INES 2009

**13th International Conference
on
Intelligent Engineering Systems**

FINAL PROGRAM

April 16-18, 2009
Barbados

http://www.ines-conf.org

General Information

Date and Place

INES 2009 will take place on April 16-18, 2009, at Hotel Southern Palms Beach Club in Barbados.

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 2009 TECHNICAL PROGRAM

April 16, 2009, Thursday

8:00 – 12:00 **REGISTRATION**

9:00 – 9:10 **OPENING CEREMONY**

Bogdan M. Wilamowski, INES 2009 General Co-Chair

László Horváth, József K. Tar, INES 2009 Technical Program Committee Chairs

9:10 – 9:45 **PLENARY SESSION I**

Chair: *Jozef Kelemen*

Advanced Learning Algorithms
Bogdan M. Wilamowski
Auburn University, Alabama, USA

9:45 – 10:20 **PLENARY SESSION II**

Chair: *József K. Tar*

A New Paradigm for Experience and Expertise in Intelligent Engineering Systems
László Horváth
Budapest Tech, Hungary

10:20 – 10:40 **COFFEE BREAK**

10:40 – 12:00 **SESSION Information Extraction and Software Systems**

Chair: *Péter Várlaki*

10:40 **Software Flexibility Improvement for Document Oriented Applications**
Vasile Stoicu-Tivadar, Lăcrămioara Stoicu-Tivadar
"Politehnica" University, Timişoara, Romania

11:00 **Method for Merging Multiple Exposure Color Image Data**
András Rövid*, Péter Várlaki**
*Budapest Tech, Budapest, Hungary
**Budapest University of Technology and Economics, Budapest, Hungary

11:20 **Improved Performance Models of Web-Based Software Systems**
Ágnes Bogárdi-Mészöly*, Tihamér Levendovszky*, Ágnes Szeghegyi**
*Budapest University of Technology and Economics, Budapest, Hungary
**Budapest Tech, Budapest, Hungary

11:40 **Coordinated Software Development: A Framework for Reasoning about Trace Links in Software Systems**
Arbi Ghazarian
University of Toronto, Canada

12:00 – 14:00 **LUNCH**

14:00 – 15:20 SESSION Control and Filtering

Chair: *Gyula Hermann*

14:00 **A Methodology of Synthesis of Lossy Ladder Filters**
Marcin Jagiela*, Bogdan M. Wilamowski**
* University of Information Technology and Management, Rzeszow, Poland
** Auburn University, Auburn, USA

14:20 **Adaptive VS/SM Controller based on Robust Fixed Point Transformations**
József K. Tar*, Imre J. Rudas*, János F. Bitó*, J. A. Tenreiro Machado**, Krzysztof R. Kozlowski***
*Budapest Tech, Budapest, Hungary
**Institute of Engineering, Porto, Portugal
***Poznan University of Technology, Poznan, Poland

14:40 **Methodology to Simplify the Tuning Process of Self-Organizing Fuzzy Logic Controllers**
Mohannad Murad, Ka C. Cheok, M. Das
Oakland University, Rochester Hills, MI, USA

15:00 **Controlling-Observing Interpretation of the Fine Structure Constant in Perspective of the Pauli-Jung "Correspondence"**
Péter Várlaki
Budapest University of Technology and Economics
László Nádai, József Bokor
Computer and Automation Research Institute
Hungarian Academy of Sciences
András Rövid
Budapest Tech Polytechnical Institution, Hungary

15:20 – 15:40 **COFFEE BREAK**

15:40 – 17:20 **SESSION Application-related Problem Solving**

Chair: *Matthias Becker*

15:40 **Modeling Derived from Bayesian Filtering: Analysis of Estimation Process**
Claudiu Pozna*, Radu-Emil Precup**
*University Transilvania of Brasov, Romania
**"Politehnica" University of Timişoara, Romania

16:00 **Retrofitting a Length Measuring Machine for Linear Scale Calibration**
Gyula Hermann*, György Benko**, Attila Nagy**
*Budapest Tech, Hungary
**NanoTech Ltd., Hungary

16:20 **Optimal Application Mapping on NoC Infrastructure using NSGA-II and MicroGA**
Marcus Vinícius Carvalho da Silva*, Nadia Nedjah*, Luiza de Macedo Mourelle**
* Department of Electronics Engineering and Telecommunications
** Department of System Engineering and Computation
State University of Rio de Janeiro, Brazil

16:40 **Design of a Linear Dielectric Elastomer Actuator of Conical Shape with Quasi-Constant Available Thrust**
Giovanni Berselli, Rocco Vertechy, Gabriele Vassura, Vincenzo Parenti Castelli

17:00 **A Programmable Flexible Simulation Environment for Discrete Many-Body Systems: VIDEOEASEL**
Sabina Jeschke*, Olivier Pfeiffer**, Thomas Richter*
* University of Stuttgart, Germany
** Technische Universität Berlin, Germany

18:00 – **WELCOME RECEPTION**

April 17, 2009, Friday

9:00 – 10:20   **SESSION Production and Manufacturing Systems**

Chair: *László Horváth*

9:00   **On the Design and Implementation of the Resource Holons in a PROSA based Architecture**
Doru Panescu, Gabriela Varvara, Carlos Pascal, Marius Sutu
Technical University of Iasi, Romania

9:20   **Problems of Advanced Manufacturing Technology Benefits Evaluation**
Josef Hynek, Vaclav Janecek
University of Hradec Králové, Czech Republic

9:40   **Business Process Models Supporting Participatory Layout Planning**
Uwe Dombrowski, Sibylle Hennersdorf
Technical University of Braunschweig, Germany

10:00   **Static Compensation for Wrist Mounted Force Torque Sensor**
Ricardo A. Tauro, Benedikt Kaiser, Hein Wörn

10:20 – 10:40   **COFFEE BREAK**

10:40 – 12:00   **SESSION Engineering Modeling**

Chair: *Ka C. Cheok*

10:40   **Tread Profile Optimization For Tires With Multiple Pitch Tracks**
Matthias Becker, Sebastian Jaschke, Helena Szczerbicka
Leibniz University Hannover, Germany

11:00   **Human Related Processes in Virtual Spaces for Problem Solving in Engineering**
László Horváth, Imre J. Rudas
Budapest Tech, Hungary

11:20   **On the Selection of a Platonic Solid for Mesh Segmentation**
Luis A. Diago, Maria Savchenko, Olga Egorova, Ichiro Hagiwara
Tokyo Institute of Technology, Japan

11:40   **Dual Field Orientation for Vector Controlled Cage Induction Motors**
Maria Imecs, Ioan Iov Incze, Csaba Szabó
Technical University of Cluj-Napoca, Romania

12:00 – 14:00   **LUNCH**

14:00 – 15:20   **SESSION Knowledge-based Problem Solving**

Chair: *Claudiu Pozna*

14:00   **Intelligent Coaching of Mobile Working Machine Operators**
Lauri Palmroth*, Kalevi Tervo**, Aki Putkonen***
* Tampere University of Technology, Finland
** Helsinki University of Technology, Espoo, Finland
*** John Deere Forestry, Advanced R&D, Tampere, Finland

14:20   **Special Network Algorithms with Gains**
András Bakó
Budapest Tech and Széchenyi István University, Hungary
István Szűts
Budapest Tech, Hungary
Tamás Hartványi
Széchenyi István University, Hungary

14:40   **INTCare: On-line Knowledge Discovery in the Intensive Care Unit**
Pedro Gago*, Carla Fernandes**, Filipe Pinto*, Manuel F. Santos***
* Escola Superior de Tecnologia e Gestão do Instituto Politécnico de Leiria, Portugal
** Universidad Pontificia de Salamanca, España
*** Departamento de Sistemas de Informação da Universidade do Minho, Portugal

15:00   **Extending Ontology Queries with Bayesian Network Reasoning**
Bellandi Andrea*, Turini Franco**
* IMT Institute for Advanced Studies, Lucca, Italy
** University of Pisa, Italy

15:20 – 15:40   **COFFEE BREAK**

15:40 – 17:20   **SESSION Knowledge Representation and Management**

<u>Chair</u>:   *András Rövid*

15:40   **From Knowledge Workers to Knowledge Managing Systems: An Exercise in Transferring Experience with Knowledge-Based Systems into Knowledge Management**
Jozef Kelemen
VSM College of Management, Bratislava, Slovakia
and
Silesian University, Opava, Czech Republic

16:00   **Redundant rules detection in EEG fuzzy classifier**
David Coufal
Institute of Computer Science AS CR, Prague, Czech Republic

16:20   **A Computational Model for Inference Chains in Expert Systems**
József Sziray
Széchenyi István University, Hungary

16:40   **ZigBee Controls the Household Appliances**
Péter Kádár
Budapest Tech, Hungary

17:00   **Marketing Database Knowledge Extraction – Towards a Domain Ontology**
Filipe Mota Pinto*, Pedro Gago*, Manuel Filipe Santos**
* Polytechnic Institute of Leiria, Portugal
** University of Minho, Guimarães, Portugal

17:20   **CLOSING CEREMONY**

Bogdan M. Wilamowski, INES 2009 General Co-Chair

19:00 -   **BANQUET**

POSTER SESSION

Some Possibilities for Structured and Associative Computer Descriptions in Course Programs
József Gáti, Gyula Kártyás
Budapest Tech, Budapest, Hungary

Supervisory Control System for a Fermentation Plant
G. H. Riad, A. H. Yousef, M. A. Sheirah
Ain Shams University, Cairo, Egypt

Methods and Means of the Computer-aided Design of Unmanned Aerial Vehicle Model
Aleksandrs Urbahs, Margarita Urbaha, Vladimirs Petrovs, Aleksandrs Jakovlevs
Riga Technical University, Latvia

Self-Healing and Fault-Tolerance Abilities Development in Embryonic Systems Implemented with FPGA-based Hardware
Csaba Szász, Virgil Chindris
Technical University of Cluj, Romania

The System of Career Promotion of Networking Professionals Based on Industrial Certificates
František Jakab*, Marian Bucko**, Igor Sivy**, Ladislav Madarász**, Pavel Cicák***
* Cisco Systems Slovakia
** Technical University in Košice, Slovakia
*** FIIT STU Bratislava, Slovakia

Research on the Traffic Flux Forecast Based on Fuzzy Linear Regression Model
Wei Wu, Zhang Yanan, Kang Zhang
South China University of Technology, Guangzhou, China

Intrusion Detection System Based on Partially Ordered Events and Patterns
Anton Baláž, Liberios Vokorokos
Technical University of Košice, Slovakia

A Hand Gesture Controlled Interface for Intelligent Space Applications
András A. Tóth, Annamária R. Várkonyi-Kóczy
Budapest University of Technologies and Economics, Hungary

Obstacle - Slope Avoidance and Velocity Control of Wheeled Mobile Robots using Fuzzy Reasoning
Gyula Mester
University of Szeged, Hungary

IEEE Article Data Extraction from Internet
Nam Pham, Bogdan M. Wilamowski
Auburn University, USA

C++ Implementation of Neural Networks Trainer
Hao Yu, Bogdan M. Wilamowski
Auburn University, USA

A Coordinated Urban Traffic Signal Control Approach based on Multi-Agent
Wei Wu, Gong Shufeng, Liu Hongxiu
South China University of Technology, Guangzhou, China

Conference Venue: Hotel Southern Palms Beach Club in Barbados

Southern Palms Beach Club has the elegance of a pink pearl. Its plantation-style buildings and tranquil gardens nestle next to an expansive white coral sand beach and the unbelievably turquoise ocean, one of the loveliest beaches in Barbados. Indeed, Southern Palms is truly a hideaway in soft focus – the perfect setting for a restful vacation.

The hallmark of Southern Palms Beach Club is peace; spacious, uncluttered vistas and staff who know the art of friendly, yet discreet service. Imagine yourself lounging int he warmth of the Caribbean sun with the murmur of softly foaming waves lapping ont he shore. Before long you will have unwound and stepped back in time, to the days when our lives were in tune with the rhythms of nature and people had time for one another. Whilst sipping on a delicious fruit punch or legendary Southern Palms Pina Colada, the telephones and traffic jams of your daily life will gently fade into the distance – you'll never want to leave!

When you are ready for action, Southern Palms Beach Club has tennis courts and its own mini-golf putting course, and is also an affiliated member of the nearby Barbados Golf Club with an eighteen hole championship course. There are two swimming pools, and the sparkling sea beckons beyond a stretch of fine white sand. For the more adventurous windsurfing and scuba lessons are offered, and the sports shop lends boogie boards.

The rooms at Southern Palms Beach Club are comfortable and air-conditioned, with tranquil views of the garden or ocean. All rooms have coffee and tea making facilities, refrigeratiors, hair dryers and satellite television. Suites with self-catering facilities are also available.

Have a nice time at Southern Palms Beach Club, the pink pearl of the Caribbean.