

# ICCC 2009

## IEEE 7<sup>th</sup> International Conference on Computational Cybernetics

### General Information

#### Date and Place

The ICCC 2009 will take place on November 26-29, 2009, at Hotel Tryp Bellver in Palma de Mallorca, Spain.

#### Official Language

The official language of the conference is English. All presentations, including discussions and submissions, must be made in the official language. No translation will be provided.

#### Proceedings

Each accepted paper reaching us in time will be published in the Volume of CD Proceedings that will be distributed at the conference registration desk to everyone who has paid the registration fee.

#### Presentation

All the presentations can be made by using OHP or Power Point. 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. All conference rooms are 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 conference.

### ICCC 2009 Technical Program

November 26, 2009, Thursday

12:00 – 12:30 **Registration**

12:30 – 12:45 **Opening Ceremony**

12:45 – 13:30 **Plenary Session I**

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

**Signal and System Representations on Hyperbolic Groups: Beyond Rational Orthogonal Bases**

*Alexandros Soumelidis, József Bokor*  
Computer and Automation Research Institute Hungarian Academy of Sciences

*Ferenc Schipp*  
Eötvös Loránd University, Hungary

13:30 – 15:00 **Lunch**

15:00 – 15:45 **Plenary Session II**

**Session Chair:** *László Horváth*  
Budapest Tech, Hungary

**Application of Local Deformations in Adaptive Control - A Comparative Survey**

**József K. Tar**  
Budapest Tech, Hungary

**15:45 – 16:00 Coffee Break**

**16:00 – 17:00 Session Computational Intelligence and Energetics**

**Session Chair: Jozef Kelemen**  
Silesian University, Opava, Czech Republic

**16:00 Associative Aggregation Functions Representing Different Scale Types**

**János Fodor, Imre J. Rudas**  
Budapest Tech, Hungary

**16:20 Dijkstra Beats Genetic Algorithm: Integrating Uncomfortable Intersection-Turns to Subjectively Optimal Route Selection**

**Yasushi Kambayashi, Hidemi Yamachi, Yasuhiro Tsujimura**  
Nippon Institute of Technology, Japan

**Hisashi Yamamoto**  
Tokyo Metropolitan University, Japan

**16:40 A Recursive Change Point Estimate of the Wind Speed and Direction**

**Monir Azmani, Serge Reboul, Jean-Bernard Choquel, Mohammed Benjelloun**  
Univ Lille Nord de France

**12:00 – 17:00 Poster Session I**

**The MILES Military English Learning System Pilot Project**

**Andrea Tick**  
Budapest Business School, Hungary

**OWA Fuzzy Linking Histogram approach for Image Retrieval**

**Maryam Tayefeh Mahmoudi, Maedeh Beheshti, Caro Lucas, Fattaneh Taghiyareh**  
University of Tehran, Iran

**Flexible Course Definitions by using of Predefined Description of Elements**

**József Gáti, Gyula Kártyás**  
Budapest Tech, Hungary

**19:00 Welcome Reception**

November 27, 2009, Friday

**11:10 – 12:10 Session Economical and Mechanical Engineering**

**Session Chair: József K. Tar**  
Budapest Tech, Hungary

**11:10 Business Process Analysis of NFC-based Services**

**Balázs Benyó**  
Budapest University of Technology and Economics, Hungary

**11:30 A Note on Agents, Societies, and Creativity**

**Jozef Kelemen**  
Silesian University, Opava, Czech Republic and VSM College of Management, Bratislava, Slovak Republic

**11:50 Transistor-Level Test Calculation for CMOS Circuits**

**József Sziray**  
Széchenyi István University, Hungary

**12:10 – 12:30 Coffee Break**

**12:30 – 13:30 Session Vehicle Control**

**Session Chair:** *Balázs Benyó*  
Széchenyi István University, Hungary

**12:30 Simple Adaptive Dynamical Control of Vehicles Driven by Omnidirectional Wheels**

*József K. Tar\*, Imre J. Rudas\*, István Nagy\*, K. R. Kozłowski\*\*, J. A. Tenreiro Machado\*\*\**

\*Budapest Tech, Hungary

\*\*Poznan University of Technology, Poland

\*\*\*Institute of Engineering of Porto, Portugal

**12:50 A New Machine For Acquire Pavement Texture**

*João L. Vilaça, Jaime C. Fonseca, António M. Pinho, E. Freitas*

University of Minho, Portugal

**13:10 LPV Type Model of Deformational Force in Vehicle Collisions**

*István Á. Harmati\*, András Rövid\*\*, Péter Várlaki\*\*\**

\*Széchenyi István University, Hungary

\*\*Budapest Tech, Hungary

\*\*\*Budapest University of Technology and Economics, Hungary

**11:10 – 13:30 Poster Session II**

**Fuzzy Extension to P-Graph Based Workflow Models**

*József Tick*

Budapest Tech, Hungary

**Quality Control of a Light Metal Die Casting Process using Artificial Neural Networks**

*Matthias Becker*

University Hannover, Germany

**The Place of Agriculture in the Green National Accounts**

*Judit Beke Lisányi*

Budapest Business School, Hungary

**13:30 – 15:00 Lunch**

**15:00 – 16:00 Session Learning Algorithms and Communication**

**Session Chair:** *Radoslav Forgác*  
Slovak Academy of Sciences, Bratislava

**15:00 Bigradient Learning Algorithm for Dimension Reduction of Text Document Space**

*Lenka Skovajsová, Igor Mokriš*

Slovak Academy of Sciences, Bratislava, Slovak Republic

**15:20 "System Identification" and Hermeneutics for Long Run Series of Synchronicities in the Pauli-Jung Relationship**

*Péter Várlaki\*, József Bokor\*\* and Imre J. Rudas\*\*\**

\* Budapest University of Technology and Economics, Hungary

\*\* Computer and Automation Research Institute, Hungary

\*\*\* Budapest Tech, Budapest, Hungary

**15:40 On the Randomness in Learning**

*Joel Ratsaby*

Ariel University Center, Israel

**16:00 – 16:20 Coffee Break**

**16:20 – 17:20 Session Fuzzy and Neural Networks**

**Session Chair:** *Márta Takács*  
Budapest Tech, Hungary

**16:20 Algorithm for Pulse Coupled Neural Network Parameters Estimation**

**Radoslav Forgác, Igor Mokriš**

Institute of Informatics Slovak Academy of Sciences, Bratislava, Slovak Republic

**16:40 Multilevel Fuzzy Model for Risk Management**

**Márta Takács**

Budapest Tech, Hungary

**17:00 Digital Fuzzy Parametric Conjunctions for Hardware Implementation of Fuzzy Systems**

**Imre J. Rudas\*, Ildar Z. Batyrshin\*\*, A. Hernández Zavala\*\*\*, O. Camacho Nieto\*\*\* and L. Villa Vargas\*\*\***

\* Budapest Tech, Budapest, Hungary

\*\* Mexican Petroleum Institute, D.F., Mexico

\*\*\* Mexican Polytechnic Institute/Computer Research Centre, D.F., Mexico

**15:00 – 17:20 Poster Session III**

**ON THE WAY OF MECHATRONICS**

**Attila L. Bencsik**

Budapest Tech, Hungary

**Image Description by Hierarchical Prioritised Fuzzy Systems**

**Paulo Salgado\* and Paulo Garrido\*\***

\* CITAB - Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal

\*\* Universidade do Minho, Guimarães, Portugal

**The FPAA Realization of Analog Robust Electronic Circuit**

**György Györök**

Budapest Tech, Hungary

November 28, 2009, Saturday

**9:00 – 9:30 Coffee Break**

**9:30 – 10:50 Session Modeling**

**Session Chair: László Horváth**

Budapest Tech, Hungary

**9:30 On the Way towards Model for Background of Decisions on Engineering Objects in PLM**

**László Horváth\*, Imre J. Rudas\*, and Gerhard Hancke\*\***

\*Budapest Tech, John von Neumann faculty of Informatics

\*\*University of Pretoria, Department of Electrical, Electronic and Computer Engineering

**9:50 Constrained Model Predictive Control Implementation in an Industrial Drying Process**

**Alexander Schuster, Martin Kozek**

Vienna University of Technology, Vienna, Austria

**10:10 Mathematical modeling of radial compressor of a turbojet engine**

**Ladislav Fözö, Rudolf Andoga, Ladislav Madarász, Marián Bucko**

Technical University of Košice, Slovakia

**10:30 Number Archetypes, Symbolic Coding Letters and “Background Communication Theory” in Saint Stephen’s Royal Mirror**

**Péter Várlaki\* and József Bokor\*\***

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

\*\* Computer and Automation Research Institute, Hungarian Academy of Sciences, Budapest, Hungary

**10:50 Closing Ceremony**

Closing speech by **János Fodor**, ICCG 2009 General Chair