| **9:15 – 10:00** | **Plenary talk I** | **Room F09** |

Session chair: Tamás Haidegger

63	József Kövecses	Task Level Modelling of Mechanical Systems for Intelligent Robotics

10:00 – 10:30   Coffee break / Presentation of the Farkas Kempelen chess machine

| **10:30 – 11:15** | **Plenary talk II** | **Room F09** |

Session chair: Levente Kovács

64	Miklós Kozlovszky	

11:20 – 12:40   Parallel sessions

| **11:20 – 12:40** | **[W1a] Session on Neural Networks** | **Room F09** |

Session chair: Sándor Szénási

42	**János Hollósi** and Claudiu Radu Pozna	Improve the Accuracy of Neural Networks using Capsule Layers
8	**Mariia Martynova and Ondrej Kaas**	Pre-processing for the RBF-NNs with flexible parameters for multi-dimensional data
29	**Ferenc Hegedüs, Tamás Bécsi, Szilárd Aradi and György Gáldi**	Hybrid Trajectory Planning for Autonomous Vehicles using Neural Networks
48	**Árpád Fehér, Szilárd Aradi and Tamás Bécsi**	Q-learning based Reinforcement Learning Approach for Lane Keeping

| **11:20 – 12:40** | **[W1b] Session on Neural Networks and Genetic Algorithms** | **Room F08** |

Session chair: József K. Tar

34	**József Zoltán Szabó** and Peter Bakucz	Flexible Neural Tree Based Identification of the Total Dead Center from Large Gas Engine Vibration Signals
1	**Bence Dankó and Gábor Kertész**	Recognition of the Hungarian Fingerspelling Alphabet using Convolutional Neural Network based on Depth Data
36	**József Zoltán Szabó and Peter Bakucz**	Convolutional Neural Network Method for Determining the Optimum Number of Transport Data Loggers

46	**Dragana Radojicic, Simeon Kredatus and Thorsten Rheinlander**	An approach to reconstruction of data set via supervised and unsupervised learning

12:40 -14:00   Lunch

14:00 – 15:40   Parallel sessions

14:00 – 15:40   [W2a] Session on Applications I   Room F09

Session chair: Dániel Drexler

61	**Nina Radojicic** and Miroslav Maric	Some possibilities of using fuzzy logic within methods for solving a variant of vehicle routing problem
16	**Istvan Kecskes, Ervin Burkus and Peter Odry**	Gear efficiency modeling in a simulation model of a DC gearmotor
26	**Yahiea Al Naiemy, Taha Elwi and Nagy Lajos**	A Folded Microstrip Antenna Structure Based Differential Phase Shift Keying Modulation Technique
50	**Balázs Németh, Gergely Sántha and Péter Gáspár**	Modeling of driver steering behavior for the control design of automated vehicles
22	**Daniel Fenyes, Balazs Nemeth and Peter Gaspar**	Control design of variable-geometry suspension systems using a reconfiguration strategy

14:00 – 15:40   [W2b] PhD Student Workshop on Applied Informatics in Computational Intelligence I   Room F08

Session organizer and session chair: László Horváth

2	**Judith Jakob** and **József Tick**	CoPeD: Comparable Pedestrian Driver Data Set for Traffic Scenarios
6	**Hamza Khan and József Tar**	Novel Contradiction Resolution in Fixed Point Transformation-based Adaptive Control
60	**Zoltán Fried, Sándor Szénási and Imre Felde**	Reconstruction of a heat transfer coefficients by using FWA approach
13	**Taliga Miklós, Komoróczki - Steiner Henriette and Kertész Zsolt László**	Testing concepts in Safety-Critical Development
15	**Hamza Khan, Tamás Faitli, Tamás Szili and József Tar**	Preliminary Investigation on the Possible Adaptive Control of an Inverted Pendulum-type Electric Cart
38	**Jozsef Kopjak and Gergely Sebestyen**	Deep sleep algorithms in battery powered TDMA wireless mesh sensor network

15:40 – 16:00   Coffee break

16:00 – 17:40   Parallel sessions

16:00 – 17:40   [W3a] Session on Informatics I   Room F09

Session chair: György Eigner

59	**György Eigner**, Máté Siket and Levente Kovács	Kalman Filtering of Discrete LPV Diabetes Mellitus Model for Control Purposes
3	**Frantisek Capkovic**	Modelling and Control of Complex Flexible Manufacturing Systems by Means of Petri Nets
14	**Dávid El-Saig, Renáta Nagyné Elek and Tamás Haidegger**	A Graphical Tool for Parsing and Inspecting Surgical Robotic Datasets
45	**Csaba Biró and Gábor Kusper**	BaW 1.0- A problem specific SAT solver for effective strong connectivity testing in large directed graphs
9	**Szilárd Nemes and Margit Antal**	Performance Evaluation of Gaussian Mixture Models for Inertial Sensor-based Gait Biometrics

16:00 – 17:40   **[W3b] Session on Applications II**   **Room F08**

Session chair: György Györök

12	**Omar Al-Debagy** and Peter Martinek	A Comparative Review of Microservices and Monolithic Architectures
18	**György Györök**	Continuous Operation Monitoring of Electronic Circuits with Embedded Microcontroller
21	**Andras Molnar, Daniel Stojcsics, Zsolt Domozi and Istvan Lovas**	Gamma radiation distribution map creation using a small-sized drone
31	**László Juhász**	The Fourth Industrial Revolution in Hungary
54	**Emőke Imre, Csaba Hegedűs and Sándor Kovács**	Some comments on the non-linear model fitting

17:00   **MFT meeting**   **Room F07**

18:00   **Welcome Reception**

November 22, Thursday

9:00 – 10:40   Parallel sessions

9:00 – 10:40   **[T1a] Session on Informatics and Modeling Uncertainty Room F09**

Session chair: Gábor Kertész

32	**István Finta**, Gergely Éliás and János Illés	Packet Loss and Duplication Handling in Stream Processing Environment
20	**László Molnár, József Domokos, Ferando Isabella and István Módy**	Establishing sleep stages using Delta, Theta and Gamma oscillations from long term Local Field Potential (LFP) recordings in mice
40	**Eva Beke, Antal Bódi, Tibor Kovács, Dóra Maros, Katalin György and László Gáspár**	The role of drones in linking Industry 4.0 and ITS ecosystems
7	**Irina Georgescu and Jani Kinnunen**	The influence of prudence and temperance on the credibilistic portfolio optimization
30	**Olivér Törő, Tamás Bécsi, Szilárd Aradi and Ádám Vellai**	Multimodel state estimation in road traffic using constrained filtering

9:00 – 10:40   **[T1b] PhD Student Workshop on Applied Informatics in Computational Intelligence II**   **Room F08**

Session organizer and session chair: László Horváth

44	**Esmeralda Kadena** and Peter Holicza	Security Issues in the Blockchain(ed) World
53	**Istvan Lovas and Andras Molnar**	Quadcopter power consumption analyzation at different landing trajectories

56	**Róbert Pethes and Levente Kovács**	Static Edge Voting Models
57	**Sinan Koçak, Edit Tóth-Laufer and László Pokorádi**	Comparision of the Defuzzification Methods in Risk Assessment Applications
58	**Árpád Varga, György Eigner and József Tar**	Simple aeromechanical test bed for preliminary performance evaluation of robust nonlinear control methods
10	**Philipp Rosenberger and József Tick**	Suitability of PMBOK 6th edition for agile-developed IT Projects

9:00 – 10:40　　　　Poster session　　　　　　　　　　　　　　　　Room F07

Session chair: Rudolf Andoga

4	**Sándor Szénási**, Imre Felde, Gábor Kertész and László Nádai	Comparison of Road Accident Black Spot Searching Methods
5	**Sándor Szénási, Imre Felde, Gábor Kertész and László Nádai**	Road Accident Black Spot Localisation using Morphological Image Processing Methods on Heatmap
25	**Annamária Koncz and László Pokorádi**	8D Usage in Automotive Industry
27	**Éva Csilla Berecz and Gábor Kiss**	Dangers in autonomous vehicles
28	**László Tóth and Gábor Kiss**	The Relationship Between Standard and Autonomous Vehicles
33	**Tímea Lázár-Fülep**	Few Words about Reliability of Vehicle Systems with Complex Interconnections
41	**Ádám Pintér and Sándor Szénási**	Classification of source code solutions based on the solved programming tasks
43	**Marián Hudák, Štefan Korečko, Branislav Sobota, Tomáš Balluch and Jakub Grib**	Walking Pad and Gyroscope-Based Object Manipulation for Virtual Reality CAVE
47	**Alen Hatibovic and Péter Kádár**	The application of autonomous drones in the environment of overhead lines
55	**Claudia-Adina Bojan-Dragos, Radu-Emil Precup, Elena-Lorena Hedrea, Attila Simo and Alexandra Daia**	Discrete time Control Solutions for Inverted Pendulum Crane Mode Control
62	**Rudolf Andoga, Michal Schreiner, Tomáš Moravec, Ladislav Főző and Martin Schrötter**	Automatic decision making process in a small unmanned airplane

10:40 – 11:00　　Coffee break

11:00 – 12:20　　　　Special session on 'Safety and Reliability of Vehicles Systems'　　　　　　　　　　　Room F09

Session organizer and session chair: László Pokorádi

11	**Dániel András Drexler**, Árpád Takács, Péter Galambos, Imre J. Rudas and Tamás Haidegger	Handover process models of autonomous cars up to level 3 autonomy
35	**István Nagy and Szilárd Tuloki**	Fault Analysis and System Modelling in Vehicle Engineering
49	**Árpád Barsi, Ádám Nyerges, Vivien Potó, Szilveszter Siroki, Viktor Tihanyi and Márton Virt**	Offline path planning of automated vehicles for slow speed maneuvering
24	**László Pokorádi**	Methodolody of Advanced Graph Model-based Vehichle Systems' Analysis

12:20 – 14:00　　Lunch

14:00 – 17:00   ERC Tamed Cancer workshop   Room F09

I. Results of the ERC Tamed Cancer StG Grant (679681)

Session chair: Levente Kovács

14.00-14.20 - Tamed Cancer: Results and perspectives
- Levente Kovács, Principal Investigator, Physiological Controls Research Center, Óbuda University

14.20-10.35 – Control-oriented modeling of tumorous angiogenesis and tumor growth
- Dávid Csercsik, post-doc, Physiological Controls Research Center, Óbuda University

14.35-14.50 - Qualitative analysis of a closed-loop model of tumor growth control
- Dániel Adrás Drexler, post-doc, Physiological Controls Research Center, Óbuda University

17	**Dániel András Drexler**, Ilona Nagy, **Valery Romanovski**, **János Tóth** and Levente Kovács	Qualitative analysis of a closed-loop model of tumor growth control

14.50-15.05 – Tumor growth control by using TP-LPV-LMI methodologies
- György Eigner, post-doc, Physiological Controls Research Center, Óbuda University

15.05-15.15 – Robust and optimal control of tumor growth
- Bence Czakó, PhD student, Physiological Controls Research Center, Óbuda University

15.15-15.25 - Spatio-temporal modeling of tumor progression
- Tamás Gönczy, MSc student, Physiological Controls Research Center, Óbuda University

15.25-15.45   Coffee Break

II. International experts

Session chair: Levente Kovács

15.45-16.05 – Modeling Haemorrhagic Shock
- Andrea de Gaetano, CNR IASI BioMatLab, Rome, Italy

16.05-16.25 – Emerging research topics for Control 4.0: a Ghent University -DYSC perspective
- Clara Ionescu, Ghent University, Belgium

16.25-16.45 – Control engineering approach in anesthesia: results of UNIBS
- Antonio Visioli, University of Brescia, Italy

16.45-17.00 – Machine learning in biochemistry and medicine
- Eva Dulf, Technical University Cluj-Napoca, Romania

18:00   Banquet