

INES 2008

12th International Conference
on
Intelligent Engineering Systems

PROCEEDINGS

February 25-29, 2008
Miami – Florida

Table of Contents

Welcome Message from the General Chair	7
Committees	8

Plenary Session

New Trends in Neural and Fuzzy Systems	9
<i>Bogdan M. Wilamowski</i>	
Application Oriented Intelligence Control: Survey and Future Perspectives	11
<i>Kaoru Hirota:</i>	

Control Applications

Boundary Control of a Vibrating FGM Rectangular Plate.....	13
<i>Hossein Rastgoftar, Mohammad Eghtesad, Alireza Khayatian, Hanif Rastgoftar</i>	
Boundary Control of Vibration Of General Composite Laminated Plate	19
<i>Hossein Rastgoftar, Mohammad Eghtesad, Alireza Khayatian</i>	
Analysis of the Fixed Point Transformation Based Adaptive Robot Control.....	24
<i>József K. Tar, Imre J. Rudas</i>	
Study of Internal Dynamics Stability and Regulation of Globular- Spray Mode of GMAW Process via MIMO Feedback-linearization Scheme	31
<i>Y. Bazargan-Lari, M. Eghtesad, B. Assadsangabi</i>	
Digital Electronic Control of a Small Turbojet Engine - MPM 20	37
<i>Rudolf Andoga, Ladislav Madarász, Ladislav Főző</i>	

Modeling and Analysis in Industrial Engineering

Hardware-software Codesing of Feature Tracking Algorithms.....	41
<i>P. Arató, G. Kocza, I. Loványi, L. Vajta</i>	
Content Orientated Identification of Changed Objects during the Definition of Product Representations.....	47
<i>László Horváth, Imre J. Rudas</i>	
Optimal Lot Streaming for FMS Scheduling of Flow-Shop Systems	53
<i>Ezedeem Kodeekha, János Somló</i>	
Design of a Calibration System for Measuring Probes.....	59
<i>Gyula Hermann</i>	
Wavelet Based Neural Network Solution for Forward Kinematics Problem of HEXA Parallel Robot.....	63
<i>M. Dehghani, M. Ahmadi, A. Khayatian, M. Eghtesad</i>	

Recent Applications of Modeling

Modeling Passive Greenhouses. The Sun's Influence.....	71
<i>Marius M. Balas, Valentina E. Balas</i>	
Passive Greenhouses and Ecological Reconstruction.....	77
<i>Valentina E. Balas, Marius M. Balas, Mircea V. Putin-Racovita</i>	
Number Archetypes in System Realization Theory Concerning the Fine Structure Constant	83
<i>P. Várlaki, L. Nádaí, J. Bokor</i>	
Stator-Field Oriented Control of the Synchronous Generator: Numerical Simulation	93
<i>Mária Imecs, Ioan Iov Incze, Csaba Szabó</i>	
Model Based Concept for Higher Education on the Way towards Highly Integrated Solutions in Computer Systems.....	99
<i>Stefan Preitl, Radu-Emil Precup, Gyula Kátyás, József Gáti</i>	

Neural Network Applications

Accelerated Evolutionary Algorithm with Second-order Enhancement.....	103
<i>Joel Hewlett, Bogdan M. Wilamowski, Okyay Kaynak</i>	
A Neural Network Implementation on an Inexpensive Eight Bit Microcontroller	109
<i>Nicholas J. Cotton, Bogdan M. Wilamowski, Günhan Dündar</i>	
On-Line Learning CMAC Control System.....	115
<i>Ming-Feng Yeh, Hung-Ching Lu</i>	
Application of a Hybrid Algorithm in the Modular Neural Nets Trainning with Multilayers Specialists in Electric Disturbance Classification	121
<i>R. M. Magalhaes, C. K. S. Santos, J. D. Melo, M. F. de Medeiros, A. D. Dória Neto</i>	
Computational Intelligence for HIV Modelling.....	127
<i>Brain Leke Betechuoh, Tshilidzi Marwala, Jabulile V. Manana</i>	
Fuzzy System with Increased Accuracy Suitable for FPGA Implementation	133
<i>Kannan Govindasamy, Sandeep Neeli, Bogdan M. Wilamowski</i>	

Information Technology in Engineering Practice

Fault Characteristic Extracting Based on PSO.....	139
<i>Hong-xia Pan, Jin-ying Huang, Hong-wei Mao, Zhen-wang Liu</i>	
Inverse Dynamics of Hexa Parallel Robot Using Lagrangian Dynamics Formulation	145
<i>Mahdi Ahmadi, Mehdi Dehghani, Mohammad Eghtesad, Ali Reza Khayatian</i>	
Software for Early Cancer Detection Using Microwave Breast Images.....	151
<i>M. Costin, O. Baltag, S. Bejinariu</i>	
Implementation of Modern Technologies in Military English Language Teaching	155
<i>Andrea Tick</i>	

The Present Situation of Hungarian Forest Based Industry	159
<i>Sándor Molnár</i>	
An Application of the N-Parameter Method to the Rotating Disc Problem.....	161
<i>József Dénes, István Patkó</i>	

Information Systems

Pattern Matching of Partially Ordered Events in Information Management Systems.....	169
<i>Liberios Vokorokos, Renáta Vokorokosová</i>	
A Robust Autonomic Computing Architecture for Server Virtualization.....	173
<i>Dan Ionescu, Bogdan Solomon, Marin Litoiu, Mircea Mihaescu</i>	
A Prediction of Number of Antennas in a MIMO Correlated Channel	181
<i>A. Jraifi, E. H. Saidi</i>	
Analyzing the Convergence of an Enhanced Performance Evaluation Algorithm	185
<i>Ágnes Bogárdi-Mészöly, Tihamér Levendovszky, Ágnes Szeghegyi</i>	
Automated Data Mining from Web Servers Using Perl Script.....	191
<i>Sandeep Neeli, Kannan Govindasamy, Bogdan M. Wilamowski, Aleksander Malinowski</i>	

3D Scanning and Image Analysis

HOSVD Based Method for Surface Data Approximation and Compression	197
<i>László Szeidl, Imre J. Rudas, András Rövid, Péter Várlaki</i>	
Face Recognition Using 3D Head Scan Data Based on Procrustes Distance	203
<i>Ahmed Mostayed, Sikyung Kim, Mohammad Mynuddin Gani Mazumder, Se Jin Park</i>	
Techniques of Analysing the Colour of Produces for Automatic Classification.....	209
<i>Marius Buzera, Voicu Groza, Gabriela Prostean, Octavian Prostean</i>	
Vision Based Measurement System for Supporting the Deformation Analysis.....	215
<i>András Rövid, Péter Várlaki, Takeshi Hashimoto</i>	
New Technologies in Medical Imaging: New Challenges in Picture Evaluation	221
<i>István Loványi, Gábor Pák, László Vajta</i>	
Three Dimensional (3D) Last Data Generation System Design Utilizing SFFD and LFFD.....	227
<i>Induk Park, Sikyung Kim, Mohammad Mynuddin Gani Mazumder, and Se Jin Park</i>	

Networks and Graphs in Engineering

An Optimal Quality Management Algorithm for Road Maintenance	233
<i>A. Bakó, K. Ambrus-Somogyi</i>	
General Untimed Sequential Automata Models for the General Components of Automatic Transport Systems with Accumulation Areas.....	237
<i>Dan Ungureanu-Anghel, Octavian Prostean, Dan Ionescu</i>	

Using Plausible Reasoning in Modular Robots Kinematics	243
<i>Claudiu Pozna, Radu-Emil Precup</i>	
P-graph based Workflow Synthesis	249
<i>József Tick, Zoltán Kovács</i>	
Dynamic Modeling of the Essential Oil Extraction Based On Artificial Neural Networks	255
<i>M. Dehghani, M. Mastali, F. Esmailzadeh, A. A. Safavi</i>	

Applications of Fuzzy Systems

Anytime Fuzzy Fast Fourier Transformation	263
<i>Annamária R. Várkonyi-Kóczy, Dániel T. Várkonyi</i>	
Fuzzy Solution for Non-linear Quality Models	269
<i>P. Földesi, L. T. Kóczy, J. Botzheim</i>	
Uninorm Operations on Type-2 Fuzzy Sets	277
<i>Márta Takács</i>	
Fuzzy Controller Design of Autonomy Overtaking System	281
<i>Jin-ying Huang, Hong-xia Pan, Xi-wang Yang, Jing-da Li</i>	
Stable Fuzzy Control Systems with Iterative Feedback Tuning	287
<i>R.-E. Precup, S. Preitl, P. A. Clep, I. B. Ursache, J. K. Tar, J. Fodor</i>	
Authors' Index	293