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EDITORIAL

Special issue on UKCI 2013

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UKCI 2013 was the 13th annual workshop on computational intelligence (CI), which is the premier UK and Ireland event for presenting leading research on all aspects of computational intelligence. UKCI 2013 was hosted by the University of Surrey, Guildford, UK from September 9 to 11, 2013. Three Keynote speeches were delivered by Prof Andy Adamatzky, University of West England, Bristol, Prof. Bernhard Sendhoff, Honda Research Institute Europe, Germany, and Prof Jun Wang, The Chinese University of Hong Kong, Hong Kong, providing an overview of the state-of-the-art in unconventional computing, evolutionary complex engineering optimization and neural computing, respectively.

35 papers have been accepted for oral presentation and 12 papers for poster presentation at UKCI 2013 from 70 submissions. Based on the reviewers' comments, 15 papers from the 47 accepted papers were invited to submit the Special Issue after substantial extension. Finally, 11 papers were accepted to be published in the special issue after going through a peer review process.

The 11 accepted papers represent most recent advances in theory and applications of computational intelligence. They can roughly be divided into two groups. The first group containing five papers reports advances in evolutionary computation, fuzzy systems and neural networks. The paper titled "Using an adaptive collection of local evolutionary algorithms for multi-modal problems" by Fieldsend et al. suggests a method for handling multi-modal problems using multiple local search evolutionary algorithms. The paper "A two-layer surrogate-assisted particle swarm optimization algorithm" by Sun et al. presents a particle swarm optimizer assisted by a global model and a local model for handling computationally expensive optimization problems. "A set-based genetic algorithm for solving the many-objective optimization problem" by Wang et al. proposes an evolutionary algorithm addressing optimization problems containing more than three conflicting objectives. The paper titled "The $X - \mu$ representation of fuzzy sets" by Martin describes a method for calculation to be used in fuzzy association rules. Mavrovouniotis and Yang's paper, titled "Training neural networks with ant colony optimization algorithms for pattern classification" compares ant colony optimization algorithms with existing methods for optimizing neural networks.

The second group consists of six papers dealing with different applications using computational intelligence techniques. "A cytokine network-inspired cooperative control system for multi-stage stretching processes in fibre production" by Ding et al. introduces a bio-inspired algorithm for control of multi-stage carbon fibre stretching and compares it with traditional control methods such as PID control. The paper titled "How Clumpy is my Image?" by Hutte et al. presents a methods for accomplishing annotation tasks using crowdsourcing. Ling et al. consider a neighborhood development algorithm for multi-relational data in the paper "Double-phase locality-sensitive hashing of neighborhood development for multi-relational data". The paper by Shen et al. titled "Self-adjusting harmony search-based feature selection" presents three adaptive variants of harmony-based search for feature selection. Gerrard et al. demonstrate in the paper "Applications and design of cooperative multi-agent ARN-based systems" how a control algorithm for multi-agent systems can be designed by assembling simple reaction network motifs. Finally, the paper "An integrative top-down and bottom-up qualitative model construction framework for exploration of biochemical systems" by Wu et al. details a methodology for constructing biological

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biochemical systems that explores stepwise the qualitative interactions among reactants.

We would like to thanks Prof. Vincenzo Loia, the Editor-in-Chief, for offering us the opportunity to organize the Special Issue for presenting selected papers from UKCI 2013. We would also like to thank all researchers who have contributed to the special issue either as authors or reviewers. It is hoped that these selected papers will further promote research activities in computational intelligence and its application to a wide range of applications.