General Information

Venue
The 5th International SOFA Workshop will be held at the Secretariat of the Regional Committees of the Hungarian Academy of Sciences (Szegedi Akadémmiai Bizottság – SZAB) – 6720 Szeged, Somogyi u. 7.

Language
The official language of the workshop is English.

Registration Desk
The registration desk will be open during the whole event.

Presentations
Presentations can be made using data projectors. All authors are kindly asked to upload their presentation from a USB stick to the computer in the conference room during the breaks. Presenters should rather not use their own computers.

Posters
The size of the posters is expected to be 70 (width) x 110 (high) cm. The posters will be on display during the whole meeting. Authors are requested to set up their work on the 22nd before Lunch and to take it down on the 24th before Lunch. Discussions concerning the posters will be held during coffee breaks.

Best Student Paper Competition
All the papers submitted as student papers will participate in the Best Student Paper Competition. A committee will be evaluating them during the workshop. The award will be given after the last session on the 24th of August.

Internet
There will be free Internet facilities for the workshop participants at the meeting venue.

Lunches
Each registered participant is welcomed to lunch at the Alabardos Restaurant. Visitors can also go to lunch at the Alabardos Restaurant for an extra fee of 5 EUR/lunch. Visitors should announce at the registration desk that they would like to purchase a lunch ticket.

Social programs
Welcome Cocktail at the Secretariat of the Regional Committees of the Hungarian Academy of Sciences – 22 August evening.
Workshop Dinner at the Sótartó Restaurant – 23 August evening (Student fees do not include Conference Dinner – students can purchase a conference dinner ticket for 25 EUR/person).

Insurance
The Organizers of the Workshop do not provide insurance and do not take responsibility for any loss, accident or illness that might occur during the Workshop or in the course of travel to or from the meeting site. It is, therefore, the responsibility of the participants to check their coverage with their insurance provider.

Parking
Parking is available in front of the building of the Regional Committees of the Hungarian Academy of Sciences. Parking tickets cost about 7-8 EUR/day.

Voltage
The electricity supply is 230 V AC (50 Hz).
Program

Wednesday, August 22

8:00  REGISTRATION – SZAB, Szeged (Somogyi u. 7.)
8:45  OPENING

9:00 – 10:00  KEYNOTE INVITED TALK
Lotfi Zadeh, Outline of a Restriction-centered Theory of Reasoning and Computation (Video tape lecture)

10:00 – 11:00  KEYNOTE INVITED TALK
Michio Sugeno, On Structure of Uncertainties
Chair: Valentina E. Bălaş

11:00 – 11:20  Coffee break

11:20 – 12:40  METHODS AND APPLICATIONS IN ELECTRONICS
Chair: Marius M. Bălaş
Optimization of the Binary Adder Architectures Implemented in ASICs and FPGAs
Bojan Jovanović, Milun Jevtić
Memristor-Based Phase-Lead Controller Circuit Design
Tsung-Chih Lin, Wei-Nan Liao, Valentina E. Bălaş
CMOS-Integrated Temperature Relay Based on Widlar Mirror
M. A. Ciugudean, Marius Bălaş
A FPGA Floating Point Interpolator
M. M. Bălaş, M. Socaci, Onisifor Olaru

12:40 – 13:40  SOFT COMPUTING AND FUSION ALGORITHMS IN BIOMETRICS
Chair: António E. Ruano
The Biometric Menagerie – A Fuzzy and Inconsistent Concept
N. Popescu-Bodorin, Valentina Bălaş, I.M. Moţoc
A Multi-algorithmic Colour Iris Recognition System
Petru Radu, K. Sirlantzis, G. Howells, S. Hoque, F. Deravi
Examples of Artificial Perceptions in Optical Character Recognition and Iris Recognition

Cristina Mădălina Noaica, R. Badea, I.M. Moțoc, C.G. Ghica, A.C. Rosoiu, N. Popescu-Bodorin

Noise Influence on the Fuzzy-Linguistic Partitioning of Iris Code Space

I. M. Moțoc, C. M. Noaica, R. Badea, C.G. Ghica

13:40 – 14:40  Lunch

14:40 – 16:20  **FUZZY THEORY AND FUZZY CONTROL**

Chair: **Dragan Radojević**

Excluded middle and graduation

Dragan Radojević

Models for Ranking Students: Selecting Applicants for a Master of Science Studies

Pavle Milošević, Ivan Nešić, Ana Poledica, Dragan Radojević, Bratislav Petrović

Modeling Candlestick Patterns with Interpolative Boolean Algebra for Investment Decision Making

Ivan Nesci, Pavle Milosevic, Aleksandar Rakicevic, Bratislav Petrovic, Dragan Radojević

Using Fuzzy Logic to determine if the traffic is constant or not in DTF Method

Emanuel Ciprian Sasu, Octavian Proștean

Experimental application of a pragmatic method to design control strategy for low power wind energy conversion system

Radu Boraci, Cristian Vasar

16:20 – 16:40  Coffee Break
16:40 – 18:20  **METHODS AND TOOLS FOR MODELLING AND APPLICATIONS**

*Chair: Octavian Proștean*

Model Predictive Control for inside temperature of an energy efficient building

*Cosmin Koch-Ciobotaru*

Optimization of the Power Transfer Control Between the Ports of a Double Bridge DC – DC Power Converter Type Gyrator

*Ildikó Tatai, Marian Greconici*

Maximization of the Energy and Flattening of Fluctuations for the Power Generated into the Network at a Wind Drived Electro Energetic System

*Ovidiu Gana, O. Proștean, M. Babescu*

A Brief Outline of Computational Limitations on Actual Wireless Sensor Networks

*Gabriel Girban, Mircea Popa*

The Quality of Following the Welding Path With Arc Sensors

*Gheorghe Sima*

---

18:30 – 20:00  **WELCOME RECEPTION** (SZAB ground floor)
Thursday, 23 August

9:00 – 11:00  KEYNOTE INVITED TALKS
*Chair:* József Domí

**Michał Baczynski,** On the Applications of Fuzzy Implication Functions

**László B. Kish,** Information Theoretic Security by the Laws of Classical Physics

*R. Mingesz, L. B. Kish, Z. Gingl, C. G. Granqvist, H. Wen, F. Peper, T. Eubanks, G. Schmera*

11:00 – 11:20  Coffee Break

11:20 – 12:40  KNOWLEDGE-BASED TECHNOLOGIES FOR WEB APPLICATIONS, CLOUD COMPUTING AND SECURITY ALGORITHMS I
*Chair:* Íñigo Monedero

Achieving Semantic Integration of Medical Knowledge for Clinical Decision Support Systems

*Daniel Dragu, V. Gomoi, and V. Stoicu-Tivadar*

Similarity Measurement of Web Sites

*Popescu Doru Anastasiu, Dragos Nicolae*

Transmission of Unsolicited E-mails with Hidden Sender Identity

*Ioan Virag, Antoanela Luciana Naaji, Marius Popescu*

The Evaluation of the Detected Distributed Denial of Service (DDoS) Attacks in Eucalyptus Private Cloud

*Alina Mădălina Lonea, Daniela Elena Popescu, Octavian Proștean, Huaglory Tianfield*

12:40 – 14:00  Lunch

14:00 – 15:00  KNOWLEDGE-BASED TECHNOLOGIES FOR WEB APPLICATIONS, CLOUD COMPUTING AND SECURITY ALGORITHMS II
*Chair:* Daniela Elena Popescu

Private Cloud Set Up Using Eucalyptus open source

*Alina Mădălina Lonea,*

Mathematical Model and Formalization for DTF Method

*Emanuel Ciprian Sasu*

Contribution to Watermarking Techniques

*Crina Anina Rațiu, D. Bucerzan, M. Crăciun*
15:00 – 15:50  **PLENARY TALK**  
*János C. Fodor*, Information Aggregation in Intelligent Systems  
*János C. Fodor and Imre J. Rudas*  
**Chair:** Maria G. Ruano

15:50 – 16:20  *Coffee Break*

16:20 – 17:40  **BIOMEDICAL APPLICATIONS**  
**Chair:** Mihaela Costin  
Characterization of Temperature-Dependent Echo-Shifts and Backscattered Energy Induced by Thermal Ultrasound  
*Maria Ruano, César A. Teixeira, Javid J. Rahmati*  
On the use of Artificial Neural Networks for Biomedical Applications  
*Maria Ruano, António E. Ruano*  
Optic Disc Localization in Retinal Images  
*Silviu Ioan Bejinariu, Florin Rotaru, Cristina Diana Niţă, Mihaela Costin*  
Parallel Multiclass Support Vector Interpretation of Haemodynamic Parameters for Manifestation of Aortic and Arterial Occlusive Diseases  
*Sunil Karamchandani, V. K. Madan, P. M. Kelkar, S. N. Merchant, U. B. Desai*

17:40 – 19:00  **NEURAL NETWORKS AND APPLICATIONS**  
**Chair:** Annamaria R. Várkonyi-Kóczy  
An Expert System to Improve the Energy Efficiency of the Reaction Zone of a Petrochemical Plant  
*Iñigo Monedero, Félix Biscarri, Carlos León, Juan Ignacio Guerrero*  
Estimation Aspects of Signal Spectral Components using Neural Networks  
*Viorel Nicolau, Mihaela Andrei*  
On-line Operation of an Intelligent Seismic Detector  
*Guilherme Madureira, António E. Ruano, M. Graça Ruano*  
Exploiting the Functional Training Approach in Takagi-Sugeno Neuro-Fuzzy Systems  
*Cristiano L. Cabrita, António E. Ruano, Pedro M. Ferreira, László T. Kóczy*

19:15  **Departure for Dinner** (5 minutes walk) – meeting in front of the SZAB building
Friday, 24 August

8:30 – 9:30  KEYNOTE INVITED TALK
Kay Chen Tan, Advances in Evolutionary Multi-objective Optimization
Chair: Valentina E. Bălaș

9:30 – 11:10  IMAGE PROCESSING
Chair: Viorel Nicolau
Reconstruction of Binary Images Represented on Equilateral Triangular Grid Using Evolutionary Algorithms
Elisa Moisi, Vladimir Ioan Crețu, Benedek Nagy
Morphological Wavelets for Panchromatic and Multispectral Image Fusion
Silviu Ioan Bejinariu, Florin Rotaru, Cristina Diana Niță
Image Categorization Based on Computationally Economic Lab Colour Features
Adrian Ciobanu, Mihaela Costin, Tudor Barbu
Some Results on Ultrasonic Image Generation with Biomimetic Sonar Head and Focused Narrow Beams
Dorel Aiordăchioae, Laurențiu Frangu
Using License Plates Recognition for Automate Cruise Control
Marius Bălaș, N. A. Chira, S. A. Matisan, F. M. Suciu

11:10 – 11:30  Coffee break

11:30 – 12:20  PLENARY TALK
Annamaria R. Várkonyi-Kóczy, Neural Network Applications Using an Improved Performance Training Algorithm
Chair: János C. Fodor

12:20 – 14:00  BUSSINESS PROCESS MANAGEMENT
Chair: Gabriela Proștean
Analysis of the Bankruptcy Prediction Model in the Present Economic Situation
Crina Anina Rațiu, D. Bucerzan, M. Crăciun
Monitoring Help Desk Process Using KPI
Diana Betina Mirsu
Optimizing E-Business Using Learning-based Systems
Sorin Stroe, Irina-Steliana Stan
The Efficiency in Time And Financial Resources Management of an Individual by Developing an Informatics Support
Șerban Popa, Gabriela Proștean

Planning Business Process Management Implementation by a Human Resources Development Support Initiative
Cristian Olariu, Alexandru Canda, Anca Draghici, Tomislav Rozman

14:00 Lunch (during Lunch: closing and best student paper award)
POSTERS

Linguistic Hedges Fuzzy Feature Selection for Differential Diagnosis of Erythematous-Squamous Diseases

Ahmad Taher Azar, Shaimaa A. El-Said, Valentina E. Balas, Teodora Olariu

Design an Optimal Fuzzy PID Controller for Herbal Machine Harvester with Gripping-Belt Speed

Behnam Yavari, Seyed Hamidreza Abbasi, Faridoon Shabaninia

Android Personal Digital Life Software Agent

Amna Altaf, F. Khan

Automated Sleep Staging using Detrended Fluctuation Analysis of Sleep EEG

Amr Fawzy, Shereen M. El-Metwally, Ahmed Abdel Aal Morsy

Dynamic Modeling and Control of a Multi-Fingered Robot Hand for Grasping Task

Rim Boughdiri, Hala Bezine, Nacer K. M’Sirdib, Aziz Naamaneb, Adel M. Alimi

Automatic Classification of Liver Diseases from Ultrasound Images Using GLRLM Texture Features

Raghesh Krishnan, R. Sudhakar

Comparative Study between Tank’s Water Level Control Using PID and Fuzzy Logic Controller

Davood Mohammadi Souran, Seyyed Hamidreza Abbasi, Feridoon Shabaninia

Design of MIMO Mamdani Fuzzy Logic Controllers For Wall Following Mobile Robot

Nasim Paykari, Faridoon Shabaninia, Seyed Hamidreza Abbasi

Incidents management process improvement of IT systems

Gabriela Proștean, Diana Betina Mirsu, Anca Drăghici

Models for Sharing Resources in Agile Project Management

Adrian Adam, Gabriela Proștean

A Multicriteria Approach in the Selection of a SAP UI Technology

Adela Diana Berdie, M. Osaci, N. Budișan

Studies on Efficientisation of the Data Access By ABAP Programming

M. Osaci, Adela Diana Berdie, A. D. Hammes

Modeling of the Electric Arc Behavior of the Electric Arc Furnace

Manuela Panoiu, Caius Panoiu, Loredana Ghiormez

The Comparative Analysis of the Innovation Level for the Entrepreneurial Education

Matei Tămășilă, Ilie Mihai Tăucean

Live Steam Temperature Control Loop 1035 t/h Benson Boiler

Onisifor Olaru, Marius Bizga