

Special Issue on Recent Advances in Computer Science and Engineering

Guest Editorial

This special issue comprises of eight selected papers from the WASE Global Congress on Science Engineering (GCSE 2009), Shanxi, China, 25-27 December 2009. The conference received more than 1000 paper submissions from 12 countries and regions, of which 273 were selected for presentation after a rigorous review process. From these 273 research papers, through two rounds of reviewing, the guest editors selected ten as the best papers on the computer network track of the Conference. The candidates of the Special Issue are all the authors, whose papers have been accepted and presented at the 2009 GCSE, with the contents not been published elsewhere before.

The 2009 GCCS are sponsored by World Association of Science Engineering, Technical Co-Sponsors of the conference are University of London and Taiyuan University of Technology.

“An Effective Adaptive Multi-objective Particle Swarm for Multimodal Constrained Function Optimization”, by Yongquan Zhou and Shengyu Pei, presents a novel adaptive multi-objective particle swarm algorithm for solving constrained function optimization problems, in which Pareto non-dominated ranking, tournament selection, crowding distance method were introduced, simultaneously the rate of crowding distance changing were integrated into the algorithm. Simulation results based on four test functions demonstrate the effectiveness, efficiency and practical.

“Research on Formal Verification Technique for Aircraft Safety-Critical Software”, by Yongfeng Yin, Bin Liu and Duo Su, grounding on abundant experience and research on real-time embedded software testing technique to propose a new and effective formal verification method for aircraft safety-critical software.

“Determination of Optimal SVM Parameters by Using GA/PSO”, by Yuan Ren and Guangchen Bai, proposes automated, reliable, and relatively fast approaches for determining the SVM parameters based on genetic algorithm and particle swarm optimization.

“Water Resources Allocation Effect Evaluation Based on Chaotic Neural Network Model”, by Xianfeng Huang and Guohua Fang, combines the chaotic optimization arithmetic with the neural network to establish Chaotic Neural Network Comprehensive Evaluation model (CNNCE) of the effect evaluation of water resources allocation.

“A Large-Scale Device Collaboration Performance Evaluation Approach Based-on Dynamics”, by Xiaohui Rong, Feng Chen, Pan Deng, and Shilong Ma, establishes a dynamics model of large-scale device collaboration performance and presented a large-scale device collaboration performance evaluation approach based-on dynamical system theory.

“Annotating Web Image Using Parallel Graph Bipartition and Word Clustering”, by Zheng Liu, combines candidate annotations clustering with parallel graph bipartition to annotate Web images.

“Power Aware Job Scheduling in Multi-Processor System with Service Level Agreements Constraints”, by Congfeng Jiang, Jian Wan, Xindong You, and Yinghui Zhao, proposes a fine-grained job-level power aware scheduling algorithm to minimize power consumption in multi-processor system with SLA constraints.

“Transaction in large-scale device collaborative system”, by Feng Chen, Xiaohui Rong, Pan Deng, and Shilong Ma, presents device operations conflicts detection rules, and proposes a mechanism to calculate compensation operation, which can generate the compensation operation list and significantly reduce the number of device operations.

“The Entropy Model of Fractal Supply Chain Network System Based on Fuzzy AHP”, by Xilong Qu and Zhongxiao Hao, establishes an entropy model of fractal supply chain network organization structure as well as its entropy model based on fuzzy AHP.

“A Useful Anomaly Intrusion Detection Method Using Variable-length Patterns and Average Hamming Distance”, by Ye Du, Ruhui Zhang, and Youyan Guo, proposes a system processes level method name V-AHD to construct normal variable-length patterns database and usse average hamming distance algorithm to detect intrusions.

We wish to thank the Taiyuan University of Technology, China for providing the venue to host the conference. We would like to take this opportunity to thank the authors for the efforts they put in the preparation of the manuscripts and for their valuable contributions. We wish to express our deepest gratitude to the program committee members for their help in selecting papers for this issue and especially the referees of the extended versions of the selected papers for their thorough reviews under a tight time schedule. Last, but not least, our thanks go to the Editorial Board of the Journal of Computers for the exceptional effort they did throughout this process.

In closing, we sincerely hope that you will enjoy reading this special issue.

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