

# **2009 4th International Symposium on Computational Intelligence and Intelligent Informatics**

**(ISCIII 2009)**

**Luxor, Egypt  
21 – 25 October 2009**



**IEEE Catalog Number: CFP0936C-PRT  
ISBN: 978-1-4244-5380-1**

# TABLE OF CONTENTS

<b>Casual Communication with Eye Robots</b> .....	1
<i>Kaoru Hirota, Fangyan Dong</i>	

## FUZZY LOGIC AND ITS APPLICATIONS

<b>Multilayer Perceptrons Constructed of Fuzzy Flip-Flops</b> .....	2
<i>Rita Lovassy, László T. Kóczy, László Gál</i>	
<b>Approaching the Fuzzy Road Transport Traveling Salesman Problem by Eugenic Bacterial Memetic Algorithm</b> .....	8
<i>János Botzheim, Péter Földesi</i>	
<b>Fuzzy Approach to Utility of Time Factor</b> .....	16
<i>Péter Földesi, János Botzheim, Edit Süle</i>	
<b>Management of Uncertainty in Visual Examination Procedure in Building Diagnostics with Fuzzy Expert System</b> .....	23
<i>Gergely Molnárka</i>	
<b>Fuzzy System for Sound Speed Estimation in Outdoor Ultrasonic Distance Measurements</b> .....	33
<i>Viorel Nicolau, Dorel Aiordachioaie, Mihaela Andrei</i>	
<b>Reverse Traffic Reduction in the Fuzzy Logic based Dual Explicit Congestion Notification Mechanism in Satellite TCP/IP Networks</b> .....	37
<i>Clement N. Nyirenda, Fangyan Dong, Kaoru Hirota</i>	
<b>3D Representation of the Risk Factor Management Based on Type-2 Fuzzy Sets</b> .....	43
<i>Márta Takács</i>	
<b>Ability Estimation in CAT with Fuzzy Logic</b> .....	47
<i>Dana V. Balas-Timar, Valentina E. Balas</i>	

## APPLICATIONS

<b>Possible Improvement of the Operation of Vehicles Driven by Omnidirectional Wheels</b> .....	55
<i>József K. Tar, János F. Bitó, István Gergely, László Nádai</i>	
<b>A Distributed Solution for Restraining the Web-bots Access to On-line Software Applications</b> .....	61
<i>Cosmin Striletschi, Mircea F. Vaida</i>	
<b>Tele-operation of Robot Partners through iPod Touche</b> .....	66
<i>Naoyuki Kubota, Shiho Wakisaka, Akihiro Yorita</i>	
<b>Transportation Network Realization with an Optimization Method</b> .....	72
<i>András Bakó, Tamás Hartványi, István Szüts</i>	
<b>Modeling the Phenomenon of Refreshing Air Inside the Spaces of the Fungi's Culture</b> .....	76
<i>Marius-Constantin Popescu, Valentina E. Balas, Sanda V. Musca, Dragos Cosma</i>	

## MODELS AND METHODS

<b>Contrast Sensitivity Model of the Human Eye</b> .....	84
<i>András Roka, Péter Galambos, Péter Baranyi</i>	
<b>Changed Demand for Knowledge at Enhanced Product Definition in PLM Systems</b> .....	91
<i>László Horváth, Gábor Szabó, Imre J. Rudas</i>	
<b>Anytime Modeling: Compression and Improvement of the Approximation of SC Based Mappings</b> .....	97
<i>Annamária R. Várkonyi-Kóczy, Teréz A. Várkonyi</i>	
<b>On a Weight Representation for Inner Dependence Method AHP</b> .....	103
<i>Shin-ichi Ohnishi, Takahiro Yamanoi, Hideyuki Imai</i>	
<b>Dead Time Compensation for Interpolative-type Control Systems</b> .....	108
<i>Toma L. Dragomir, Alexandru Codrean, Vlad Ceregan, Sanda Dale</i>	
<b>Algorithm for Virtual Reality</b> .....	114
<i>Marius-Constantin Popescu, Valentina Emilia Balas, Marius Mircea Balas, Onisifor Olaru</i>	
<b>Characteristics of a New Abstraction Model</b> .....	118
<i>Claudiu Pozna, Radu-Emil Precup, Nicusor Minculete, Csaba Antonya</i>	

## **DOCUMENTS AND SPEECH PROCESSING**

<b>Tensor Term Indexing: An Application of HOSVD for Document Summarization</b> .....	124
<i>Sukanya Manna, Zoltán Petres, Tom Gedeon</i>	
<b>Implementation Of Strategy Based on Auditory Model Based Wavelet Transform Speech Processing on DSP Dedicated to Cochlear Prosthesis</b> .....	131
<i>Amira Derbel, Mohamed Ghorbel, Mounir Samet, Ahmed Ben Hamida</i>	

## **METAHEURISTICS**

<b>Improving Switched Current Memory Cells Performances Via the Particle Swarm Optimization Technique</b> .....	137
<i>M. Fakhfakh, S. Masmoudi, Y. Cooren, M. Loulou, P. Siarry</i>	
<b>Ant Supervised by PSO</b> .....	142
<i>Walid Elloumi, Nizar Rokbani, Adel M. Alimi</i>	
<b>Optimizing CMOS Current Conveyors Through Meta Heuristics</b> .....	148
<i>A. Sallem, E. Bradai, M. Kotti, E. Gaddour, M. Fakhfakh, M. Loulou</i>	
<b>Author Index</b>	