

2009 3rd International Workshop on Soft Computing Applications

(SOFA 2009)

**Szeged-Arad, Romania
29 July – 1 August 2009**



**IEEE Catalog Number: CFP0928D-PRT
ISBN: 978-1-4244-5055-8**

TABLE OF CONTENTS

Neurodynamic Optimization with its Application for Model Predictive Control	1
<i>Jun Wang</i>	
The 60 Years Old “Information Theory” and the Fuzzy Concept of Information.....	2
<i>Rudolf Seising</i>	
New Control Algorithm and Defuzzification	3
<i>József Dombi</i>	
Application of Paraconsistent Annotated Logic Program EVALPSN to Intelligent Control/Safety Verification.....	9
<i>Kazumi Nakamatsu</i>	
A Research Based Approach to Predictive Simulation in Disaster Management	10
<i>Pamela McCauley Bush, Maria Bull, Asly Soyler, Yanshen Zhu, Steven Diaz, Piti Kanjanapongpaisal</i>	
Fuzzy Communication and Cooperation of Mobile Robots	12
<i>László T. Kóczy, Aron Ballagi</i>	

SENSORS AND INTELLIGENT SYSTEMS

Probabilistic Model for a Distributed Feature Selection Method	13
<i>Zsolt Berényi, István Vajk</i>	
The Physical Sensor for Pressure Measurement.....	18
<i>Aurora Stanci</i>	
Preliminary Issues on Brain – Machine Contextual Communication Structure Development.....	21
<i>T. Vesselenyi, I. Dzitac, S. Dzitac, C. Hora, C. Porumb</i>	
Wear Simulation through Cellular Automata Method.....	27
<i>C. Hora, T. Vesselenyi, S. Dzitac, I. Dzitac, H. Hora</i>	

SIGNAL PROCESSING AND APPLICATIONS

Automatic Image Classification from Cherenkov Telescopes Using Bayesian Ensemble of Neural Networks.....	33
<i>C. Malagón, J. A. Barrio, D. Nieto</i>	
Some Aspects About 3D Objects Recognition and Distance Approximation.....	38
<i>Traian Patrusel, Eugene Roventa, Cornel Barna</i>	
An Integrated Monitoring System for the Human Robot Collaborative Workspace	44
<i>O. O. Ogorodnikova</i>	
Histogram Intersection based Image Retrieval Technique using Relevance Feedback	50
<i>Tudor Barbu, Mihaela Costin, Adrian Ciobanu</i>	
New Attempts in Sound Diarization.....	53
<i>Ciprian Costin, Mihaela Costin</i>	

CONTROL AND MODELING

Adaptive Gain Sliding Mode Control in Uncertain MIMO Systems.....	59
<i>M. Roopaei, Valentina Emilia Balas</i>	
Extension of a Control Structure with PSAIC	65
<i>V. E. Balas, V. Ceregan, A. Codrean, T. L. Dragomir</i>	
Thermal Consumptions: Control and Monitoring.....	69
<i>Marius C. Popescu, Marius M. Balas</i>	
Case Based Reasoning Approach for Transaction Outcomes Prediction on Currency Markets.....	75
<i>X. Wang, M. D. Sykora, R. Archer, D. Parish, H. E. Bez</i>	

WEB APPLICATIONS AND OPTIMIZATION ALGORITHMS

Financial News Content Publishing on Youtube.com.....	81
<i>Martin D. Sykora, Marek Panek</i>	
Electronic Mail-based Adaptive Social Graph for the Conference.....	86
<i>Gábor Tolnai</i>	
Advice in Electronic Commerce	92
<i>Florentina Loredana Tache</i>	
Testing of a Modified Particle Swarm Optimization Algorithm Using Different Benchmark Functions	96
<i>Shawkat Hamdan, Amr. El Zawawi</i>	

INTELLIGENT SYSTEMS AND MODELING

Redundancy Method Used in PLC Related Applications.....	100
<i>Gianina Gabor, Doina Zmaranda, Cornelia Györgyi, Sanda Dale</i>	
Some Aspects Related with the Performability of the Sequential Multipliers Units.....	107
<i>Daniela E. Popescu, Mirela Pater</i>	
Market-Basket Problem Solved With Depth First Multi-Level Apriori Mining Algorithm	113
<i>Mirela Pater, Daniela E. Popescu</i>	
Fractal Technologies for Image Processing in Biology	119
<i>Istvan Sztojanov, Vasilica Voinea, Justina-Lavinia Stanica, Catalina Popescu-Mina</i>	
Fuzzy Rules of Sound Speed Influence on Ultrasonic Sensing in Outdoor Environments	124
<i>Viorel Nicolau, Constantin Miholca, Mihaela Andrei</i>	
Heating Monitored and Optimal Control of Electric Drives.....	130
<i>Marius-Constantin Popescu, Valentina Balas, Liliana Popescu</i>	

INTELLIGENT SYSTEMS AND APPLICATIONS

System Decentralized for Tracking Control and Data Acquisition Using for Hydroelectric Central	136
<i>Marius-Constantin Popescu, Valentina Balas, Liliana Popescu</i>	
A Software Solution for Reducing Energy Consumption in Domestic Sector	142
<i>V. Topac, A. Neaga, A. Stancu, L. Szantho, F. Copil</i>	
Towards Cognitive Antenna Systems based on Antenna-Channel Co-evolution	146
<i>Ligia Chira Cremene, Nicolae Crisan</i>	
A Procedure for PLC Programs Validation	150
<i>E. I. Gergely, Fl. Popentiu-Vladicescu, H. Madsen, G.E. Mang, Z. T. Nagy, D. Spoiala</i>	
Dependability Analysis of PLC I/O Modules.....	155
<i>E. I. Gergely, H. Madsen, Fl. Popentiu-Vladicescu, V. Spoiala, Z. T. Nagy</i>	
Applying a Pattern Length Constraint on the FP-growth Algorithm	161
<i>Cornelia Györödi, Robert Györödi, Mihail Dersidan, Livia Bandici</i>	

FUZZY THEORY AND LOGICS

Aggregation Operators on the Real Line	165
<i>Yasuo Narukawa, Vicenc Torra, Toho Gakuen</i>	
Function Decomposition Using Distending Function.....	169
<i>József Dombi, József Dániel Dombi</i>	
Real-valued Implication as Generalized Boolean Polynomial.....	175
<i>Dragan G. Radojevic</i>	
The Improvement of an Existing Fuzzy Logic Rule Base for the Treatment and Simulation of Conflicts in the Dispositional Tasks of a Railway Traffic Control Center.....	180
<i>Mark Farkas, Tibor Héray, László T. Koczy</i>	

SOFT COMPUTING AND APPLICATIONS

Utility of Time Factor in Logistic Optimization.....	185
<i>P. Földesi, E. Süle</i>	

New Algorithms Used in the Phases of Automatic Classification of Products.....	191
<i>M. Buzera, G. Prostean</i>	
The Diagnosis of Some Kidney Diseases in a Small Prolog Expert System.....	195
<i>Eugene Roventa, George Rosu</i>	
Object Labeling Method Using Uncertainty Measurement	201
<i>Cornel Barna</i>	
Configurable Fuzzy Logic Coprocessor for Small Scale Food Preparation.....	205
<i>Vishal Thareja, Michael Montcalm, Miodrag Bolic</i>	
On a Promising Sustainable Energy System and its Control- the Passive Greenhouse	211
<i>Marius M. Balas, Corina Mnerie, Ovidiu Falcan, Daniel Toader, Sanda Musca, Calin Musca</i>	
Numerical-Logical Processing in Neural Networks for the Decision Support.....	217
<i>Viorel Ariton, Doinita Ariton</i>	
The Fuzzy-Interpolative ADL Matrix.....	223
<i>Gyula Laszlo Florian</i>	
Author Index	