2013 IEEE 6th International Workshop on Computational Intelligence and Applications

(IWClA 2013)

Hiroshima, Japan
13 July 2013
# Table of Contents

Harmonic Filters Planning of System for Specially Connected Transformers Using PSO-NTVE Method  
Ying-Pin Chang  ................................................................. 9

Emotion Orientated Recommendation System for Hiroshima Tourist by Fuzzy Petri Net  
Takumi Ichimura and Issei Tachibana  .................................................. 15

An Estimation of Favorite Value in Emotion Generating Calculation by Fuzzy Petri Net  
Takumi Ichimura and Kosuke Tanabe  .................................................. 21

Development of automatic positioning system for bicycle saddle  
based on lower limb's EMG signals during pedaling motion  
Tatsushi Tokuyasu, Shimpei Matsumoto, Shoma Kushizaki and Tomoki Kitawaki  ......................... 27

Geometric Transformation Based Multiplicative Data Perturbation For Privacy Preserving Data Mining  
Hitesh Chhinkaniwala, Aniket Patel and Sanjay Garg  ........................................... N/A

Approach to Identifying Out-of-Control Variables in Multivariate T squared Control Chart Using AIC  
Yasuhiko Takemoto, Rumi Tanaka and Ikuo Arizono  ........................................... 39

Dependent Input Neuron Selection in Contradiction Resolution  
Ryotaro Kamimura  ................................................................. 45

Automatic Bone Boundary Detection in Hand Radiographs by Using Modified Level Set Method  
and Diffusion Filter  
Syaiful Anam, Eiji Uchino, Hideaki Misawa and Noriaki Suetake  ......................................... 51

Location-based Burst Detection Algorithm for Georeferenced Document Streams  
based on User's Moving Direction  
Tomoki Matsui, Keiichi Tamura and Hajime Kitakami  ........................................... 57

A study of the evacuation behavior simulation to investigate the effect of concessions and obstacles  
Kentaro Tani, Yoshinobu Maeda and Nao Ito  ................................................................. 63

Meta-heuristic Algorithms Applied to the Optimization of Type-1 and Type 2 TSK Fuzzy Logic Systems  
for Sea Water Level Prediction  
Nguyen Cong Long and Phayung Meesad  ................................................................. 69

Parallel Ant Programming Using Genetic Operators  
Akira Hara, Jun-ichi Kushida, Souichi Tanabe and Tetsuyuki Takahama  ..................................... 75
Interval-valued Differential Evolution for Evolving Neural Networks with Interval Weights and Biases
Hidehiko Okada ...............................................................81

Structural Optimization of Neural Network for Data Prediction Using Dimensional Compression and Tabu Search
Tomohiro Hayashida, Ichiro Nishizaki and Tsubasa Matsumoto ........................................85

A (μ, λ) Evolutionary and Particle Swarm Hybrid Algorithm, with an Application to Dinosaur Gait Optimization
Yoshiyuki Matsumura, Ayumu Kobayashi, Kiyotaka Sugiyama, Todd Pataky, Bill Sellers,
Toshiyuki Yasuda and Kazuhiro Ohkura ..................................................89

Segmentation-based Illumination Normalization for Face Detection
Min Yao, Kota Aoki and Hiroshi Nagahashi ........................................95

Detecting Electrical Stimulation of Cortical Mapping from Recorded Awake Surgery Sounds
Toshihiko Nishimura and Tomoharu Nagao ........................................101

Constraint Propagation + Ant Colony Optimization for Automated School Timetabling
Makoto Koshino and Takahiro Otani ..................................................107

Genetic Programming with Multiple Initial Populations Generated by Simulated Annealing
Takuya Mototsuka, Akira Hara, Jun-ichi Kushida and Tetsuyuki Takahama .........................113

Island-Based Differential Evolution with Varying Subpopulation Size
Jun-ichi Kushida, Akira Hara, Tetsuyuki Takahama and Ayumi Kido ................................119

Hierarchical Modular Reinforcement Learning Method and Knowledge Acquisition of State-Action Rule for Multi-target Problem
Takumi Ichimura and Daisuke Igaue ........................................................125

Detection of Electrical Stimulation Position in Recorded Surgery Videos of Cortical Mapping in Awake Brain Surgery
Masanori Suganuma and Tomoharu Nagao ........................................131

Parallel Processing of Approximate Sequence Matching using Disk-based Suffix Tree on Multi-core CPU
Yosuke Watanuki, Keiichi Tamura, Hajime Kitakami and Yoshifumi Takahashi .......................137

Personal Tour Planning Incorporating Standard Tour Routes and Tourist Satisfaction
Takashi Hasuike, Hideki Katagiri, Hiroe Tsubaki and Hiroshi Tsuda ................................143

Automatic Construction of Single Frame Super-Resolution Using Cartesian Genetic Programming
Yusuke Natsui and Tomoharu Nagao ..................................................149
An Empirical Study of Concept Drift Detection for the Prediction of TAIEX Futures
Hong-Che Lin and Kuo-Wei Hsu ................................................................. 155

Solving the Wafer Probing Scheduling Problem Using Water Flow-like Algorithm
Chin-Chih Chang and Feng-Chia Li ............................................................. 161

An interactive multiobjective programming approach to tour route planning problems
Hideki Katagiri, Takeshi Uno, Kosuke Kato, Hiroshi Tsuda and Hiroe Tsubaki ........ 167

Stereo vision For the Measurement of Turning Tool Size
Pei-Ju Chiang and Geng-Hao Ping ............................................................. 173

Credit Risk Evaluation of Investment Corporation Bonds
Hiroshi Tsuda and Masakazu Ando ............................................................ 179

A New Message Flooding Protocol for Ad-hoc Social Community Sharing Real-time Market Information
Tetsuya Shigyayasu and Takumi Ichimura .................................................. 185

Early Discovery of Chronic Non-attenders by Using NFC Attendance Management System
Takumi Ichimura and Shin Kamada ............................................................ 191

A Method using Linguistic and Acoustic Features to Detect Inadequate Utterances
in Medical Communication
Michihisa Kurisu, Kazuya Mera, Ryunosuke Wada, Yoshiaki Kurosawa and Toshiyuki Takezawa ...... 197

An End-to-End Middleware Solution With Multiple Concurrent Applications Support
for Wireless Body Area Networks
Mo Haghighi ................................................................. N/A

Genetic Algorithm-based Feature Selection for Decision Tree Classification
And its Application to Credit Risk Analysis
Zhiyi Xue and Steve Chen ................................................................. N/A

Scene Classification Using Color and Structure-based Features
Ken Shimazaki and Tomoharu Nagao .................................................. 211

Author Index ................................................................. 217