



INES 2010

**14th International Conference
on
Intelligent Engineering Systems**

FINAL PROGRAM

May 5-7, 2010
Las Palmas of Gran Canaria, Spain

<http://www.ines-conf.org>

General Information

Date and Place

INES 2010 will take place on May 5-7, 2010, in Elder Museum in Las Palmas of Gran Canaria, Canary Islands, 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 CD proceedings, and it will be distributed at the registration desk.

Opening Hours of the Registration Desk

The registration desk will be open during the conference.

Presentation

Presentations can be made by using OHP or data projector. All authors are kindly asked to take their presentation on CD or USB. 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 during the sessions and social events.

INES 2010 TECHNICAL PROGRAM

May 5, 2010, Wednesday

8:00 – 12:00 REGISTRATION

10:00 – 10:30 OPENING CEREMONY

Rector of ULPGC

Politicians of Gran Canaria

INES 2010 Chairmen

10:30 – 11:10 PLENARY SESSION I

Chair: *Carmen Paz Suarez Araujo*

Evolving, Training and Designing Neural Network Ensembles

Xin Yao

University of Birmingham, UK

11:10 – 11:30 COFFEE BREAK

11:30 – 13:10 SESSION Genetic Algorithms

Chair: *Jozef Kelemen*

11:30 **Some Characterizations of Representable Uninorms**

János Fodor

Óbuda University, Budapest, Hungary

11:50 **Analysis of the Dynamics of Allele Distribution for some Selected GA-variants**

Michael Affenzeller, Stefan Wagner, Stephan Winkler, Andreas Beham

School of Informatics, Communications and Media

Upper Austria University of Applied Sciences

12:10 **Portfolio Selection Based on Technical Trading Rules Optimized with a Genetic Algorithm**

J. F. Kotowski, E. Szlachcic, P. M. Wańtowski

Wroclaw University of Technology, Wroclaw, Poland

12:30 **Parallel Batch Pattern BP Training Algorithm of Recurrent Neural Network**

Volodymyr Turchenko, Lucio Grandinetti

University of Calabria, Italy

12:50 **Three Step Bacterial Memetic Algorithm**
L. Gál⁺, L. T. Kóczy^{+**}, R. Lovassy^{+***}*
⁺ Széchenyi István University, Győr, Hungary
^{*} University of West Hungary, Szombathely, Hungary
^{**} Budapest University of Technology and Economics, Hungary
^{***} Óbuda University Budapest, Hungary

11:30 – 13:10 **POSTER SESSION**

Self-organizing and Fault-tolerant Behaviors Approach in Bio-inspired Hardware Redundant Network Structures

Cs. Szász, V. Chindriș
Technical University of Cluj, Romania

Host-based Intrusion Detection System

L. Vokorokos, A. Baláz
Technical University of Košice, Slovak Republic

13:10 – 14:30 **BREAK**

14:30 – 16:10 **SESSION Human Knowledge**

Chair: *Michael Affenzeller*

14:30 **Emergence of Creativity in Man-Machine Systems – Three Examples from the Interactive Art**

J. Horáková, J. Kelemen***
^{*} Masaryk University, Brno, Czech Republic
^{**} Silesian University, Opava, Czech Republic, and VSM College of Management, Bratislava, Slovakia

14:50 **Smart Metering for Monitoring Domestic Utilities**

M. Popa, H. Ciocarlie, A. S. Popa, M. B. Racz
"POLITEHNICA" University Timisoara, Romania

15:10 **A New Pattern of Knowledge Based on Experimenting the Causality Relation**

C. Pozna, V. Prahovean**, R.-E. Precup****
^{*} Transilvania University of Brasov, Brasov, Romania
^{**} "Babes-Bolyai" University of Cluj Napoca, Romania
^{***} "Politehnica" University of Timisoara, Romania

15:30 **HUMANN-based Systems for Differential Diagnosis of Dementia using Neuropsychological Tests**

P. García Báez, C. Fernández Viadero**, M. A. Pérez del Pino***, A. Procházka****, C. P. Suárez Araujo****
^{*} Universidad de La Laguna. La Laguna, Spain
^{**} Hospital Psiquiátrico Parayas, Spain
^{***} Universidad de Las Palmas de Gran Canaria. Spain
^{****} Institute of Chemical Technology in Prague. Prague, Czech Republic

15:50 **New Content behind the Concept Intelligent Engineering**

László Horváth, Imre J. Rudas *, Gerhard Hancke ***
^{*} Óbuda University, Budapest, Hungary
^{**} University of Pretoria, South Africa

14:30 – 16:10 POSTER SESSION

Architecture of Distributed Intrusion Detection System Based on Anomalies

A. Baláz, J. Trelová, M. Kostráb

Technical University of Košice, Slovak Republic

Induction Motor Control Using Genetic Algorithms and Graphic-Analytical Methods

M. I. Toderici, Simona N. Toderici, Maria Imecs

Technical University of Cluj, Romania

16:10 – 16:30 COFFEE BREAK

16:30 – 17:50 SESSION Mathematics and Algorithms

Chair: *Patricio García Báez*

16:30 **Effective Computing by Interval-Values**

Benedek Nagy

University of Debrecen, Hungary

16:50 **Computational Complexity in Logic Testing**

József Sziray

Széchenyi University, Győr, Hungary

17:10 **Antenna Beamwidth Control for Improving Signal-to-Noise Ratio in Wireless Sensor Networks**

K. Staniec, G. Debita

Wroclaw University of Technology, Poland

17:30 **A Comparative Analysis of Different Infection Strategies of Bacterial Memetic Algorithms**

Márk Farkas, Péter Földesi, János Botzheim, László T. Kóczy

16:30 – 17:50 POSTER SESSION

Soft Computing-based Signal Processing Approaches for Supporting Modeling and Control of Engineering Systems – A Case Study

Teréz A. Várkonyi

Eötvös Loránd University, Budapest, Hungary

New Aspects in Modeling of Internet-based Courses for Engineers

József Gáti, Gyula Kártyás

Óbuda University, Budapest, Hungary

An Intelligent Approach for Improved Predictive Control of Spray Drying Process

A. Azadeh¹, N. Neshat², M. Saberi¹

¹ University of Tehran, Iran

² Sharif University of Technology, Tehran, Iran

18:15 **Movie: 3D Film**
Wild Oceans

19:00 – **WELCOME RECEPTION**

May 6, 2010, Thursday

9:00 – 9:45 PLENARY SESSION II

Chair: *János Fodor*

On a Consistent Fuzzy Operator System

József Dombi
University of Szeged, Hungary

9:50 – 11:10 SESSION Security Technology and Multi-Objective Systems

Chair: *László Horváth*

9:50 Security Issues of Service Installation on a Multi Application NFC Environment

B. Benyó, B. Sódor, L. Kovács, J. Homlok, G. Fördös
Budapest University of Technology and Economics, Hungary

10:10 Towards Self-Organizing Maps based Computational Intelligent System for Denial of Service Attacks Detection

M. A. Pérez del Pino, P. García Báez**, P. Fernández López*, C. P. Suárez Araújo**
* Universidad de Las Palmas de Gran Canaria
** Universidad de La Laguna. España

10:30 People Detection and Stereoscopic Analysis Using MAS

S. Rodríguez, O. Gil, F. de la Prieta, C. Zato, J. M. Corchado, P. Vega, M. Francisco
University of Salamanca, Spain

10:50 Differential Evolution for Multi-Objective Optimization with Self Adaptation

A. Cichoń, E. Szlachcic, J. F. Kotowski
Wroclaw University of Technology, Wroclaw, Poland

9:50 – 11:10 POSTER SESSION

A New Path Generation Method for Autonomous In-Door and Out-door Robots

Annamária R. Várkonyi-Kóczy, Attila L. Bencsik
Óbuda University, Budapest, Hungary

Construction of a Corporative Information System for an Electric Power Company

Manuel Mejía-Lavalle, Gustavo Arroyo-Figueroa
Instituto de Investigaciones Eléctricas, Cuernavaca, Morelos, México

11:10 – 11:30 COFFEE BREAK

11:30 – 13:10 SESSION Traffic Systems and Image Segmentation

Chair: *Ales Prochazka*

11:30 Influence of Particle Filter Parameters on Error Correction Accuracy in Traffic Surveillance Using Sensor Networks

Florica Naghiu, Dan Pescaru, Victor Gavrilă, Ionel Jian, Daniel Curiaç
Politehnica University of Timisoara, Romania

11:50 Model-based Analysis of Traffic Flow in Signalized Intersections

Katalin Kovács, József Homlok***
* Széchenyi István University, Győr, Hungary
** Budapest University of Technology and Economics, Hungary

- 12:10 A Solution Method for Solving I/O and O/D Tables**
András Bakó
 Széchenyi István and Óbuda University, Hungary
István Szűts
 Óbuda University, Budapest, Hungary
Péter Földesi
 Széchenyi István University, Győr, Hungary
- 12:30 Automatic Bioindicator Images Evaluation**
P. Slavíková, M. Mudrová, A. Procházka
 Institute of Chemical Technology, Prague, Czech Republic
- 12:50 Robust Identification of Persons by Lips Contour using Shape Transformation**
*Juan C. Briceño**, *Carlos M. Travieso***, *Jesús B. Alonso***, *Miguel A. Ferrer***
 * University of Costa Rica. San José. Costa Rica
 ** University of Las Palmas de Gran Canaria. Las Palmas de G. C. Spain

11:30 – 13:10 POSTER SESSION

Security Threats in Cognitive Radio Applications

Zenon Chaczko, Ruckshan Wickramasooriya
 University of Technology (UTS), Sydney, NSW, Australia
Ryszard Klempous, Jan Nikodem
 ICECRE, Wrocław University of Technology, Poland

Middleware Integration Model for Smart Hospital System Using the Open Group Architecture Framework (TOGAF)

Zenon Chaczko, Avtar S. Kohli
 University of Technology (UTS), Sydney, NSW, Australia
Ryszard Klempous, Jan Nikodem
 ICECRE, Wrocław University of Technology, Poland

13:10 – 14:30 BREAK

14:30 – 16:10 SESSION System Desing and Adaptive Control

Chair: *Claudiu Pozna*

- 14:30 Architecture Analysis and Optimization of Reconfigurable, Complex Systems**
Frank Lohse, Volker Zerbe, Thomas Luetzelberger
 Ilmenau University of Technology, Germany
- 14:50 Interactive Contour Deformation of an Object Using Graph Cut**
P. Karch, I. Zolotová
 Technical University, Košice, Slovakia
- 15:10 Replacement of Lyapunov's Direct Method in Model Reference Adaptive Control with Robust Fixed Point Transformations**
József K. Tar, János F. Bitó, Imre J. Rudas
 Óbuda University, Budapest, Hungary
- 15:30 Double-Field Orientation of Unity Power Factor Synchronous Motor Drive**
Cs. Szabo, Maria Imecs, I. I. Incze
 Technical University of Cluj-Napoca, Romania

15:50 **A Layered Architecture for Ad Hoc Networks of Mobile Embedded Systems**

M. Popa, A. S. Popa, H. Ciocarlie

“Politehnica” University Timisoara, Romania

14:30 – 16:10 **POSTER SESSION**

Constrained Optimal Direct Power Control of Voltage-Source PWM Rectifiers

András Kelemen, Nimród Kutasi*, Mária Imecs**, Ioan Iov Incze***

* Sapientia Hungarian University of Transylvania, Tîrgu Mureş, Romania

** Technical University of Cluj-Napoca, Romania

Hardware Implementation of the Reed-Solomon Decoder

J. Biernat, T. Serafin, W. Kulikowski

Wroclaw University of Technology, Poland

16:10 – 16:30 **COFFEE BREAK**

16:30 – 17:30 **SPECIAL SESSION**

Chair: *Péter Baranyi*

16:30 **Tensor Product Model Transformation Based Friction Compensation of a Mechatronic System**

Béla Takarics

Budapest University of Technology and Economics, Hungary

Péter Korondi, Péter Baranyi

Computer and Automation Research Institute, Budapest, Hungary

16:50 **Determination of the Stability Parameter Space of a Two Dimensional Aeroelastic System, a TP Model-based Approach**

Patricia Gróf, Péter Baranyi, Péter Korondi

Computer and Automation Research Institute,

Budapest University of Technology and Economics

17:10 **An Interaction-based Model for Auditory Substitution of Tactile Percepts**

Ádám B. Csapó

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

Péter Baranyi

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

17:30 – 18:00 **HUNOROB – Hungarian-Norwegian Robot Demonstration**

György Persa

The demonstration is about a software system named Virtual Robot Collaboration Arena (VIRCA). The goal of this software system is to allow a human user to interact and collaborate with distant, real robots and other intelligent agents by the means of the virtual world. The system integrates the advantages of a virtual environment, the information density of cognitive infocommunication channels, including 3D visual perception, and allows the combination of the precision and speed of AI with the high levels of human intelligence.

16:30 – 18:00 **POSTER SESSION**

Embedded Hybrid Controller with Programmable Analog Circuit

György Györök

Óbuda University, Székesfehérvár, Hungary

Autonomous Advertising Mobile Robot Development

E. Horváth, P. Kucsera

Óbuda University, Budapest, Hungary

20:00 - GALA DINNER

May 7, 2010, Friday

9:00 – 14:30 EXCURSION to Arucas

15:30 – 16:15 PLENARY SESSION III

Chair: *Ryszard Klempous*

New Trends in Optimization

Czeslaw Smutnicki

Wroclaw University of Technology

16:15 – 17:15 SESSION Modeling and 3D Visualization

Chair: *József Dombi*

16:15 Discrete Event Dynamic Systems Framework for Analysis and Modeling of Real Manufacturing System

J. Zelenka

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

16:35 Advanced Technology Benefits Evaluation: Expectations and Attained Experience

J. Hynek, V. Janeček

University of Hradec Králové, Czech Republic

16:55 3D Visualization the Results of Complicated Grid and Cloud-based Applications

Eva Pajorová, Ladislav Hluchý

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

16:15 – 17:15 POSTER SESSION

FPGA-based BLAST Prefiltering

*P. Laczkó^{*x}, B. Fehér^{*}, B. Benyó^{*}*

^{*} Budapest University of Technology and Economics

^x Evopro Ltd., Budapest, Hungary

Development of a CPLD-based Novel Open Loop Stepper Motor Controller for High Performance Using VHDL

Zoonubiya Ali^{}, R. V. Kshirsagar^{**}*

^{*} Disha Institute of Management and Technology, Raipur, India

^{**} Priyadarshini College of Eng. & Architecture, Nagpur, India

16:55 – 17:15 COFFEE BREAK

17:15 – 18:35 **SESSION Biomedicine**

Chair: *Balázs Benyó*

17:15 **WebService-based Solution for an Intelligent TeleCare System**

V. Stoicu-Tivadar, L. Stoicu-Tivadar, D. Berian, V. Topac
“Politehnica” University, Timișoara, Romania

17:35 **Multi-Channel EEG Signal Segmentation and Feature Extraction**

Aleš Procházka, Martina Mudrová*, Oldřich Vyšata**, Robert Háva*, Carmen Paz Suárez Araujo****

* Institute of Chemical Technology in Prague, Czech Republic

** Neurocenter Caregroup, Czech Republic

*** Universidad de Las Palmas de G.C., Spain

17:55 **A Simulation Study of Mechanisms of Group Selection of the Slime Mold Dictyostelium Discoideum**

Matthias Becker
University Hannover, Germany

18:15 **ANFIS Regulated type I diabetic model for different glucose absorption scenarios**

A. György, P. Szalay*, Z. Benyó*, B. Benyó*, A. Kovács**, L. Kovács**

* Budapest University of Technology and Economics, Hungary

** “Politehnica” University of Timisoara, Romania

17:15 – 18:35 **POSTER SESSION**

Analytic Model of MPM 20 Engine Depicted within Characteristics of its Compressor

L. Főző, R. Andoga, L. Madarász, T. Karol
Technical University of Košice, Slovakia

From Cognitive Binary Logic to Cognitive Intelligent Agents

N. Popescu-Bodorin, V. E. Balas***

* ‘Spiru Haret’ University, Bucharest, Romania

** ‘Aurel Vlaicu’ University, Arad, Romania

18:35 **CLOSING CEREMONY and Invitation to INES 2011**