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EDITORIAL

Editorial

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The 4th International Conference on Natural Computation and the 5th International Conference on Fuzzy Systems and Knowledge Discovery (ICNC-FSKD'2008) were successfully held from 18 to 20 October 2008 in Jinan, China. ICNC-FSKD'2008 featured the most up-to-date research results in intelligent methods inspired from nature, particularly biological and physical systems, with applications to data mining, manufacturing, design, and more. Specific research areas that are included in the proceedings are neural computation, quantum computation, evolutionary computation, DNA computation, chemical computation, information processing in cells and tissues, molecular computation, computation with words, fuzzy computation, granular computation, artificial life, swarm intelligence, ants colony optimization, artificial immune systems, as well as innovative applications to knowledge discovery, finance, and operations research. In addition to the large number of submitted papers (3,185 submissions), the joint conference also counts the presence of several renowned keynote speakers.

This special issue contains extended and revised versions of selected papers presented at ICNC-FSKD'2008. Through a rigorous review process, we have selected nine papers to be included in this special issue. The first paper by Isaac J. Sledge, Timothy C. Havens, Jacalyn M. Huband, James C. Bezdek and James M. Keller presents a new technique to automatically estimate number of clusters in dataset. The second paper by Mao-Zu Guo and Jun Wang is about the TagSNP selection in current genomic research and proposes a new hybrid method called CMDStagger, which combines the ideas of the clustering and the graph algorithm and uses the information of the linkage disequilibrium (LD) association and the haplotype diversity. The third paper by Kai Wang, Jufeng Yang, Guangshun Shi, Qingren Wang investigates the asymptotic optimization of the pre-edited neural network classifier. The fourth paper by Hendrik Richter and Shengxiang Yang investigates the relationship between learning and memory in the abstract memory scheme in order to improve the performance of evolutionary algorithms in dynamic environments. In the fifth paper by Lianqing Yu and Zhanyi Hua, a computational neural model for the detection of binocular disparity gradient is proposed. The sixth paper by Khalid Youssef and Peng-Yung Woo treats music note recognition problem by using Self-Organizing Map Tree and Linear Vector Quantization. The seventh paper by Zhengxia Wang, Jiali Mao and Guodong Liu investigates the problem on asymptotical and robust stability of genetic regulatory networks with time-varying delays and stochastic disturbance. The eighth paper by Wei Wang, Shangce Gao and Zheng Tang proposes a complex artificial immune system for invariant pattern recognition. The last paper by Xuyan Xiang, Yingchun Deng and Xiangqun Yang presents two more biologically plausible neural networks so-called Second Order Spiking Per-ceptron (SOSP) and Extended Second Order Spiking Perceptron (ESOSP) based on the integrate-and-fire model.

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