

## January 26, Thursday

**8:30 – 9:00 Opening Ceremony**

**9:00 – 9:40 Plenary talk I**

Session chair: Peter Sincák

90 | Victor Raskin | Semantics as the Basis of Truly Cognitive Computing

**9:40 – 10:20 Plenary talk II**

Session chair: Peter Sincák

91 | Julia Taylor Rayz | In Pursuit of Human-Friendly Interaction with a Computational System: Computational Humor

**10:20 – 10:40 Coffee break**

**10:40 – 11:20 Plenary talk III**

Session chair: Levente Kovács

88 | Cindy L. Bethel, Zachary Henkel, Deborah K. Eakin, David C. May and Melinda Pilkinton | Moving Toward an Intelligent Interactive Social Engagement Framework for Information Gathering

**11:20 – 12:00 Plenary talk IV**

Session chair: Jan Paralic

89 | Daniel W. Carruth and Cindy L. Bethel | Challenges with the Integration of Robotics into Tactical Team Operations

**12:00 – 13:30 Lunch**

**13:30 – 15:30 [T1] Session**

Session chair: Ladislav Főző

17 | Zuzana Dankovičová and Liberios Vokorokos | Using of the Forensic Analyzing Tools, Code Obfuscation

35 | Dan-Adrian Dutescu, [Mircea-Bogdan Radac](#) and [Radu-Emil Precup](#) | Model Predictive Control of a Nonlinear Laboratory Twin Rotor Aero-dynamical System

46 | Michael Gallimore, Chris Bingham and Mike Riley | Self-Organising Symbolic Aggregate Approximation for Real-Time Fault Detection and Diagnosis in Transient Dynamic Systems

73	<b>Gergely Magyar, <a href="#">Peter Sincak</a> and Ján Magyar</b>	CoWoOZ – A cloud-based teleoperation platform for social robotics
81	<b>Levente Kovács, Csaba Maszlag, Miklós Mezei and György Eigner</b>	Robust Nonlinear Model Predictive Control of Diabetes Mellitus
16	<b>Dusan Krokavec and Anna Filasova</b>	Relaxed Design Conditions for Takagi-Sugeno Unknown Input Observers
26	<b>László Viktor Jánoky and Péter Ekler</b>	The Analysis of Participatory Computing in Dynamic Web Environments
62	<b>Károly Beneda and Ladislav Főző</b>	Identification of Small Scale Turbojet Engine with Variable Exhaust Nozzle

### 13:30 – 15:30 Poster session

Session chair: Vladimir Gaspar

2	<b>Martin Sarnovsky</b> and David Bajus	Building environment analysis based on clustering methods from sensor data on top of the Hadoop platform
9	<b>Murat Taşkıran and Zehra Gülru Çam</b>	Offline Signature Identification via HOG Features and Artificial Neural Networks
10	<b>Mehmet Killioglu, Murat Taşkıran and Nihan Kahraman</b>	Anti-spoofing in face recognition with liveness detection using pupil tracking
12	<b>Miroslava Muchová, Ján Paralič and Marek Jančuš</b>	An approach to support education of data mining algorithms

### 14:00 – 18:00 TUKE PhD poster session

### 15:30 – 15:45 Coffee break

### 15:45 – 17:45 [T2] Session

Session chair: Cindy L. Bethel

102	<b>László Horváth</b> and Imre J. Rudas	Role of Information Content in Multipurpose Virtual Engineering Space
14	<b><a href="#">Matus Pleva</a>, <a href="#">Jozef Juhar</a>, Anton Cizmar, Christopher Hudson, <a href="#">Daniel W. Carruth</a> and <a href="#">Cindy L. Bethel</a></b>	Implementing English Speech Interface to Jaguar Robot for SWAT Training
45	<b>Ildiko Szoke, <a href="#">Vasile Stoicu-Tivadar</a> and <a href="#">Diana Lungeanu</a></b>	A comparative study of using the LBC format for compressing medical images
84	<b>Jakub Hvizdoš, Ivan Vojtko, Miloš Koscelanský, Juraj Pavlov, Ján Vaščák and Peter Sinčák</b>	Applications of Remote Controlled robotics in the Intelligent Space
51	<b>Elena Cherepovskaya and Andrey Lyamin</b>	An Evaluation of Biometric Identification Approach on Low-Frequency Eye Tracking Data
57	<b>Peter Tóth, Marcel Vološin, Martin Zoričák and Jana Zausinová</b>	Frequency spectrum allocation in the agent-based model of the real-time spectrum secondary market
52	<b>Andrey Lyamin and Elena Cherepovskaya</b>	An Evaluation of Biometric Identification Approach on Low-Frequency ECG Signal
64	<b>Daniel Novak, Dusan Kocur and Jakub Demcak</b>	Static Person Detection and Localization with Estimation of Person's Breathing Rate Using Single Multistatic UWB Radar

## 15:45 – 17:45 Poster session

Session chair: Norbert Ádám

19	<b>Peter Bednár</b>	Vocabulary matching for information extraction language
41	<b>Frantisek Babic, Michal Vadovsky, Miroslava Muchová, Ján Paralič and Ljiljana Majnarić</b>	Simple Understandable Analysis of Medical Data to Support the Diagnostic Process
20	<b>Norbert Ádám, Branislav Madoš, Anton Baláž and Tomáš Pavlik</b>	Artificial Neural Network based IDS
21	<b>Branislav Mados, <a href="#">Norbert Ádám</a>, Anton Balaz and Katarína Šinařová</b>	The CASE Tool for Programming of the Multi-Core System-on-a-Chip with the Data Flow Computation Control

## 18:45 Welcome reception

# January 27, Friday

## 8:30 – 9:05 Invited talk I

Session chair: Frantisek Babic

101	<b>Peter Lacko</b>	From Perceptrons to Deep Neural Networks
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## 9:05 – 9:40 Invited talk II

Session chair: Szilveszter Kovács

85	<b>Dávid Vincze</b>	Fuzzy Rule Interpolation and Reinforcement Learning
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## 9:40 – 10:00 Coffee break

## 10:00 – 12:00 [F1] Session

Session chair: Daniel W. Carruth

28	<b>Zuzana Bilanová, Daniel Mihalyi and Liberios Vokorokos</b>	Hanoi Towers in resource oriented perspective
103	<b>Dániel András Drexler, Johanna Sápi and Levente Kovács</b>	A minimal model of tumor growth with angiogenic inhibition using bevacizumab
86	<b>Daniela Čurová, Renát Haluška, Tomáš Hucec, Michal Puheim, Ján Vašćák and Peter Sinčák</b>	Intelligent Space at Center for Intelligent Technologies – System Proposal
66	<b>Tamás Tompa and Szilveszter Kovács</b>	Clustering-based fuzzy knowledgebase reduction in the FRIQ-learning
63	<b><a href="#">Renata-Graziela Boar</a>, <a href="#">Alexandru Iovanovici</a> and Horia Ciocarlie</b>	Complex network interpretation of European Union economic dynamics
7	<b><a href="#">Nicolae Luca Iacobici</a>, <a href="#">Flaviu Mihai Frigura-Iliasa</a>, <a href="#">Petru Andea</a> and <a href="#">Mihaela Frigura-Iliasa</a></b>	A New Computer Based Design for a 145 kV SF6 Switch
100	<b>Péter Hell, Miklós Mezei and Péter János Varga</b>	Drone communications analysis

**10:00 – 12:00 Poster session**Session chair: Krisztina Némethy23 | **Bohuslava Juhásová, Martin Juhas** and Igor Halenar

TCP/IP protocol utilisation in process of dynamic control of robotic cell according Industry 4.0 concept

36 | **Zuzana Vantová, Ján Paralič** and Vladimír Gašpar

Mobile Application for Creating Presence Lists

83 | **Attila Bencsik, Marianna Lendvai, Gyula Kártyás, József Gáti** and Franciska Hegyesi

Video-based Measurement System of Parameters of the Pyrotechnic Effect

54 | **Anna Holubová, Jakub Schlenker, Vladimír Socha, Jan Mužík, David Gillar, Marek Doksanský, Milan Poláček, Karel Hána, Jan Kašpar, Pavel Smrčka, Monika Cendelínová** and Jan Gojda

Using Mobile Technologies with Psychiatric Patients: Assessing the Potential to Reduce Risk of Developing Diseases Related to Inactivity

**12:00 – 13:30 Lunch****13:30 – 15:50 [F2] Special Session on Recent PhD Research Achievements in Applied Informatics I**Organized by and session chair: László Horváth13 | **Judith Jakob** and József Tick

Concept for transfer of driver assistance algorithms for blind and visually impaired people

49 | **Hamza Khan, Aurél Galántai** and [József Tar](#)

Adaptive Solution of the Inverse Kinematic Task by Fixed Point Transformation

79 | **Péter Piros, Rita Fleiner** and Levente Kovács

Linked Data Generation for Courses and Events at Óbuda University

80 | **György Eigner, István Böjthe, Péter Pausits** and Levente Kovács

Investigation of the TP modeling possibilities of the Hovorka T1DM model

82 | **Adrienn Dineva, József Tar, Annamária Várkonyi-Kóczy** and Vincenzo Piuri

Application of Fixed Point Transformation to Classical Model Identification using New Tuning Rule

87 | **Árpád Takács, Péter Galalmbos, Imre J. Rudas** and Tamás Haidegger

A Novel Methodology for Usability Assesment of Rheological Soft Tissue Models

92 | **Neerendra Kumar, Márta Takács** and Zoltán Vámosy

Robot Navigation in Unknown Environment using Fuzzy Logic

95 | **István Golarits, Máté István Tóth** and Zoltán Vámosy

Detection of Oesophagus Tissue Changes Using Image Processing

96 | **Bence Czakó** and Krisztián Kósi

Novel Method for Quadcopter Controlling Using Nonlinear Adaptive Control Based on Robust Fixed Point Transformation Phenomena

97 | **András Placskó** and Szabolcs Sergyán

Development of Keyword-based Image Retrieval System in Automatically Annotated Image Database

98 | **Ádám Tóth, István Vajda** and Zoltán Vámosy

E-assessment using image processing in Exams

99 | **Yatish Bathla** and Márta Takács

Evaluating Product System Behavior using Soft Computing in Product Structure Modeling

105 | **Dániel Kiss**

A model of heat exchange and accumulation in small-sized bioreactors during ethanol fermentation

### 13:30 – 15:50 Poster session

Session chair: Marek Penhaker

- 37 **Vladimír Gašpar**
- 38 [Michal Vadovský](#) and [Ján Paralič](#)
- 39 Martin Sarnovsky, Peter Butka and Andrea Huzvarova
- 48 Martin Cerny, [Tomas Klinkovsky](#), [Jaromir Petrik](#), Lukáš Peter and [Marek Penhaker](#)

- Analyzing road quality using a mobile application
- Parkinson's Disease patients classification based on the speech signals
- Twitter data analysis and visualizations using the R language on top of the Hadoop platform
- Defibrillator Educational Devices

### 15:50 – 16:00 Coffee break

### 16:00 -17:45 [F3] Session

Session chair: Dávid Vincze

- 60 **Daniel Fenyes**, Balázs Németh and Peter Gaspar
- 74 **Tomáš Lojka**, Peter Papcun and Iveta Zolotová
- 58 [Zsuzsanna Bede](#), Balázs Németh and Péter Gáspár
- 104 **Gábor Kertész**, Sándor Szénási and Zoltán Vámosy
- 4 **Vojtech Šimák**, Michal Gregor, Marián Hruboš, Dušan Nemeč and Jozef Hrbček
- 40 [Antal Ürmös](#), Zoltán Farkas, Mark Farkas, [Tamas Sandor](#), Laszlo T. Koczy and [Akos Nemcsics](#)
- 68 **Ben Dkhil Mejdí**

- Optimal control design of a variable-geometry suspension with electro-hydraulic actuator
- Business Rule Engine for Education in Virtual Laboratory CyberLabTrainSystem
- Simulation-based analysis of mixed traffic flow using VISSIM environment
- Application and properties of the Radon transform for object image matching
- Why Lethal Autonomous Weapon Systems Are Unacceptable
- Fuzzy and Kohonen SOM based classification of different OD nanostructures
- Towards An Automatic Drowsiness Detection System by Evaluating the Alpha Band of EEG Signals

### 16:00 – 17:45 Poster session

Session chair: Iveta Zolotová

- 93 **Soukaina Lamnini** and Péter Kádár
- 75 [Martin Miskuf](#), [Peter Michalik](#) and [Iveta Zolotova](#)
- 76 **Norbert Ferenčík**, Ján Jadlovský, Michal Kopčík and Iveta Zolotová
- 47 **Sándor Szénási** and Imre Felde

- Survey on Perspectives of PV technology and their applications
- Data Mining in Cloud Usage Data with Matlab
- PI Control of Laboratory Model Elevator via Ladder Logic in PLC
- Genetic Algorithm to Solve the Inverse Heat Conduction Problem

### 18:45 Banquet

# January 28, Saturday

## 8:30 – 10:15 [S1] Session

Session chair: Peter Lacko

53	Sang-Il Oh and <b>Hang-Bong Kang</b>	A New Object Proposal Generation Method for Object Detection in RGB-D Data
69	Mohammed Faeik Ruzaij, Sebastian Neubert, Norbert Stoll and Kerstin Thurow	Design and Implementation of Low-Cost Intelligent Wheelchair Controller for Quadriplegias and Paralysis Patient
15	Lukas Spendla, Michal Kebisek, <a href="#">Pavol Tanuska</a> and <a href="#">Lukas Hrcka</a>	Concept of Predictive Maintenance of Production Systems in Accordance with Industry 4.0
29	Abel Garai	Comprehensive Healthcare Interoperability Framework Integrating Telemedicine Consumer Electronics with Cloud Architecture
25	Marek Penhaker, Barbora Svobodova, Martin Augustynek and Jan Kubicek	Design of Spectrophotometry for Neonatal Phototherapy
32	Domokos Kiss and Dávid Papp	Effective Navigation in Narrow Areas: A Planning Method for Autonomous Cars
71	Michal Smolik and <a href="#">Vaclav Skala</a>	Spherical RBF Vector Field Interpolation: Experimental Study

## 8:30 – 10:15 Poster Session

Session chair: Anikó Szakál

94	<b>Ladislav Főző</b> , Jozef Čerňan, Miroslava Cúttová, Katarína Ratkovská and František Adamčík	Effect of TBC on Heat Transfer into Nickel Based Refractory Alloy
72	<b>Dominik Vošček and Anna Jadlovská</b>	Modelling and Control of a Cyber-Physical System represented by Hydraulic Coupled Tanks
61	<a href="#">Mária Tóthová</a> , <a href="#">Alena Vagaská</a> and <a href="#">Milan Balara</a>	Solution of Systems with the Time-Delay Using the Operator w
67	<b>Matúš Uchnár and Ján Hurtuk</b>	Safe user authentication in a network environment

## 10:15 – 10:30 Coffee break

## 10:30 – 12:00 [S2] Session

Session chair: Ladislav Főző

30	<b>Martin Štancel</b> and Eva Chovancová	Maintenance Performance Audit Software
42	<b>Mária Franeková, Peter Holecko, Emília Bubeníková and Alžbeta Kanáliková</b>	Transport scenarios analysis within C2C communications focusing on security aspects
43	<b>Juraj Petřík, Daniela Chudá and Branislav Steinmüller</b>	Source code plagiarism detection: The Unix way
50	<b>Ivana Strumberger, Nebojsa Bacanin and Milan Tuba</b>	Hybridized Krill Herd Algorithm for Large-Scale Optimization Problems
59	<b>Dániel Péter Kun, Erika Baksáné Varga and Zsolt Tóth</b>	Ontology based Navigation Model of the ILONA System

65 | **Marko Lukic, Eva Tuba and Milan Tuba**

Leaf Recognition Algorithm using Support Vector Machine with Hu Moments and Local Binary Patterns

**10:30 – 12:00 Poster Session**

Session chair: Franciska Hegyesi

77 | Erik Kajáti, **Martin Miškuf** and Peter Papcun

Advanced Analysis of Manufacturing Data in Excel and its Add-Ins

78 | Mohammed Faeik Ruzaij, Sebastian Neubert, Norbert Stoll and Kerstin Thurow

A Speed Compensation Algorithm for a Head Tilts Controller Used for Wheelchairs and Rehabilitation Applications

**12:00 Lunch and farewell**