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Evolutionary Computation in Combinatorial Optimization

14th European Conference, EvoCOP 2014
Granada, Spain, April 23-25, 2014
Revised Selected Papers

Springer

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Preface

During past decades, metaheuristic algorithms have been shown to be provenly effective for a wide range of hard combinatorial optimization problems arising in a variety of industrial, economic, and scientific settings. Well-known examples of metaheuristics include, but are not limited to, ant colony optimization, evolutionary algorithms, greedy randomized adaptive search procedures, iterated local search, simulated annealing, tabu search and variable neighborhood search. Metaheuristics have been applied to many different types of optimization problems, including scheduling, timetabling, network design, transportation and distribution, vehicle routing, packing and cutting, satisfiability and general integer linear programing. The series of EvoCOP events is dedicated, in particular, to algorithmic advances in this field of research.

The first edition of EvoCOP was held in 2001. Since then the event has been held annually. Noteably, EvoCOP was the first event specifically dedicated to the application of evolutionary computation and related methods to combinatorial optimization problems. Originally held as a workshop, EvoCOP eventually became a conference in 2004. Past events gave researchers an excellent opportunity to present their latest research and to discuss current developments and applications. Following the general trend of the disappearance of boundaries between different metaheuristics, EvoCOP has broadened its scope in recent years and has solicited papers on any kind of metaheuristic for combinatorial optimization.

This volume contains the proceedings of EvoCOP 2014, the 14th European Conference on Evolutionary Computation in Combinatorial Optimization. It was held in Granada, Spain, during April 23–25, 2014, jointly with EuroGP 2014, the 17th European Conference on Genetic Programming, EvoBIO 2014, the 12th European Conference on Evolutionary Computation, Machine Learning and Data Mining in Computational Biology, EvoMUSART 2014, the Third International Conference on Evolutionary and Biologically Inspired Music, Sound, Art and Design, and EvoApplications 2014 (formerly EvoWorkshops), which consisted of 13 individual tracks ranging from complex systems over evolutionary algorithms in energy applications to evolutionary robotics. Since 2007, all these events are grouped under the collective name EvoStar, and constitute Europe's premier co-located event on evolutionary computation and metaheuristics.

Accepted papers of previous EvoCOP editions were published by Springer in the series Lecture Notes in Computer Science (LNCS – Volumes 2037, 2279, 2611, 3004, 3448, 3906, 4446, 4972, 5482, 6022, 6622, 7245, 7832). Below we report statistics for each conference.

EvoCOP	submitted	accepted	acceptance ratio
2001	31	23	74.2%
2002	32	18	56.3%
2003	39	19	48.7%
2004	86	23	26.7%
2005	66	24	36.4%
2006	77	24	31.2%
2007	81	21	25.9%
2008	69	24	34.8%
2009	53	21	39.6%
2010	69	24	34.8%
2011	42	22	52.4%
2012	48	22	45.8%
2013	50	23	46.0%
2014	42	20	47.6%

The rigorous, double-blind reviewing process of EvoCOP 2014 resulted in the selection of 20 out of 42 submitted papers; the acceptance rate was 47.6%. Even though slightly lower, the number of submissions was in line with previous years, which is–given the current times of crisis and limited funding–a rather remarkable achievement. At this point we would like to emphasize the work of the Program Committee. In fact, the dedicated work of our Program Committee members is essential for the continuing success of EvoCOP. We would also like to mention that acceptance/rejection decisions were not only based on the received referee reports but also on a personal evaluation of the program chairs.

There are various persons and institutions that contributed to the success of the conference and to whom we would like to express our appreciation. First of all, we thank the local organizers of EvoStar 2014, J.J. Merelo and his team, from the University of Granada. They did an extraordinary job. Furthermore, we would like to thank Marc Schoenauer from Inria (France) for his continuing support concerning the MyReview conference management system. We also thank Kevin Sim from Edinburgh Napier University, Mauro Castelli from the Universidade Nova de Lisboa and Pablo García Sánchez from the University of Granada for an excellent web site and publicity material. Thanks are also due to Jennifer Willies and the Institute for Informatics and Digital Innovation at Napier University in Edinburgh, Scotland, for administrative support and event coordination. Finally, we gratefully acknowledge the University of Granada for its support to EvoStar.

Last, but not least, we would like to thank Carlos Cotta, Peter Cowling, Jens Gottlieb, Jin-Kao Hao, Jano van Hemert, Peter Merz, Martin Middendorf, and Günther R. Raidl for their hard work and dedication at past editions of EvoCOP, which contributed to making this conference one of the reference events in evolutionary computation and metaheuristics.

May 2014

Christian Blum
Gabriela Ochoa

Organization

EvoCOP 2014 was organized jointly with EuroGP 2014, EvoBIO 2014, EvoMUSART 2014, and EvoApplications 2014.

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Table of Contents