

4th IASTED International Conference on Computational Intelligence 2009

(CI 2009)

**Honolulu, Hawaii, USA
17-19 August 2009**

Editors:

B. Kovalerchuk

ISBN: 978-1-61567-752-8

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2009) by ACTA Press
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact ACTA Press
at the address below.

ACTA Press
B6 Suite 101
2509 Dieppe Avenue SW
Calgary, Alberta T3E 7J9
Canada

Phone: (403) 288-1195
Fax: (403) 247-6851

www.actapress.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

INTELLIGENT SYSTEMS

Conscience of Blogs: Verifying Contextual Appropriateness of Emotions Based on Blog Contents	1
<i>M. Ptaszynski, P. Dybala, W. Shi, R. Rzepka, K. Araki</i>	
Getting Closer to Human Level Human-likeness and Its Relation to Humor in Non-task Oriented Dialogue Systems	7
<i>P. Dybala, M. Ptaszynski, R. Rzepka, K. Araki</i>	
An Abstracted ‘Not So Expert’ System	15
<i>G. M. McGrath</i>	
Methodology for Modelling of Physical Processes by Acquisition of Silent Knowledge from Operators	23
<i>M. Kristiansen</i>	
A Knowledge-based System for Sea State Recognition and Target Detection Using a Single Marine Radar Sensor	31
<i>S. López-Estrada, R. Cumplido</i>	
Quantified Modal-logical Representation of Actions: From Signs to the Denotations of Action Verbs	38
<i>H. Nishina</i>	
New Definition of Prediction Without Logical Inference	48
<i>E. E. Vityaev, S. O. Smerdov</i>	

MACHINE LEARNING AND DATA MINING

Adaptive Coarse Coding for Value Function Approximation	55
<i>S. Kamdem, N. Sueda, H. Ohki</i>	
Self-position Estimation with Variable Processing Time Based on Image Feature Significance	62
<i>K. Doki, M. Tanabe, A. Torii, A. Ueda</i>	
Automatic Incremental Model Learning for Scene Interpretation	68
<i>J. Hartz, L. Hotz, B. Neumann, K. Terzić</i>	
Diagnosis Heart Disease Using an Association Rule Discovery Approach	75
<i>J. Nahar, K. S. Tickle, S. Ali, Y.-P. P. Chen</i>	
Prediction-tool for a Non-deterministic Resource Framework	80
<i>N. Zenker, M. Maelzer</i>	
A Fuzzy Relational Model for Fault Diagnosis	86
<i>W.-H. Chen, C.-S. Yu</i>	

EVOLUTIONARY COMPUTATION

Ant Colony and Neural Method for Coherent Scheduling of Complex of Operations and Resources Frameworks - Comparative Remarks	91
<i>M. Drabowski</i>	
Vaccine Driven Immune Algorithm with Two-level Hierarchical Affinity	98
<i>M. Yoshikawa, R. Ishiba, R. Oshiba</i>	
Chromosome Poulation Homomorphisms for Genetic Algorithms	103
<i>D. Hibler</i>	
Optimization of Discrete Values Using Recent Variants of Differential Evolution	108
<i>M. G. H. Omran, S. al-Sharhan</i>	
A Bio-inspired Search Algorithm for Conformational Energy Optimization of Peptides	114
<i>J.-H. Lin, M.-R. Lin, L.-R. Huang</i>	

SYSTEMS MODELLING AND CONTROL

A Linear-time Algorithm for the Maximum Matched-paired-domination Problem in Cographs	120
<i>R.-W. Hung, C.-H. Chiu, C.-C. Yao</i>	
High-level Synthesis of Self-testing Parallel Multiprocessors Computer Systems	127
<i>M. Drabowski</i>	

An Automated Learning Process in Market Engineering	134
<i>F. Szidarovszky, H. Qiao</i>	
Research on QoS Routing Protocol Based on Grover Algorithm for Manet	138
<i>L. Meng, K. Zhou, X. Shen, J. Hua, M. Lin</i>	
Extended Mamdani Fuzzy Logic Controller	143
<i>I. Iancu</i>	
Capability Prioritization for Exploration Technology Development	150
<i>W. Lincoln, C. R. Weisbin, R. Silberg, V. Adumitroaie, K. Shelton</i>	

NEURO AND FUZZY SYSTEMS

Neural Networks for Consciousness - Providing Another Dimension to Cognitive Neurosciences	155
<i>R. Prakash, O. Prakash, N. Shevchenko, G. J. Sahay</i>	
Artificial Multi-layer Neural Network Including Feedback Connection Based on Causality	158
<i>M. Ohka, K. Esumi, Y. Sawamoto</i>	
Fuzzy Weighted Average for Aggregation on Categorized Measuring Data	164
<i>C.-C. Hon, M.-L. Wu, L.-L. Tang</i>	
Type-2 TSK Fuzzy Filtering and Uncertainty Estimation for Acoustic Emission in Precision Manufacturing	170
<i>Q. Ren, L. Baron, M. Balazinski</i>	
A Pulse-type Hardware Neuron Model with Stdp for Brain-like Information Processing System	176
<i>K. Saeki, R. Shimizu, Y. Sekine</i>	
Bayesian Adaptive Diagnoser of Bug Rules with Tree Structure Model	182
<i>T. Ohmori, K. Shigemasu</i>	
Using Fuzzy Logic for Prediction of Occurrence, Aggravation and Pre-nosological Diagnostics of Osteochondrosis of a Backbone's Lumbar Region	190
<i>N. A. Korenevskii, F. Ionescu, A. A. Kuzmin, R. T. Al-Kasasbeh</i>	
Selection of Optimal Portfolio: Taking Into Consideration Dependencies Among Assets	195
<i>T. Magoč, F. Modave</i>	

ADDITIONAL PAPER

Characterizing Dialogue Plausibility by Explanation Phase Space	202
<i>B. Galitsky, B. Kovalerchuk</i>	
Author Index	