

## Thursday

14:00-14:30	Opening Ceremony	<b>Town Hall</b>
14:30-15:15	Plenary lecture by <b>Ljiljana Trajković</b> <i>Complex Networks</i>	Chair: Imre Rudas
15:15-16:00	Plenary lecture by <b>Katalin Hangos</b> <i>Structural Decomposition and its Use in Qualitative Model-based Diagnosis of Complex Systems</i>	Chair: Levente Kovács
16:00-16:30	Coffee break	
16:30-17:15	Plenary lecture by <b>C. L. Philip Chen</b> <i>Unmanned Systems Planning and Control based on Bionic Swarm Movement</i>	Chair: Márta Takács
17:15-18:00	Plenary lecture by <b>Radu-Emil Precup</b> <i>Evolving Fuzzy Models of Mechatronics Applications</i>	Chair: Igor Fürstner
18:00	Welcome Reception	

## Friday

		<b>VTS</b>
9:00-10:20	<b>[F1] Session on Informatics I</b>  Chair: Miklós Póth	Room A2
9:00-9:20	<b>Miklós Póth</b> and Željko Trpovski <i>Influence of block size on JPEG compression performance</i>	
9:20-9:40	<b>László Kajdócsi</b> , András Dörömbözi and János Kovács <i>Development of Bluetooth Mesh Core Stack using OmNET++</i>	
9:40-10:00	Anton Baláž, <b>Michal Hulič</b> , Marek Kurilec and Martin Štancel <i>Classification of Security for System Vulnerabilities</i>	
10:00-10:20	<b>Dávid Papp</b> , Gábor Szűcs and <b>Zsolt Knoll</b> <i>Difference based query strategies in active learning</i>	
9:00-10:40	<b>[F1b] Session on Intelligent Robotics and Intelligent Mechatronics</b>  chair: Radu-Emil Precup	Room 206
9:00-9:20	<b>Adil Joldic</b> , Elmir Babovic, Nina Bijedic and Alin Bejenaru-Vrabie <i>Laboratory Environment for Algorithms Testing in Mobile Robotics</i>	
9:20-9:40	<b>Zoltán Gyenes</b> and Emese Gincsiné Szádeczky-Kardoss <i>A novel concept of the lane keeping algorithms for mobile robots</i>	
9:40-10:00	<b>Judith Jakob</b> and József Tick <i>Towards a Transfer Concept from Camera-Based Driver Assistance to the Assistance of Visually Impaired Pedestrians</i>	
10:00-10:20	<b>Huanze Zeng</b> and Argon Chen	

- 10:20-10:40 *Classification Tree with Hybrid Splitting Mechanism*  
**Radmila Gerov** and Zoran Jovanović  
*Closed-loop identification of a first-order plus time delay model using Lambert W function*
- 10:40-11:00 coffee break
- 11:00-12:20 **[F2a] Session on Informatics II** Room A2  
 chair: Peter Šarčević
- 11:00-11:20 **Orsolya Máthé, Botond Miklós**, István Bege, Attila Farkas and Csaba Sulyok  
*Woody: A Software System for the Design and Production of Doors and Windows*
- 11:20-11:40 **Hunor Hegedüs, Kata Szász**, Károly Simon, Tibor Fazakas, Andor Mihály and Katalin Nagy  
*Blood Notes: Software System for Promoting and Facilitating Blood Donation*
- 11:40-12:00 **Pál Fehér-Polgár** and Pál Michelberger  
*The Information Security Risks of the Byod, From Theoretical Point of View*
- 12:00-12:20 György Molnár, Zoltán Szűts and Zoltán Balogh  
*Modern digital Web 2.0 devices and services supporting the teaching of Technology and Informatics*
- 11:00-12:40 **[F2b] Special session on Fuzzy Systems in Mechanical Engineering** Room 206  
 chair: Edit Tóth-Laufer
- 11:00-11:20 **Peter Bakucz** and **Jozsef Zoltan Szabo**  
*Determination of Critical Fault Tree Components Based on Mixed Fuzzy Top Event*
- 11:20-11:40 **Peter Bakucz** and **Jozsef Zoltan Szabo**  
*Determining Algorithmic Performance with Uncertainty Analysis*
- 11:40-12:00 Sinan Koçak, Edit Tóth-Laufer and **László Pokorádi**  
*Fuzzy Failure Modes and Effects Analysis with Different Defuzzification Methods – A Case Study for Bearing Manufacturing Process*
- 12:00-12:20 **Edit Tóth-Laufer** and Richárd Horváth  
*A MIMO Fuzzy Model to Predict Turning Metrics*
- 12:20-12:40 **Judit Lukács**  
*Comparison of defuzzification methods for cabin noise prediction of passenger cars*
- 11:00-12:40 **Applied Mathematics and Intelligent Robotics - poster session** Student info corner  
 chair: Ivana Štajner-Papuga
- Sandra Buhmiller, Sanja Rapajic, Milan Lukić, Slavica Medić, Nataša Duraković and **Tatjana Grbić**  
*Derivative-free method for singular systems*
- Slavica Medić, Nedeljko Stojaković, Darko Čapko, Nataša Duraković and **Tatjana Grbić**  
*Mathematical Model of Queue Size in a Postal Network Unit with Variable Number of Servers*
- Darja Gabriska** and Miroslav Ölvecký  
*Using Deep Learning to Improve Process Operator Reliability*
- Ján Hurtuk**, Jakub Červeňák, Martin Štancel and Michal Hulič  
*Indoor navigation using IndoorAtlas library*

**Informatics - poster session**

chair: Zlatko Čović

Zuzana Dankovicova and **Jan Hurtuk**

*Evaluation of Digitalized Handwriting for Dysgraphia Detection Using Random Forest Classification Method*

**Peter Gnip** and Peter Drotár

*Ensemble methods for strongly imbalanced data: bankruptcy prediction*

Dušanka Dakić, Srđan Sladojević, Teodora Lolić and Darko Stefanović

*Process Mining Possibilities and Challenges: A Case Study*

**Zlatko Čović** and **Helena Manojlović**

*Developing Key Competencies through Hackathon Based Learning*

**Special session on Safety and Reliability of Vehicles Systems - poster session**

chair: István Nagy

Dániel András Drexler, **Árpád Takács**, Tamás Dániel Nagy and Tamás Haidegger

*Handover Process Modeling in Autonomous Vehicles – a Control Engineering Approach*

12:40-14:30 Lunch

14:30-15:50 **[F3a] Session on Applied Mathematics**

Room A2

chairs: Kenichi Tamura, Mirjana Štrboja

14:30-14:50 **Biljana Mihailović**, Mirjana Štrboja and Miloš Todorov

The bipolar Choquet g-integrals

14:50-15:10 Miloš Todorov, **Mirjana Štrboja** and Biljana Mihailović

Jensen type inequality for the bipolar Shilkret and Sugeno integrals

15:10-15:30 **Dragan Jočić** and **Ivana Štajner-Papuga**

An overview of the existing classes of aggregation operations with an absorbing element

15:30-15:50 **Kenichi Tamura**

Adaptive Framework for Evolutionary Algorithms to Evaluation-iteration Constrained Optimization Problems

18:00 Banquet

**Saturday**

9:00-10:40 **[S1a] Session on Intelligent Manufacturing Systems and Computational Intelligence**

Room A2

chair: Janos Simon

- 9:00-9:20 **Srikanth Kamath** and Shawn Ivan D'souza  
*Bit Error Rate Analysis of Analog and Hybrid Beamforming Techniques*
- 9:20-9:40 **Ignacy Duleba** and Iwona Karcz-Duleba  
*Evaluation of Configurations in Nonholonomic Motion Planning, 2D Case Study*
- 9:40-10:00 **Olga Viatcheslavovna Mamoutova, Mikhail B. Uspenskiy, Anton V. Sochnev, Sergey V. Smirnov** and Marina V. Bolsunovskaya  
*Knowledge Based Diagnostic Approach for Enterprise Storage Systems*
- 10:00-10:20 **Isabela Dramnesc** and Tudor Jebelean  
*Case Studies on Algorithm Discovery from Proofs: The Delete Function on Lists and Binary Trees using Multisets*
- 10:20-10:40 **Gábor Szúcs** and **Dorottya Huszti**  
*Seq2seq Deep Learning Method for Summary Generation by LSTM with Two-way Encoder and Beam Search Decoder*
- 9:00-10:40 **[S1b] Special session on Safety and Reliability of Vehicles Systems** Room 206  
chair: László Pokorádi
- 9:00-9:20 **Dániel Zentai**  
*Graph theoretic risk classification in transportation networks*
- 9:20-9:40 **Gábor Kiss**  
*External manipulation recognition modul in self-driving vehicles*
- 9:40-10:00 László Pokorádi and **Péter Felker**  
*Interval Uncertainty Analysis of Bridge Structure Systems' Reliability*
- 10:00-10:20 **István Nagy** and Farkas Bence Vér  
*Practical Analysis of an AMR Wheel Speed Sensor and CAN Bus System for the Communication's Failures and its Implications to the EV's Control System*
- 10:20-10:40 **Attila Szabó, András Nagy** and Gábor Kozsely  
*Laser cutting technology development for Fe based metallic glass*
- 10:40-11:00 coffee break
- 11:00-12:00 **[S2a] Special Session on PhD Student Research in Applied Informatics and Numerical Mathematics** Room A2  
chair: László Horváth
- 11:00-11:20 **Gergely Sebestyen** and Jozsef Kopjak  
*Event-driven Fuzzy Inference System Implementation in Node-RED*
- 11:20-11:40 **Árpád Varga, György Eigner** and József K. Tar  
*Numerical Simulations for an Experimental Test Bed for Adaptive Control Methods*
- 11:40-12:00 **Hemza Redjimi** and József Tar  
*The Use of Multiple Components Fixed Point Iteration in the Adaptive Control of Single Variable Systems*