Guest editorial: special issue – revised selected papers of the LION 6 conference

Youssef Hamadi · Marc Schoenauer

Published online: 23 March 2013
© Springer Science+Business Media Dordrecht 2013

The series of LION conferences (Learning and Intelligent OptimizationN) aims at exploring the boundaries and uncharted territories between Machine Learning, Artificial Intelligence, Mathematical Programming and Meta-heuristics. The main purpose of these events is to bring together experts from the above mentioned areas to discuss new ideas and methods, challenges and opportunities in various application areas, general trends and specific developments.

Following the tradition of earlier LION conferences, this special issue is dedicated to extended versions of three carefully selected papers presented at LION 6, which was held in Paris, France, in January 2012.

The first paper, from Olaf Mersmann, Bernd Bischl, Heike Trautmann, Markus Wagner, Jakob Bossek, and Frank Neumann, characterizes the performance of meta-heuristics for the Traveling Salesperson Problem. It presents a statistical approach that uses features of TSP instances to relate them to the solving performance of a 2-opt based meta-heuristic.

The second paper, from Ethan Burns and Wheeler Ruml, considers the memory requirement of Iterative Deepening in the context of the A* algorithm. The authors propose an algorithm which adaptively chooses appropriate cost bounds during the search. As a result, the new technique can more accurately reach the deepening goal of doubling the amount of search effort between iterations.

The last paper, from Marco Caserta and Stefan Voß, considers the application domain of production planning. It presents a novel math-heuristic based on the Dantzig-Wolfe approach to solve the multi-item multi-period capacitated lot sizing

Y. Hamadi (✉)
Microsoft Research, 21 Station Road, CB1 2FB, Cambridge, United Kingdom
e-mail: youssefh@microsoft.com

M. Schoenauer
INRIA Saclay Île-de-France, EPC TAO (Thème Apprentissage et Optimisation), Université Paris-Sud, LRI, Bt. 490, 91405 Orsay Cedex, France
e-mail: Marc.Schoenauer@inria.fr

problem with setups. This work is the first integration of Dantzig-Wolfe in a meta-heuristic and demonstrates its potential to solve challenging instances in reasonable computational time.

Youssef Hamadi and Marc Schoenauer,
LION 6 chairs.