

EDITORIAL PREFACE

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Welcome to the first issue of IJAEC in 2012. We are pleased to invite our readers to enjoy these contributions. During the last decades, applications of hybrid evolutionary algorithms and hybrid models have successfully solved problems in a wide variety of fields such as forecasting, scheduling, classification, knowledge acquirement, biometrics, medical diagnosis, signal processing, and so on. IJAEC will continue receiving numerous interesting and high quality submissions.

In this issue, each paper has been carefully reviewed, and eventually, four regular papers, addressing wide applications of evolutionary computation and evolutionary algorithms, such as adaptive neuro fuzzy inference system (ANFIS) in data warehouse mining, genetic algorithm in friction stir welding (FSW) modeling and in clustering, multi-objective evolutionary algorithms in workflow grid scheduling, and ant colony optimization (ACO) and Tabu search (TS) in parallel machine scheduling.

The first article, by Banerjee from The Pennsylvania State University (USA), employs a multi-objective genetic algorithm based on the robust fuzzy least trimmed squares estimator for data clustering. The proposed clustering methodology optimizes the number of clusters as well as cluster assignment, and cluster prototypes. A three-objective criterion is also used as the minimization functional for the multi-objective genetic algorithm. His experiments indicate that the proposed methodology is superior

to conventional fuzzy clustering algorithms.

The second paper, by Yalaoui from University of Technology of Troyes (France), proposes a set of Heuristics based on priority rules, including the ant colony optimization (ACO) and the Tabu search (TS) method, and an adapted Biskup Hermann Gupta (ABHG) method to minimize the total tardiness without any preemption or splitting in a parallel machine scheduling problem. His experiments conclude that, according to the data structure, the efficiency of proposed heuristic ABHG, ACO and TS is different and significant.

The third paper, by Tiwari from ABES Institute of Technology (India), Tiwari from Amity University (India), and Singh from Dr. B. R. Ambedkar University (India), proposes and simulates a fuzzy-rule based adaptive knowledge warehouse with capabilities to learn and represent implicit knowledge by means adaptive neuro fuzzy inference system (ANFIS). The results manifest that the proposed ANFIS is worth to improve decision making process while implementing knowledge discovery in knowledge warehouse.

The fourth article, by Muttineni from Mother Theresa Institute of Science & Technology (India) and Vundavilli from DVR & Dr. HS MIC College of Technology (India), employs binary coded genetic algorithm (GA) hybridized in a three layered feed forward neural network (FFNN) to solve friction stir welding (FSW) process problems. The train-

ing of the FFNN with the help of GA is a time consuming process. Hence, offline training has been provided to optimize the connection weights and bias values of the neural network. Once, the training is over, the GA trained neural network will be used for online prediction of the mechanical properties of FSW process at different operating conditions. Empirical results obtained reveal that the proposed GA with FFNN is found to be satisfactorily predicted during FSW processing, in addition, FFNN has also performed more consistently over the entire range of operating parameters.

The last article in this issue, by Garg and Singh from National Institute of Technology, Kurukshetra (India), proposes optimal scheduling algorithms, using reference point based multi-objective evolutionary algorithms (R-NSGA-II, R- ϵ -MOEA) to optimize the performance of workflow execution in the presence of conflicting objectives. In this model, it provides the trade-off scheduling solutions based on the users' preferences within the given quality of service constraints. Empirical results show that the approach delivers the preference set of solutions near the multiple regions of interest specified by user simultaneously, and the proposed R- ϵ -MOEA obtains a well converged, well distributed preference set of solutions in a small computation time.

In closing, I would like to thank IGI Global, for making IJAEC possible. In addition, since

IJAEC is a collaborative effort from all members of the Editorial Board, the composited work reveals the diverse topics in EC, I would like to take this opportunity to thank each member for her/his valuable cooperation. All papers submitted to IJAEC undergo a comprehensive review process under the valuable suggestions from each member of Editorial Board. Each paper receives at least five reviews, based on which the Editorial Board member makes a recommendation. The Editorial Board members ensure all papers receive in-depth reviews before any decision is made. These decisions are reviewed by the Editor-in-Chief. I would also like to thank the authors who have chosen IJAEC as a medium to publish their research results. I hope that readers will find these articles useful, informative, and innovative and I am looking forward to hearing your comments, criticisms and suggestions to continuously enhance it and serve you better. You are also invited to contribute to IJAEC according to your interests and expertise.

Enjoy your reading and do not hesitate to send us your thoughts about these papers as well as your own research paper in the exciting field of evolutionary computation! We look forward to reading from you soon, and stay with us.

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Wei-Chiang Samuelson Hong is an associate professor in the Department of Information Management at the Oriental Institute of Technology, Taiwan. His research interests mainly include computational intelligence (neural networks and evolutionary computation), application of forecasting technology (ARIMA, support vector regression, and chaos theory), and tourism competitiveness evaluation and management. Dr. Hong's articles have been published in Applied Mathand Computation, Applied Mathematical Modelling, Applied Soft Computing, Control and Cybernetics, Current Issues in Tourism, Decision Support Systems, Electric Power Systems Research, Energy, Energies, Energy Conversion and Management, Energy Policy, Hydrological Processes, IEEE Transactions on Fuzzy Systems, International Journal of Advanced Manufacturing Technology, International Journal of Electrical Power & Energy Systems, Journal of Systems and Software, Neural Computing and Applications, Neurocomputing, and Water Resources Management, among others. Dr. Hong is currently on the editorial board of several journals, including International Journal of Applied Evolutionary Computation, Neurocomputing, Neural Computing & Applications, Mathematical Problems in Engineering, and Energy Sources Part B: Economics, Planning, and Policy. Dr. Hong presently teaches courses in the areas of forecasting methodologies and applications, hybridizing evolutionary algorithms, and conducts research in the areas of prediction modeling, simulation and optimization; artificial neural network, and novel forecasting development. Dr. Hong serves as the program committee of various international conferences including premium ones such as IEEE CEC, IEEE CIS, IEEE ICNSC, IEEE SMC, IEEE CASE, and IEEE SMCia, etc.. He is a senior member of IIE and IEEE. He is indexed in the list of Who's Who in the World (25th-29th Editions), Who's Who in Asia (2nd Edition), and Who's Who in Science and Engineering (10th and 11th Editions).