Editorial

Habiba Drias*

USTHB, Computer Science Department,
Laboratory of Research in Artificial Intelligence LRIA,
BP 32 El-Alia 16111, Alger, Algeria
E-mail: hdrias@usthb.dz
*Corresponding author

Govindan Kannan

Department of Business and Economics,
University of Southern Denmark,
Campusvej 55, DK5230 Odense M, Denmark
E-mail: gov@sam.sdu.dk

Biographical notes: Habiba Drias received her MS in Computer Science from CWRU, Cleveland, Ohio, USA in 1984 and PhD in Computer Science from USTHB, Algiers, Algeria in collaboration with UPMC, Paris6, France, in 1993. She is a Full Professor at USTHB and directs the Laboratory of Research in Artificial Intelligence. She has worked on satisfiability, multi-agent systems and metaheuristics. She is the author of *Bees Swarm Optimization (BSO)* published in 2005. More recently, her research investigations include intelligent data mining and large scale information retrieval. In addition to publications of more than a hundred papers, she has also served on programme committee for international conferences and organised several conferences.

Govindan Kannan is an Associate Professor in Operations and Supply Chain Management in the Department of Business and Economics at University of Southern Denmark, Denmark. His research interests include supply chain management and reverse logistics. He received a gold medal for Best PhD Thesis Award. He is the Editor-in-Chief for *International Journal of Advanced Operations Management*, *International Journal of Business Performance and Supply Chain Modeling*, *International Journal of Logistics and Supply Chain Management* and *International Journal of Industrial Engineering Practices*. He has published 35 papers in refereed international journals and more than 50 papers in conferences.

The special issue 'Intelligent operations management and global business services' of the *International Journal of Advanced Operations Management* (*IJAOM*) includes extended versions of selected papers presented at ICMWI'2010 and others submitted according to the corresponding call for papers.

ICMWI 2010 technically co-sponsored by IEEE communications society was organised jointly by the Laboratory for Research in AI (LRIA) of USTHB (Algeria) and the Laboratory for Foundations of Computer Science (LIFL) of USTL (France) and held at Algiers. The aim of the International Conference on Machine and Web Intelligence ICMWI 2010 was to deal with two interesting areas, which are machine intelligence on one hand and web intelligence on the other one. What was focused on in this conference

is the investigation of the interaction between both domains and more precisely the way to adapt the great contributions provided by machine intelligence during the last 50 years to the new context of web as these mutations have an important insight for the computer science community. As a consequence, from the interdisciplinary machine and web intelligence, new innovative trends have emerged, among them are some covered topics such as web search, web mining, social network, web agents, human web interaction and cloud and grid computing.

Eighty-seven papers were accepted for presentation at ICMWI'2010 through strict international review process from a set of more than 200 expressions of interest submitted from 19 nationalities. They reflect the state-of-the art of research performed at the international level and provide hints of perspectives for the future generation of machine and web intelligence.

The papers published in this issue have been refereed through a double-blind review process according to the journal requirements.

Chehade et al. in their paper study the problem of multi-objective assembly line design. Two objectives are considered: the minimisation of the cost of the line and the maximisation of the throughput rate. The authors propose multi-objective optimisation methods for an assembly line design. They develop a multi-objective ant colony optimisation algorithm and then, in order to improve the achieved results, the algorithm is coupled with a guided local search. The third method called L-ant, is a multi-objective ant colony algorithm using the Lorenz dominance. The last one called Lorenz-archive is a hybrid algorithm based on genetic algorithms and the Lorenz dominance. In order to compare the different methods, several measuring criteria are applied on the best fronts with the non-dominated solutions.

An emergency vehicle management system is proposed by Ibri et al. The paper addresses the dispatching problem with the aim of minimising the response time for current emergency calls and the covering issue to satisfy future calls in best times. The authors investigate the impact on the service quality, of integrating the dispatching and covering problems in the same model. They propose a hybrid approach combining ant optimisation and tabu search. The algorithm is included in a discrete event programme that simulates the functioning of the system in real time. Several numerical instances are tested in order to compare the integrated approach and the non-integrated one.

In the paper presented by Matai et al., facility layout problem (FLP) which is traditionally formulated as quadratic assignment problem (QAP) is addressed. The problem consisting of facility pair and location pair is formulated as a linear assignment problem (LAP) which can be solved efficiently. A solution of LAP provides lower bound on corresponding QAP formulation of FLP. A new heuristic is proposed for FLP from sets of LAP solution and tested on a benchmark found in the literature. The achieved results show that the proposed heuristic yields better results in comparison with those available in the literature.

Ben-Ayed in his paper deals with the parcel distribution problem and more precisely with the parcel movement timetabling. He proposes a non-linear model, composed of the shipping-time objective function and the time-precedence constraints in view of optimising the daily movements of parcels from their origins to their destinations. The model applied to a real-world case is entered in a spreadsheet where the objective function is evaluated for the possible decision variable values. The timetable generated for a newly designed hub-and-spoke network decreases shipping time by around 30% as compared to the timetable of the existing design.

Tasks scheduling has been widely studied and is considered as one of the most important challenges in embedded hard real-time systems. Theoretically the problem is known to be NP-hard and hence exhaustive search algorithms require an unreasonable runtime in large-scale context. In their paper, Bouridah et al. deal with mono-processor systems with timing, precedence and exclusion constraints with no preemption. In order to cope with the complexity issue, they propose and implement a scatter search based approach for solving the problem. An empirical study is undertaken and comparison is done with results of other algorithms.

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