
VENUE

The Symposium will be held at Budapest Tech
Address: Bécsi út 96/B, H-1034 Budapest, Hungary

PROCEEDINGS

Each accepted paper reaching us in time will be published in the volume of proceedings that will be distributed at the registration desk.

OPENING HOURS OF THE REGISTRATION DESK

The registration desk will be open during the symposium.

LANGUAGE

The official languages of the Symposium are English and Hungarian. All the camera-ready manuscripts should be submitted in English, the presentations can be made either in English or in Hungarian.

LUNCH AND RECEPTION

All the participants are cordially invited by Budapest Tech for lunch and evening reception.

PRESENTATION

Presentations can be made by using OHP or data projector. All authors are kindly asked to take their presentation on CD or USB drive. To present the paper it is not allowed to use own computer. Conference room is supplied with OHP and data projector with PC.

SMOKING

Please, be so kind to your lungs and your colleagues by not smoking in the building and social events of the symposium.

SYMPOSIUM SECRETARIAT

Anikó Szakál
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November 12, 2009, Thursday

Budapest Tech
Bécsi út 96/B, H-1034 Budapest, Hungary

9:00 - 9:30 **OPENING CEREMONY** **Room F09**

Chairman: **Imre J. Rudas**
Rector of Budapest Tech, Hungary

9:30 - 10:50 **MORNING SESSION I** **Room F09**

Session Chair: **János Fodor**
Budapest Tech, Hungary

9:30 **Robots between Fictions and Facts**

Jana Horáková¹, Jozef Kelemen^{2,3}

¹Faculty of Arts, Masaryk University, Brno, Czech Republic

²VŠM College of Management, Bratislava, Slovakia

³Institute of Computer Science, Silesian University, Opava, Czech Republic

9:50 **Evolutionary Approach for Structural and Parametric Adaptation of BP-like Multilayer Neural Networks**

Jaroslav Tuhársky, Tomáš Reiff, Peter Sinčák

Technical University of Košice, Slovakia

10:10 **Dependence of Complexity of Neural Networks on Input Dimension**

Vera Kurkova

Institute of Computer Science, Prague, Czech Republic

10:30 **Structure for Behaviourist Representation of Knowledge**

Claudiu Pozna

University Transilvania of Brasov, Romania

10:50 - 11:10 **COFFEE BREAK**

11:10 - 12:50 **MORNING SESSION II** **Room F09**

Session Chair: **Peter Sinčák**
Technical University of Košice, Slovakia

11:10 **Modern Control Solutions for Mechatronic Servosystems. Comparative Case Studies**

Claudia-Adina Dragoş, Stefan Preitl, Radu-Emil Precup, Marian Creţiu

“Politehnica” University of Timisoara, Romania

11:30 **Advanced Anytime Control Algorithms And Modeling of Turbojet Engines**

Ladislav Fózó, Rudolf Andoga, Ladislav Madarász

Technical University of Košice, Slovakia

- 11:50 Classification of Vigilance Levels Related EEG Spectrograms**
David Coufal
 Institute of Computer Science of Czech Academy of Sciences
- 12:10 Modeling and Simulation of an Incremental Encoder Used in Electrical Drives**
János Jób Incze, Csaba Szabó, Mária Imecs
 Technical University of Cluj-Napoca, Romania
- 12:30 The Lagrange Interpolation Formula for Analyzing Fluid Movement in Network Profiles**
Adalbert Kovács¹, Levente Kovács²
¹ University "Politehnica" of Timisoara, Romania
² Budapest University of Technology and Economics, Hungary
- 12:50 – 14:00 LUNCH**
- 14:00 – 15:40 AFTERNOON SESSION I Room F09**
Session Chair: *Jozef Kelemen*
 VŠM College of Management, Bratislava, Slovakia
- 14:00 Computational Intelligence assisted Theory Building in Economics**
Ladislav Andrasik
 Slovak University of Technology, Bratislava
- 14:20 A Higher Order Adaptive Approach to Tackle the Swinging Problem**
József K. Tarf, Imre J. Rudas‡, János F. Bitó‡
 †Telematics and Communications Informatics Knowledge Centre
 ‡Budapest Tech, Hungary
José A. Tenreiro Machado
 Institute of Engineering of Porto, Portugal
Krzysztof R. Kozłowski
 Poznan University of Technology, Poland
- 14:40 Dataflow Features in Computer Networks**
Gyula Max
 Budapest University of Technology and Economics, Hungary
- 15:00 Congestion Forecast Strategies**
Roland L. Kovács
 ABS Systems, Knorr-Bremse Fékrendszerek Ltd., Kecskemét, Hungary
László Nádai
 Computer and Automation Research Institute, Hungarian Academy of Sciences, Budapest, Hungary
Andrea Kovács-Tóth
 Budapest, Hungary
- 15:20 Comparative Survey of Thinning Algorithms**
Márk Vincze, Bence Kővári
 Budapest University of Technology and Economics, Hungary

15:40 – 16:00 COFFEE BREAK

16:00 – 17:20 AFTERNOON SESSION II Room F09

Session Chair: **Claudiu Pozna**
University Transilvania of Brasov, Romania

16:00 **Survey on Three Fuzzy Inference-based Student Evaluation Methods**

Zsolt Csaba Johanyák

Kecskemét College, Hungary

16:20 **Comparative Analysis of Various Evolutionary and Memetic Algorithms**

Krisztián Balázs¹, János Botzheim², László T. Kóczy^{1,2}

¹ Budapest University of Technology and Economics, Hungary

² Széchenyi István University, Győr, Hungary

16:40 **Usability of Neural Networks in Off-line Signature Verification**

Ádám Horváth, Bence Kóvári

Budapest University of Technology and Economics, Hungary

17:00 **A Global, Camera-based Mobile Robot Localization**

István Engedy, Gábor Horváth

Budapest University of Technology and Economics, Hungary

16:00 – 17:20 SPECIAL SESSION ON COGNITIVE INFO-COMMUNICATION Room F08

Session Chairs: **Péter Baranyi and Péter Korondi**
Budapest University of Technology and Economics, Hungary

16:00 **Spatial Integration and Data Compression in the Primary Visual Cortex**

Ilona Kovács

Budapest University of Technology and Economics, Hungary

16:20 **Challenges of Speech**

Géza Németh

Budapest University of Technology and Economics, Hungary

16:40 **3D Internet for Cognitive Info-Communication**

Péter Baranyi¹, Bjørn Solvang², Hideki Hashimoto³, Péter Korondi^{1,4}

¹Computer and Automation Research Institute

²Narvik University College, Department of Industrial Engineering

³The University of Tokyo

⁴Budapest University of Technology and Economics

17:00 **Vision System for Ethological Observation**

Antal Dóka

Eötvös Loránd University, Hungary

17:00 **Annual Meeting of Hungarian Fuzzy Association** Room F07

17:30

Cultural Event

Aula

18:00

Welcome Reception

NIK Aula

November 13, 2009, Friday

Budapest Tech
Bécsi út 96/B, H-1034 Budapest, Hungary

8:50 – 10:10 MORNING SESSION I

Room F09

Session Chair: **János Abonyi**
University of Pannonia, Hungary

8:50 Past and Present of Automatic Glucose-Insulin Control Research at BME

Levente Kovács¹, Balázs Benyó¹, Zoltán Benyó¹, Adalbert Kovács²

¹ Budapest University of Technology and Economics, Hungary

² University "Politehnica" of Timisoara, Romania

9:10 Binary Tomography Reconstruction Algorithm Based on the Spectral Projected Gradient Optimization

Tibor Lukács, Anikó Lukity***

* University of Novi Sad, Serbia

** Budapest University of Technology and Economics, Hungary

9:30 Walk Optimization for Hexapod Walking Robot

István Kecskés⁽¹⁾, Péter Odry⁽²⁾

⁽¹⁾Singidium, Beograd

⁽²⁾Subotica Tech, Serbia

9:50 Segmentation-based Optimal Experiment Design

László Dobos, Zoltán Bankó, János Abonyi

University of Pannonia, Hungary

10:10 – 10:30 COFFEE BREAK

10:30 – 11:15 PLENARY SESSION

Room F09

Session Chair: **János Fodor**
Budapest Tech, Hungary

Space Research, Facts and Perspectives

Antal K. Bejczy, USA

11:15 – 13:00 LUNCH

13:00 – 15:00 AFTERNOON SESSION IA

Room F09

Session Chair: **Annamária R. Várkonyi-Kóczy**
Budapest University of Technology and Economics, Hungary

13:00 Novel Model of Proof Test Coverage Factor

György Baradits, János Madár*, János Abonyi***

*SIL4S, Veszprém, Hungary
**Pannon University, Hungary

13:20 Quasi Optimization of Fuzzy Neural Networks

Rita Lovassy^{1,2}, László T. Kóczy^{1,3}, László Gál^{1,4}

¹ Széchenyi István University Győr, Hungary

² Budapest Tech, Budapest, Hungary

³ Budapest University of Technology and Economics, Hungary

⁴ University of West Hungary

13:40 Optimization of Multiple Traveling Salesmen Problem by a Novel Representation based Genetic Algorithm

András Király, János Abonyi

University of Pannonia, Hungary

14:00 New Possibilities in Human-Machine Interaction

András A Tóth, Balázs Tusor², Annamária R. Várkonyi-Kóczy^{1,2}

¹ Budapest Tech, Hungary

² Integrated Intelligent Space Japanese-Hungarian Laboratory

14:20 Graphs of Generative Grammars

Benedek Nagy

University of Debrecen, Hungary

14:40 Mojette Transform FPGA Implementation and Analysis

József Vásárhelyi¹, Péter Szoboszlai², Jan Turán³, Péter Serfőző⁴

¹ University of Miskolc, Hungary

² Magyar Telekom NyRt., Budapest, Hungary

³ Technical University of Košice, Slovakia

⁴ Ericsson Hungary Ltd., Budapest, Hungary

13:00 – 15:00 AFTERNOON SESSION IB

Room F08

Session Chair: **Zsolt Csaba Johanyák**
Kecskemét College, Hungary

13:00 Property Analysis of Visual Behavior Models to Code Transformation

Tamás Mészáros, Gergely Mezei

Budapest University of Technology and Economics, Hungary

13:20 A Formalism for Automated Verification of Model Transformations

Márk Asztalos, László Lengyel, Tihamér Levendovszky

Budapest University of Technology and Economics, Hungary

13:40 The Study of the Flow Conditions of Air Jet Weaving Machines

István Patkó, Lóránt Szabó

Budapest Tech Polytechnical Institution, Hungary

14:00 Cost Model for Near Real-time Recommender Systems

József Marton, Zsolt T. Kardkovács, Péter Éberhardt

Budapest University of Technology and Economics, Hungary

14:20 Delay Propagation in a Real Life Railway Network Controlled by a Fuzzy Logic Rule Base

Mark Farkas

Budapest University of Technology and Economics, Budapest, Hungary

Tibor Héray, Gábor Rózsa

Széchenyi István University, Győr, Hungary

László T. Kóczy

Széchenyi István University, Győr, Hungary

Budapest University of Technology and Economics, Hungary

14:40 Design of a Simultaneous Active Localization, Mapping and Navigation Algorithm

András Androvic

15:00 – 15:20 COFFEE BREAK

15:20 – 17:20 AFTERNOON SESSION II

Room F09

Session Chair: ***Stefan Preidl***

University "Politehnica" of Timisoara, Romania

15:20 Learning Methods for Similarity Handling in Phonebook-centric Social Networks

Péter Ekler

Budapest University of Technology and Economics, Hungary

Tamás Lukovszki

Eötvös Loránd University, Hungary

15:40 *Mathematica* Parallel Computing. Some Timing Results on a Intel Nehalem Multicore Processor

Béla Paláncz, Levente Kovács

Budapest University of Technology and Economics, Hungary

16:00 A Comparison Framework for Clustering Algorithms

Ferenc Kovács, Zoltán Dávid and Renáta Iváncsy

Budapest University of Technology and Economics, Hungary

16:20 Generating (Fuzzy) Frequent Itemsets by a Bitmap-based Algorithm – the Word's Most Compact Frequent Itemset Miner

János Abonyi

University of Pannonia, Hungary

16:40 Neural Network-based Friction Identification in Hydraulic Actuators

Lőrinc Márton, Szabolcs Fodor

Sapientia Hungarian University of Transylvania, Romania

17:00 A Scalable Bluetooth Scatternet Formed by Autonomous Mobile Robots and Cell Phones

Tamás Kovács*, Attila Pásztor*, Zoltán Istenes**

*Kecskemét College, Hungary

**Eötvös Loránd University, Hungary

16:00 – 17:20 SPECIAL SESSION ON 3D INTERNET FOR ROBOTICS Room F08

Session Chairs: ***Péter Baranyi and Péter Korondi***

Budapest University of Technology and Economics, Hungary

16:00 Image-based Automatic Object Localisation in iSpace Environment

Péter Zanaty¹, Péter Korondi^{2,3}, Gábor Sziebig¹, László A. Jeni⁴

¹Narvik University College, Norway

²Budapest University of Technology and Economics, Hungary

³Computer and Automation Research Institute, Hungary

⁴The University of Tokyo, Japan

16:20 ICE Extension of RT-Middleware Framework

Zoltán Krizsán

University of Miskolc, Hungary

16:40 Human Body Measuring and 3D Modelling

Péter Tamás, Marianna Halász

Budapest University of Technology and Economics, Hungary

17:00 Reduced Rule Base in Fuzzy Rule Interpolation-based Q-learning

Dávid Vincze, Szilveszter Kovács

University of Miskolc, Hungary

17:30 BANQUET

November 14, 2009, Saturday

Budapest Tech
Bécsi út 96/B, H-1034 Budapest, Hungary

8:20 – 10:20 MORNING SESSION I Room F09

Session Chair: *János Botzheim*
Széchenyi István University, Hungary

8:20 New and Classical Definitions for Products in PLM Models

László Horváth, Imre J. Rudas

Budapest Tech, Hungary

8:40 Out-of Core Processing in Preparation Phase of Data Mining Tasks

Tamás Schrádi, Sándor Juhász

Budapest University of Technology and Economics, Hungary

9:00 Improving Designer-Developer Workflow for Better User Experience

Dániel Dávid Nagy, Bence Kóvári

Budapest University of Technology and Economics, Hungary

9:20 Novel Models and Algorithms for Queue Limit Modeling

Ágnes Bogárdi-Mészöly, András Rövid**, Tihamér Levendovszky****

*Budapest University of Technology and Economics, Hungary

**Budapest Tech Polytechnical Institution, Hungary

***Vanderbilt University, USA

9:40 Spatial and Frequency Domain Comparison of Interpolation Techniques in Digital Image Processing

Miklós Póth, Tibor Szakáll

Subotica Tech, Serbia

10:00 Implicit Function Reconstruction in the Errors-in-Variables Context

Levente Hunyadi

Budapest University of Technology and Economics, Hungary

10:20 – 10:40 COFFEE BREAK

10:40 – 12:20 MORNING SESSION II Room F09

Session Chair: *Szilveszter Kovács*
University of Miskolc, Hungary

10:40 Schema Matchers' Performance Improvement

Balázs Villányi, Péter Martinek

Budapest University of Technology and Economics, Hungary

11:00 Model-based Algorithm for Statistical Intrusion Detection

Petar Čisar

Telekom Srbija, Subotica, Serbia

Sanja Maravić Čisar

Subotica Tech, Serbia

11:20 Hardwer-in-the-Loop Testing of an Electrohydraulic Servo System

Attila Kóvári

College of Dunaújváros, Hungary

11:40 On the Structure of Finite Involutive Uninorm Chains

Sándor Jenei

University of Pécs, Hungary

12:00 Some illustrations of possibilistic correlation

Robert Fullér

IAMSR, Åbo Akademi University, Turku, Finland

József Mezei

Turku Centre for Computer Science, Finland

Péter Várlaki

Budapest University of Technology and Economics, and Széchenyi István University, Hungary

12:30 CLOSING CEREMONY

Closing speech by ***János Fodor***

12:45 LUNCH / FAREWELL

POSTER SESSION

RoboCup a Worldwide Research and Educational Project on the Intelligent Autonomous Mobile Robots

Ágnes B. Simon, Attila Szazvai

College of Nyíregyháza, Hungary

Distant Monitoring and Control for Mobile Robots Using Wireless Sensor Network

**** Simon János , ** Goran Martinović***

**** Subotica Tech, Serbia***

***** J.J. Strossmayer University of Osijek, Serbia***

Self-Adaptive Product Configurator for Thermal Insulation

Igor Fürstner

Subotica Tech, Serbia

Zoran Anišić

Subotica Tech, Serbia

The Bureaucratic Organization in Enterprises under Crisis Conditions

¹Eva Pataki, ²Andras Sagi

¹Subotica Tech, Serbia

²Faculty of Economics, Subotica, Serbia

Consumer Behaviour and Asymmetric Information Theory

Andras Sagi¹, Eva Pataki²

¹ Faculty of Economics Subotica, Serbia

² Subotica Tech, Serbia

Functional Paradigm in Embedded Systems

Anita Szabó¹, Norbert Sram²

¹Subotica Tech, Serbia

²Inovacioni Centar D.O.O., Subotica, Serbia

Measuring the Preferred Learning Style: Case Study

Robert Pintér, Sanja Maravić Čisar

Subotica Tech, Serbia

A Lower Limit for the Probability of Success of Computing Tasks in a Grid

Christer Carlsson, Robert Fullér

IAMSR, Åbo Akademi University, Turku, Finland

József Mezei

Turku Centre for Computer Science, Finland

Implementation of a Mobile Measuring Station For the Purpose of Measuring and Controlling the Greenhouse Application

István Matijevics, Simon János***

* University of Szeged, Hungary

** Subotica Tech, Hungary

Special Session on Hungarian UAV Developers

Special Session organizer: *András Molnár*

UAV Airframe Development Using 3D Modeling Technology

Géza Bognár

Dennis Gabor Applied University, Hungary

László Ványa

Zrínyi Miklós National Defense University, Hungary

István Reé

Dennis Gabor Applied University

Heterogeneous Control of Small Size Unmanned Aerial Vehicles

Daniel Stojcsics

Budapest Tech, Hungary

Unmanned Aerial Vehicles in the Hungarian Defence Forces

László Kovács, László Ványa

Unmanned Aerial Systems for Supporting Decision Makers at Forest Fires

Ágoston Restás

Flight Control System of an Experimental Unmanned Quad-Rotor Helicopter

Antal Turóczy

Future Trends in UAS Avionics

Bálint Vanek

MTA SZTAKI, Hungary

UAV Development at BHE Bonn Hungary Ltd.

Gyula Mikó, Károly Kazi, János Solymosi, József Földes

Real Time Tracking of Aerobots

Ádám Léczfalvy

Budapest Tech, Hungary