

17th Asia Pacific Symposium on Intelligent and Evolutionary Systems

(IES 2013)

Procedia Computer Science Volume 24

**Seoul, Korea
7-9 November 2013**

Editors:

**Sung-Bae Cho
Kyung-Joong Kim**

Aki-Hiro Sato

ISBN: 978-1-62993-664-2

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© by Elsevier B.V.
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact Elsevier B.V.
at the address below.

Elsevier B.V.
Radarweg 29
Amsterdam 1043 NX
The Netherlands

Phone: +31 20 485 3911
Fax: +31 20 485 2457

<http://www.elsevierpublishingsolutions.com/contact.asp>

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

Available online at www.sciencedirect.com**ScienceDirect**

Procedia Computer Science 24 (2013) iii – iv

Procedia
Computer Science

Contents

Preface	
S.-B. Cho, A.-H. Sato, K.-J. Kim	1
A Packet Switch Scheduler based on 2DRR for High-Throughput	
K. Omori, M. Yoo, T. Yokoyama	3
A Proposal of Real-time Scheduling Algorithm based on RMZL and Schedulability Analysis	
K. Yanai, M. Yoo, T. Yokoyama	9
Enriched Diagrammatic Representation for Resolution	
S. Al-Fedaghi	15
An Iterative Algorithm for Motif Discovery	
Y. Fan, W. Wu, R. Liu, W. Yang	25
Dynamic State Estimation in Vehicle Platoon System by Applying Particle Filter and Unscented Kalman Filter	
H. Suzuki	30
A New Linguistic Variable in Interval Type-2 Fuzzy Entropy Weight of a Decision Making Method	
N. Zamri, L. Abdullah	42
Dynamic Diversity Enhancement in Particle Swarm Optimization (DDEPSO) Algorithm for Preventing from Premature Convergence	
O.M. Nezami, A. Bahrampour, P. Jamshidou	54
Dynamic Multiobjective Optimization Using Evolutionary Algorithm with Kalman Filter	
A. Muruganantham, Y. Zhao, S.B. Gee, X. Qiu, K.C. Tan	66
Effect of Second Best Particle Information for Particle Swarm Optimization	
Y.-B. Shin, E. Kita	76
One-shot Classification of 2-D Leaf Shapes Using Distributed Hierarchical Graph Neuron (DHGN) Scheme with k-NN Classifier	
A.H.M. Amin, A.I. Khan	84
Multi Neural Networks Investigation based Sleep Apnea Prediction	
Y. Maali, A. Al-Jumaily	97
A Simulation Framework for Neuron-based Molecular Communication	
J. Suzuki, H. Budiman, T.A. Carr, J.H. DeBlois	103
Hybrid of Rule-based Systems Using Genetic Algorithm to Improve Platform Game Performance	
H.-T. Kim, K.-J. Kim	114
Bias Reduction of Probabilistic Prototype Tree based Estimation of Distribution Genetic Programming in Predicting Arthritis Prevalence	
K. Kim, H. Cho	121
Overtaking Method based on Variance of Values: Resolving the Exploration – Exploitation Dilemma	
K. Ochi, M. Kamiura	126
Interactive Evolution of 3D Models based on Direct Manipulation for Video Games	
D.-M. Yoon, K.-J. Kim	137
Towards Believable Resource Gathering Behaviours in Real-time Strategy Games with a Memetic Ant Colony System	
X. Chen, Y.S. Ong, L. Feng, M.H. Lim, C. Chen, C.S. Ho	143
Performance of Incremental Genetic Programming on Adaptability of Snake-like Robot	
N. Mukosaka, I. Taney, K. Shimohara	152
The Automated Fault-recovery for Four-legged Robots Using Parallel Genetic Algorithm	
H. Park, K.-J. Kim	158
Analysis for the Gait Patterns of Healthy Subjects During March	
T. Shirakawa, M. Kamiura, A. Takagi, H. Sato	167
Trajectory Mining for Keystroke Dynamics Authentication	
K. Wangsuk, T. Anusas-amornkul	175
Structural Influence of Fields on the Performance of the Unknown Field Coverage Algorithm by Means of Multi-agent	
H. Yamachi, Y. Tsujimura, Y. Kambayashi, H. Yamamoto	184
A Cognitively Inspired Heuristic for Two-armed Bandit Problems: The Loosely Symmetric (LS) Model	
K. Oyo, T. Takahashi	194
A Stackelberg Game Approach for Secure and Efficient Surveillance	
G. Chaudhary, Y. Narahari	205
Collective Behavior in Cascade and Schelling Model	
S. Iwanaga, A. Namatame	217

Diffusion Centrality in Interconnected Networks K. Ide, R. Zamami, A. Namatame	227
Improve Network's Robustness against Cascade with Rewiring H.A.Q. Tran, A. Namatame	239
Estimation of Subjects that are Distributed at a High Density from Non-pixel Information Applying NMF Y. Kubo, M. Kubo, H. Sato, A. Namatame	249
Applying Non-negative Matrix Factorization to Classify Superimposed Handwritten Digits S. Phon-Amnuaisuk	261
Data Management with Flexible and Extensible Data Schema in CLANS S. Wang, Y. Man, T. Zhang, T.J. Wong, I. King	268
Learning to Predict the Need of Summarization on News Articles J.E. Lee, H.S. Park, K.J. Kim, J.C. No	274
A Study of Forest Recreation Evaluation Model in China Y. Zhang, X. Zhou	280
Numerical Analysis on "Trap of Credit Creation" in Macroeconomics under Zero-Interest-Rate Policy Y. Murata, T. Inoue, M. Kamiura	289
A Stochastic Aggregation of Economic Behavior: The Case of Switching Rule in the Adaptive Belief System T.-S. Jang	301
A Comprehensive Analysis of Time Series Segmentation on Japanese Stock Prices A.-H. Sato	307