

## Special Issue on Selected Best Papers of the 2011 International Conference on Intelligent Computing and Information Science (ICICIS 2011)

# Guest Editorial

2011 International Conference on Intelligent Computing and Information Science (ICICIS 2011) will be held in Chongqing, China during January 8-9, 2011. The aim is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Intelligent Computing and Information Science. This book is to communicate the latest progress and research results of new theory, new method, technology and so on in Intelligent Computing and Information Science, and to grasp the updated research trends in international, which will drive international communication and cooperation of production, education and research in this field.

In this conference, we received more than 600 submissions from email and electronic submission system, which were reviewed by international experts, and about 230 papers have been selected for presentation.

This special journal issue contains select best computer related papers from the 2011 International Conference on Intelligent Computing and Information Science (ICICIS2011).

“Performance Analysis of Quantitative Attributes Inverse Classification Problem” proposes an inverse classification method of quantitative attributes to solve the limitations of discrete attributes.

In the paper “RVM based on PSO for Groundwater Level Forecasting”, a new RVM model optimized by Particle Swarm Optimization (PSO) is proposed, and it is applied to groundwater level forecasting.

In the paper “A Novel Culture Algorithm for Knowledge Integration”, authors put forward a knowledge integration strategy under the framework of culture algorithm.

“The Difference Degree of Condition Attributes and Its Application in the Reduction of Attributes” proposes a method of the reduction of attributes and design a corresponding reduction algorithm.

“Group Decision Making Coordinating Characteristic Analysis and Modeling of Water Resource Allocation and Scheduling” proposes a multi-layer dynamic model of water resource allocation and scheduling based on the in-depth analysis of the coordinating characteristic in group decision making.

“Flexible Neural Trees for Online Hand Gesture Recognition using surface Electromyography” presents an online hand gesture recognition model by using Flexible Neural Trees (FNT) and based on sEMG signals. The results indicate that the model is able to classify six different hand gestures up to 97.46% accuracy in real time.

In the paper “Correlation Dimension for Pressure Fluctuation in Hydraulic Turbine Draft Tube”, correlation dimension is used to analyze the test data of pressure fluctuation in draft tube, the calculated results show that pressure fluctuation is different under different conditions, the corresponding correlation dimension is not the same.

“An Improved Genetic Algorithm Based on Fixed Point Algorithms” proposes an improved genetic algorithm to solve optimal problems, which is based on fixed point algorithms of continuous self-mapping in Euclidean space.

“Testing of Rounded Corner for Micro-Drill on Hybrid of BP Neural Network and Adaptive Particle Swarm Optimization” proposes a new approach based on hybrid of linear BP neural network and particle swarm optimization algorithm for fitting of micro-drill’s margin projection.

“Choquet Integral with Respect to Extensional Completed L-Measure Based on N-Density” proposes a new fuzzy density function called N-density.

“A Video Denoising Method with 3D Surfacelet Transform Based on Block matching and Grouping” proposes a novel video denoising method combining block matching based on the E3SS and grouping these block strategy, 3D Surfacelet transform.

In the paper “Application of GSO for Load Allocation between Hydropower Units and Its Model Analysis based on Multi-objective”, a multi-objective optimization model of load allocation between hydropower units is established in accordance with the characteristics and particularity of the hydropower station.

“Study on Fault Detection of Rolling Element Bearing Based on Translation-Invariant Denoising and Hilbert-Huang Transform” proposes a new method based on translation-invariant denoising (TID) and Hilbert-Huang transform (HHT) to detect rolling element bearing faults from strong background noise.

“Research of Intelligent Control of Air Compressor at Constant Pressure” aiming at defects in the intrinsic control system of air compressors, the ECS-700 system from the DCS technology was applied to designing the monitoring system of the air compressor system which offered data required for the system controller design.

“Analysis of filtering solutions based on the ‘FastSLAM’ framework” makes analysis of the particle filtering solution and the Kalman filtering solution based on the FastSLAM framework.

“Fast and Robust Method for Dynamic Gesture Recognition Using Hermite Neural Network” proposes a novel adaptive Hermite neural networks algorithm for dynamic gesture recognition.

“Adaptive Neural Network Tracking Control for a Class of SISO Affine Nonlinear Uncertain Systems” presents a direct adaptive neural network tracking control scheme for a class of SISO affine nonlinear uncertain systems.

“Research for Multi-sensor Information Fusion Algorithm of Search and Rescue Robot Based on Embedded Control Network” proposes an optimizing strategy based on multi-sensor information fusion.

“A Hybrid Neural Network and ARIMA Model for Energy Consumption Forecasting” proposes a hybrid methodology that combines both ARIMA and ANN models is proposed to take advantage of the unique strength of ARIMA and ANN models in linear and nonlinear modeling.

“Improved P-hub Network Model and GA Solution Based on Rough Set Theory” proposes an improved p-hub network model based on  $\beta$ - approximate rough set data mining technology to reduce the range of hub choice from  $n$  alternative hubs to the limited  $q$  ( $q < n$ ) airports, which greatly reduces total number of the variables and constraints for the models.

In the paper “Performance Evaluation of Active Queue Management Using A Hybrid Approach”, a hybrid approach, namely, Proportional Rate-based Control (PRC), is proposed to maintain the queue length around the target level by 1) dropping the packet whose arrival rate exceeding maximum desired rate; 2) using virtual queue to control the packet whose arrival rate above minimum desired rate.

The special issue will promote the development of intelligent computing and information science, strengthening the international academic cooperation and communications, and exchanging research ideas.

On behalf of the guest editors for this special issue, I would like to thank the National 863 Program of China, National Science Fund of China, Chongqing University of Technology, Chongqing University. I also thank the conference organization staff, and the members of International Technological Committees for their hard work. Professor Lei Li, Editor-in-chief of information-an international interdisciplinary journal, is greatly acknowledged.

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