# 2014 IEEE 7th International Workshop on Computational Intelligence and Applications

# (IWCIA 2014)

## Hiroshima, Japan
## 7-8 November 2014

IEEE Catalog Number: CFP1461U-POD
ISBN: 978-1-4799-4769-0

# Table of Contents

**[Invited Special Talk] Intelligent Decision Making in Supply Chain Management under Uncertainty**
Takashi Hasuike ……1

**Investigating and forecasting business performance: Based on intellectual capital perspective**
Chiu-Ping Wang ……N/A

**Affective Recommendation System for Tourists by Using Emotion Generating Calculations**
Takumi Ichimura and Issei Tachibana ……9

**Proposal of Tangible User Interface for Information Curation using NFC and Smartphone**
Tomohiro Ito and Yasufumi Takama ……15

**Proposal of Interactive Document Clustering System based on Coordinated Multiple Views**
Takuma Tonegawa and Yasufumi Takama ……19

**Bio-inspired Heuristic for Optimizing Protein Structure Alignment using Distributed Modified Extremal Optimization**
Keiichi Tamura, Hajime Kitakami and Yoshifumi Takahashi ……23

**Random Forest And Gene Ontology for Functional Analysis of Microarray Data**
Tham Wen Shi, Kohbalan Moorthy, Mohd Saberi Mohamad, Safaai Deris, Sigeru Omatu and Michifumi Yoshioka ……29

**Design of Optimal PD Control Gains for a TORA: Dominant Pole Assignment**
Kaoru Sumida, Xin Xin and Taiga Yamasaki ……35

**Genetic Algorithm-Based Terminal Complex Sliding Manifold Controller for UPS Inverter Applications**
En-Chih Chang, Yow-Chyi Liu and Kuo-Yuan Liao ……41

**Uncertain Network Reasoning for Agents via Gaussian Radial Basis Functions**
Ray-Ming Chen ……47

**Feasibility Study on ECG Data Transmission Over Voice for Patient Telemonitoring System**
Hendra Setiawan, Alvin Sahroni and Erlina Marfianti ……53

**Feature Transformation Using Filter Array for Automatic Construction of Image Classification**
Yuichi Hirano and Tomoharu Nagao ……59

**Parallel Processing for Distance-Based Outlier Detection on a Multi-core CPU**
Junki Oku, Keiichi Tamura and Hajime Kitakami ……65

**An Adaptive Learning Method of Personality Trait Based Mood in Mental State Transition Network by Recurrent Neural Network**
Takumi Ichimura, Kosuke Tanabe and Toshiyuki Yamashita .....71

**Interactive nonlinear optimization-based method for correcting the pin probe position in printed circuit board electrical inspections**
Hideki Katagiri, Masashi Morisawa, Hongwei Wu, Hiroshi Hamori and Kosuke Kato .....77

**A gene ontology-based microarray gene expression data analysis for diagnosing pseudomyxoma peritonei**
Hideki Katagiri, Takeshi Uno, Kosuke Kato, Hiroyuki Kuwano, Kohei Sasaki, Yutaka Yonemura and Yoshio Endo .....83

**Multi-Agent Reinforcement Learning System to Find Efficient Courses for Ships**
Masahiro Nakayama, Takeshi Kamio, Kunihiko Mitsubori, Takahiro Tanaka and Hisato Fujisaka .....89

**Identifying Bursty Areas of Emergency Topics in Geotagged Tweets using Density-based Spatiotemporal Clustering Algorithm**
Tatsuhiro Sakai and Keiichi Tamura .....95

**Complete Contours Formation via Alignment Interpretation of Illusory Edges**
Ko-Ching Liang, Chun-Shun Tseng, Jung-Hua Wang and Hsuan-Wei Huang .....101

**A Novel Tree Differential Evolution using Inter-symbol Distance**
Jun-ichi Kushida, Akira Hara and Tetsuyuki Takahama .....107

**Acquisition of Characteristic Sets of Tree Patterns with VLDC's Using Genetic Programming and Edit Distance**
Shohei Nakai, Tetsuhiro Miyahara, Yusuke Suzuki, Tetsuji Kuboyama and Tomoyuki Uchida .....113

**Cartesian Ant Programming with Adaptive Node Replacements**
Akira Hara, Jun-ichi Kushida, Keita Fukuhara and Tetsuyuki Takahama .....119

**Iterative optimization techniques based on man-machine interaction for timetabling problems**
Shunsuke Shimazaki, Kazutoshi Sakakibara and Takuya Matsumoto .....125

**A Study on Constructing User Adaptive Learning Environment to Realize Sustainable Self-Study**
Taiki Kurisu, Shimpei Matsumoto, Tomoko Kashima and Masanori Akiyoshi .....131

**A Method to Quantify Twitter User's Posting Activities for Constructing Disaster Information Support System**
Hiroki Kawaguchi, Shimpei Matsumoto and Fujio Toriumi .....137

**A Study on Sightseeing Promotion with ICT from the Viewpoint of Sustainability**
Yuki Fudo, Shimpei Matsumoto, Tomoko Kashima and Masanori Akiyoshi .....141

**Sightseeing Route Planning Problem by Electric Vehicle on the Time-Expanded Network**
Takashi Hasuike, Hideki Katagiri, Hiroe Tsubaki and Hiroshi Tsuda .....147

**Noncooperative Two-level Nonlinear Programming through Strategic Oscillation Based on PSO and Clustering**
Hiromu Imaji, Hideki Katagiri and Kosuke Kato .....153

**Agent-based Simulation Analysis for Networks Formation Using PSO**
Shunsuke Koto, Tomohiro Hayashida, Ichiro Nishizaki and Shinya Sekizaki .....159

**Statistical Analysis of the Influence of Capital Structure on Stock Price**
Tatsuya Kawai and Hiroshi Tsuda .....165

**Structural Optimization of Neural Networks and Training Data Selection Method for Prediction**
Tomohiro Hayashida, Ichiro Nishizaki, Shinya Sekizaki and Masanori Nishida .....171

**Stable Learning for Neural Network Tomography by using Back Projection Type Image**
Masaru Teranishi .....177

**A Study on Effective Algorithm for Selecting PVA Nodes in VANETs**
Tetsuya Shigeyasu and Aiko Hashimoto .....183

**Response Threshold-Based Task Allocation in a Reinforcement Learning Robotic Swarm**
Toshiyuki Yasuda, Koki Kage and Kazuhiro Ohkura .....189

**Multi Modular Robots Maneuver for Geometry Formation Control**
Rattanapol Phanichnitinon, Tanakrit Hemwarangkoon, Jumpol Polvichai, Thanathep Boonpromma and Kasin Jarutekumporn .....195

**Solving Simple Target Shipping Tasks by a Cooperative Robot Team**
Tanakrit Hemwarangkoon, Rattasapa Meeprapai, Cattleya Kanchanapiboon and Jumpol Polvichai .....201

**Classification of Patient's Reaction in Language Assesment during Awake Craniotomy**
Toshihiko Nishimura, Tomoharu Nagao, Hiroshi Iseki, Yoshihiro Muragaki, Manabu Tamura and Shinji Minami .....207

**Performance of Blind Source Separation (BSS) Techniques for Mixed Source Signals of EEG, ECG, and Voice Signal**
Alvin Sahroni, Hendra Setiawan and Erlina Marfianti .....213

**Engine fault diagnosis based on the weighted DS evidence theory**
Zhuting Yao and Hongxia Pan ……..219

**Identifying Burstiness of Local Topic using Location-based Burst Detection with a Classifier Technique**
Shota Kotozaki, Keiichi Tamura and Hajime Kitakami ……225

**Author Index** ……231