

8th International Symposium of Hungarian Researchers

on

**COMPUTATIONAL INTELLIGENCE
and INFORMATICS**

PROGRAM

Magyar Kutatók 8. Nemzetközi Szimpóziuma

2007
NOVEMBER 15-17
BUDAPEST

VENUE

The Symposium will be held at Budapest Tech
Rooms F8 and F9
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 the 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

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November 15, 2007, Thursday

- 14:00 - 14:45 OPENING CEREMONY** **Aula**
Chairman: *Imre J. Rudas*
Rector of Budapest Tech, Hungary
- 15:00 - 15:45 PLENARY SESSION I** **Room F09**
Session Chair: *Imre J. Rudas*
Budapest Tech, Hungary
Meeting New Techniques with Previous Methods in the Space Research
Antal K. Bejczy
USA
- 15:45 - 16:15 Coffee Break**
- 15:45 - 16:15 ANNUAL MEETING OF HUNGARIAN FUZZY ASSOCIATION** **Room F07**
- 16:15 - 16:45 PLENARY SESSION II** **Room F09**
Session Chair: *János Fodor*
Budapest Tech, Hungary
Vehicle Industry and Its Researches in the Past 25 Years in Hungary
László Palkovics
Hungarian Academy of Sciences
- 17:00 Reception given by the Rector of Budapest Tech**

November 16, 2007, Friday

Room F08

- 9:00 – 10:00 Special Session ‘Cognitive Informatics’**
Session Chairs: *Barna Reskó and Péter Baranyi*
- 9:00 3D Image Sensor based on Opto-Mechanical Filtering**
Barna Reskó
Budapest Tech, and Computer and Automation Research Institute of the Hungarian Academy of Sciences
Dávid Herbay, Péter Korondi
Budapest University of Technology and Economics, Hungary
Péter Baranyi
Computer and Automation Research Institute of the Hungarian Academy of Sciences
- 9:15 Observation of Human Activities in Intelligent Space Based on Spatial Memory**
Mihoko Niitsuma
University of Tokyo, Japan, JSPS Research fellow
Reka Sumire Mitsui, Péter Korondi
Budapest University of Technology and Economics, Hungary
Hideki Hashimoto
University of Tokyo, Japan
- 9:30 VFA-driven Hierarchical Temporal Memory Input for Object Categorization**
Ádám Csapó, Péter Baranyi
Budapest University of Technology and Economics, Hungary

- 9:45 – 10:00 Coffee break**
- 10:00 – 11:45 Morning Session**
Session Chair: **Imre J. Rudas**
 Budapest Tech, Hungary
- 10:00 Survey of Agents and Multiagent's Systems Approach to the Modelling, Management and Control of Production Systems**
Baltazár Frankovič, Ivana Budinská
 Slovak Academy of Sciences
- 10:15 Institute of Informatics, Slovak Academy of Sciences Recent Applications of Generalized Mathematical Analysis**
Endre Pap
 University of Novi Sad, Serbia
- 10:30 Decentralization from Marvin Minsky's Point of View**
Jozef Kelemen
 Silesian University, Opava, Czech Republic
- 10:45 Great Challenge in Building Intelligent Systems – Quo Vadis Intelligent Systems?**
Peter Sinčák
 Technical University of Košice, Slovakia
- 11:00 Some Applications of Possibilistic Mean Value, Variance, Covariance and Correlation**
Christer Carlsson
 Åbo Akademi University, Finland
Robert Fullér
 Eötvös Loránd University, Hungary
- 11:15 Several Case Studies Solved by Plausible Reasoning**
Claudiu Pozna
 University Transilvania of Brasov, Romania
- 11:30 Contribution to Multicriterial Classification of Spatial Data**
Jana Výrostková, Eva Ocelíková
 Technical University of Košice, Slovakia
- 11:45 – 13:15 Lunch**
- 13:15 – 14:30 Special Session 'Biomedical Engineering'**
Session Chair: **Zoltán Benyó**
 Budapest University of Technology and Economic, Hungary
- 13:15 Biomedical Engineering Education and Research in Hungary**
Zoltán Benyó
 Budapest University of Technology and Economics, Hungary
- 13:30 Boundary Element Method for Analyzing Fluid Movements in Network Profiles**
Adalbert Kovács
 University "Politehnica" of Timisoara, Romania
- 13:45 Sensor-Net for Monitoring Drivers' Vital Parameters**
István Bosznai, Levente Kovács, Gergely Fördős, Balázs Benyó, Zoltán Benyó
 Budapest University of Technology and Economics, Hungary
- 14:00 LPV Modeling of Type 1 Diabetes Mellitus**
Levente Kovács, Balázs Kulcsár
 Budapest University of Technology and Economics, Hungary
- 14:15 Near Field Communication Technology: Contactless Applications in Mobile Environment**
Balázs Benyó
 Budapest University of Technology and Economics, Széchenyi István University, Győr, Hungary
- 14:30 – 14:45 Coffee break**

14:45 – 16:30 Afternoon Session I

Session Chair: *Jozef Kelemen*

Silesian University, Opava, Czech Republic

14:45 On Migrative Triangular Norms

János Fodor, Imre J. Rudas

Budapest Tech, Hungary

15:00 Fuzzy Logic Supported Coloured Image Information Enhancement

Annamária R. Várkonyi-Kóczy, András Rövid

Budapest University of Technology and Economics, Hungary

15:15 Approximation and Interpolation Sum of Exponential Functions

József Dombi

University of Szeged, Hungary

15:30 Grooming-Enhanced Multicast in Multilayer Networks with Bacterial Evolutionary Algorithm

Péter Soproni

Budapest University of Technology and Economics, Hungary

János Botzheim

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

Tibor Cinkler

Budapest University of Technology and Economics, Hungary

László T. Kóczy

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

15:45 Cost Analysis of Classification Using CL and MM

László Kovács, Péter Barabás

University of Miskolc, Hungary

16:00 Evolutionary Strategy-based Feeding Profile Optimization of Fed-Batch Reactors

Tamás Varga, Ferenc Szeifert, János Abonyi

University of Pannonia, Veszprém, Hungary

16:15 Nonlinear Adjustment with Parameter Estimation via Computer Algebra

Béla Paláncz1, Levente Kovács

Budapest University of Technology and Economics, Hungary

16:30 – 16:45 Coffee Break

16:45 – 18:30 Afternoon Session II

Session Chair: *Annamária R. Várkonyi-Kóczy*

Budapest University of Technology and Economics, Hungary

16:45 The KITT's Initial Contribution to the Educational Activities at Budapest Tech

József K. Tar, László Náday, Katalin Lőrincz

Budapest Tech

Roland Kovács

Knorr-Bremse Vasúti Jármű Rendszerek Hungária Kft.

17:00 Finding Behaviour Patterns along Highways by Image Processing

Gyula Max

Budapest University of Technology and Economics, Hungary

17:15 Complete Multimedia Educational Program of a DC Servo System for Distant Learning

Gábor Sziebig

Budapest University of Technology and Economics, Hungary

Chen Hao

China University of Mining and Technology

Lóránt Nagy

Budapest Tech, Hungary

Péter Korondi

Budapest University of Technology and Economics, Hungary

- 17:30 Correlation Based Dynamic Time Warping**
Zoltán Bankó, János Abonyi
 University of Pannonia, Veszprém, Hungary
- 17:45 Heuristical Coding of String Transformations**
Tibor Répási, László Kovács
 University of Miskolc, Hungary
- 18:00 A General Purpose Model Visualization Environment**
Tamás Mészáros, Gergely Mezei, Hassan Charaf
 Budapest University of Technology and Economics, Hungary
- 18:15 Analysis of an Electronic Payment System Using Simulation**
Otto Poszet, Ovidiu Novac, Stefan Vári-Kakas
 University of Oradea, Romania

9:00 – 18:00 Poster Session

Aula

Polar-Cut-based Fuzzy Model for Petrophysical Properties Prediction
Zsolt Csaba Johanyák, Szilveszter Kovács
 University of Miskolc, Hungary

Production of Dioxins with Special Regard to Furnaces Using Renewable Energy
István Patkó, Zoltán Juvancz
 Budapest Tech, Hungary
Mária Szerletics Túri
 Hungarian Food Safety Institute

X-log Incident-Monitor System for Internal Control
Tibor Fellegi, Andrásné Kovács
 Budapest Tech, Hungary
István Pokó
 Hungary

18:30 Reception

November 17, 2007, Saturday

Room F08

9:00 – 10:45 Morning Session

Session Chair: *János Fodor*
 Budapest Tech, Hungary

9:00 Stochastic Approach to the Fuzzyfication of the Input Signal Quantities
Márta Takács
 Budapest Tech, Hungary
Károly Nagy
 Polytechnical Engineering College in Subotica, Serbia

9:15 Function Construction with Fuzzy Operators
József Dombi, József D. Dombi
 University of Szeged, Hungary

9:30 S-Shaped Fuzzy Flip-Flops
Rita Lovassy
 Budapest Tech, Hungary
László T. Kóczy
 Széchenyi István University, Győr, Budapest University of Technology and Economics, Hungary

- 9:45 Proximity Card-based Copy Management**
Zoltán Balogh, Andrásné Kovács, Rezső Nagy, László Csapó
 Budapest Tech, Hungary
Attila Hingyi
 Seacon Europe, Hungary
- 10:00 Evaluation, Implementation and Optimization of FIR Filter Algorithms for TMS320VC5510 DSP Processor**
Anita Szabó, Norbert Sram
 Polytechnical Engineering College Subotica, Serbia
- 10:15 Experimental Mobile Robot System Built Up from Industrial Components**
Péter Kucsera
 Budapest Tech, Hungary
- 10:30 Evaluation of Correlation the Wind Speed Measurements and Wind Turbine Characteristics**
Péter Kádár
 Budapest Tech, Hungary
- 10:45 – 11:00 Coffee break**
- 11:00 – 12:00 Special Session ‘Intelligent Control’**
Session Chair: *Zoltán Petres*
 Computer and Automation Research Institute, Hungary
- 11:00 Approximation and Complexity Trade-off by TP Model Transformation in Controller Design: a Case Study of the TORA System**
Zoltán Petres, Péter Baranyi
 Computer and Automation Research Institute, Hungary
- 11:15 Case Studies in Teaching Fuzzy and Advanced Control Strategies**
Stefan Preitl, Radu-Emil Precup
 “Politehnica” University of Timisoara, Romania
Zsuzsa Preitl
 “Politehnica” University of Timisoara, Romania, and Budapest University of Technology and Economics, Hungary
- 11:30 Digital Electronic Control of a Small Turbojet Engine MPM 20**
Rudolf Andoga, Ladislav Főző, Ladislav Madarász
 Technical University of Košice, Slovakia
- 11:45 TP Tool - a MATLAB Toolbox for TP Model Transformation**
Szabolcs Nagy, Zoltán Petres, Péter Baranyi
 Computer and Automation Research Institute, Hungary
- 12:00 – 13:00 Lunch**
- 13:00 – 14:30 Afternoon Session I**
Session Chair: *Péter Korondi*
 Budapest University of Technology and Economics, Hungary
- 13:00 Left-continuous T-norms – State of the Art**
Sándor Jenei
 University of Pécs, Hungary
- 13:15 Information Content Modeling-based Recognition of Change Chains in Product Models**
László Horváth, Imre J. Rudas
 Budapest Tech, Hungary
- 13:30 Mamdani-type Inference in Fuzzy Signature Based Rule Bases**
Katalin Tamás
 Budapest University of Technology and Economics, Hungary
László T. Kóczy
 Budapest University of Technology and Economics, Széchenyi István University, Győr, Hungary

- 13:45** **Object-Oriented Identifier Renaming Correction in Three-Way Merge**
László Agyal, László Lengyel, Hassan Charaf
 Budapest University of Technology and Economics, Hungary
- 14:00** **Marcov Models for Web Access Prediction**
Raluca Popa, Tihamér Levendovszky
 Budapest University of Technology and Economics, Hungary
- 14:15** **Calculating Web Service Interaction Using Extended BPEL Language**
Csaba Legány, Márk Kaszó, Tihamér Levendovszky
 Budapest University of Technology and Economics, Hungary
- 14:30 – 14:45** **Coffee break**
- 14:45 – 16:15** **Afternoon Session II**
Session Chair: *Peter Sinčák*
 Technical University of Košice, Slovakia
- 14:45** **Languages Generated by Context-Free and Type AB → BA Rules**
Benedek Nagy
 University of Debrecen, Hungary
- 15:00** **Architecture of an In-Memory Transformation Engine**
Tamás Vajk, Gergely Mezei, Hassan Charaf
 Budapest University of Technology and Economics, Hungary
- 15:15** **Modeling the User Interface of Mobile Devices with DSLs**
István Madari, László Lengyel, Tihamér Levendovszky
 Budapest University of Technology and Economics, Hungary
- 15:30** **Anaphora Resolution**
Katalin E. Lejtovicz, Zsolt T. Kardkovács
 Budapest University of Technology and Economics, Hungary
- 15:45** **Modeling Web Service Interaction Using Extended BPEL Language**
Márk Kaszó, Csaba Legány, Tihamér Levendovszky
 Budapest University of Technology and Economics, Hungary
- 16:00** **Termination Analysis of the Transformation UML to CSP**
Márk Asztalos, László Lengyel, Tihamér Levendovszky, Hassan Charaf
 Budapest University of Technology and Economics, Hungary
- 16:15 – 16:30** **Coffee Break**
- 16:30 – 18:00** **Afternoon Session III**
Session Chair: *László Horváth*
 Budapest Tech, Hungary
- 16:30** **Definitions and Measurement of Power Factor**
András Fehér, Zoltán Puklus
 Széchenyi István University, Győr, Hungary
- 16:45** **On the Problem of Creating an Active Awareness System for Humans in Robotic Workcell**
Olesya Ogorodnikova
 Budapest University of Technology and Economics, Hungary
- 17:00** **FORthSIGHT – an Aid for Visually Impaired People**
Zoltán Puklus, Attila Kürtösi
 Széchenyi István University, Győr, Hungary
- 17:15** **Convex Hull Approach for Minimum Zone Evaluation of Straightness and Flatness**
Gyula Hermann
 Budapest Tech, Hungary

- 17:30** **A New Software-based HAZOP Study Development Methodology**
György Baradits
SIL4S, Hungary
János Abonyi
University of Pannonia, Veszprém, Hungary
- 17:45** **Supporting Navigation in Large Document Corpora of Online Communities: a Case-Study on the Categorization of the English Wikipedia**
Viktor Gál, Domonkos Tikk
Budapest University of Technology and Economics, Hungary
György Biró
TextMiner Co.
- 18:00** **Closing Ceremony**
Closing speeches by
Imre J. Rudas and *Annamária R. Várkonyi-Kóczy*