



Guest editorial: revised selected papers from the LION 12 conference

Ilias S. Kotsireas¹ · Panos M. Pardalos²

Published online: 5 November 2019
© Springer Nature Switzerland AG 2019

The twelfth installment of the conference series "Learning and Intelligent Optimization" (LION) was held in Kalamata, Greece, June 10–15, 2018. The conference program featured four invited speakers, namely, Lefteris Kirousis, who spoke on "Algorithmic aspects of the Lovász local lemma", George Michailidis, who spoke on "Fast Randomized Algorithms for Tensor Operations and their Applications", Yaroslav D. Sergeyev, who spoke on "Deterministic Lipschitz global optimization algorithms and their comparison with meta-heuristics" and Michael N. Vrahatis, who spoke on "Generalizations of the Bolzano theorem for tackling problems with imprecise information".

The conference contributed program consisted of five special sessions:

1. Graphical model selection and applications, Organized by: Valeriy Kalyagin and Mario Guarracino
2. Algorithms and Applied Optimization for Environmental Data Science, Organized by: Francesco Archetti and Ciprian Dobre
3. On the borderline between Data Analysis and Combinatorial Optimisation: models, algorithms, and bounds, Organized by: Alexander Kelmanov and Michael Khachay
4. Computational Intelligence for Smart Cities, Organized by: Enrique Alba, Konstantinos Parsopoulos
5. Machine Learning and Robust Optimization Techniques in Financial Applications, Organized by: Theodore B. Trafalis

In addition, LION 12 featured a very well-received tutorial on "Visual Analytics for High-Dimensional Data Exploration and Engineering Design Optimisation", delivered jointly by Alfred Inselberg (Tel Aviv University and San Diego Supercomputing Center) and Timoleon Kipouros (University of Cambridge).

✉ Ilias S. Kotsireas
ikotsire@wlu.ca

Panos M. Pardalos
pardalos@ufl.edu

¹ CARGO Lab, Wilfrid Laurier University, Waterloo, ON, Canada

² Center for Applied Optimization, University of Florida, Gainesville, FL, USA

In the context of the conference, participants had the opportunity to experience first hand the vibrant city of Kalamata, with its rich culture, exquisite cuisine and a wide spectrum of available activities for adults and children. In addition, conference participants had the chance to visit the Ancient Messini archeological site, located 25 kilometers north of Kalamata, which features the excavated remains of an entire ancient city, with temples, a stadium, a theater and several other places of interest, the visit onsite took two and a half hours.

As always, the work presented at the conference was at the forefront of research performed between the fields of Artificial Intelligence, Mathematical Programming and Optimization, and Algorithmic Design. The conference was very successful in attracting researchers from around the world who have been pushing the boundaries in the intersection of the above fields.

In keeping with tradition of previous LION conferences, we are very pleased to edit this special issue of AMAI, featuring carefully refereed extended versions of papers presented at the conference. For the LION 12 book of proceedings, we refer the reader to [1].

The spectrum of topics covered in this special issue ranges from algorithms for parallel-batching scheduling, constructing combinatorial objects via symbolic computation and rewriting, Bayesian multi-objective optimization, algorithms for the largest subset and longest subsequence problems, heuristics for single-machine scheduling, directed Lovász local lemma, garbage accumulation in smart cities, intelligent heuristics for hotel revenue management, supervised classification of metabolic networks, Euclidean generalized TSP, kernel classification using linear programming, feature maps and large robust nonlinear SVM classifiers, and dynamic search trajectory methods for global optimization.

We would like to thank the authors for contributing their work, the reviewers whose tireless efforts resulted in keeping the quality of the contributions at the highest standards, and, of course, the researchers and practitioners who attended the LION 12 conference. It is because of these people that our field is continuing its growth and is aiming to chart the unexplored areas and consolidate novel knowledge and practice approaches. A special thank you is due to the Technical Program Committee co-Chairs, Roberto Battiti, Director of the LION lab (machine Learning and Intelligent OptimizationN) for prescriptive analytics and Mauro Brunato. Finally, we wish to thank AMAI Editor-in-Chief, Prof. Marty Golumbic, and the Springer Staff, for their invaluable and timely help in the completion of this special issue.

Ilias S. Kotsireas and Panos M. Pardalos, LION 12 General Chairs

References

1. Battiti, R., Brunato, M., Kotsireas, I.S., Pardalos, P.M.: Learning and Intelligent Optimization - 12th International Conference, LION 12, Kalamata, Greece, June 10-15, 2018, Revised Selected Papers, Lecture Notes in Computer Science, LNCS 11353. Springer (2019)

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.