

Preface

This volume is a compilation of the research program of the 14th International Conference on the Integration of Artificial Intelligence and Operations Research Techniques in Constraint Programming (CPAIOR 2017), held in Padova, Italy, during June 5–8, 2017.

After a successful series of five CPAIOR international workshops in Ferrara (Italy), Paderborn (Germany), Ashford (UK), Le Croisic (France), and Montreal (Canada), in 2004 CPAIOR evolved into a conference. More than 100 participants attended the first meeting held in Nice (France). In the subsequent years, CPAIOR was held in Prague (Czech Republic), Cork (Ireland), Brussels (Belgium), Paris (France), Pittsburgh (USA), Bologna (Italy), Berlin (Germany), Nantes (France), Yorktown Heights (USA), Cork (Ireland), Barcelona (Spain), and Banff (Canada), in 2017 CPAIOR returned to Italy.

The aim of the CPAIOR conference series is to bring together researchers from constraint programming (CP), artificial intelligence (AI), and operations research (OR) to present new techniques or applications in the intersection of these fields, as well as to provide an opportunity for researchers in one area to learn about techniques in the others. A key objective of the conference is to demonstrate how the integration of techniques from different fields can lead to highly novel and effective new methods for large and complex problems. Therefore, papers that actively combine, integrate, or contrast approaches from more than one of the areas were especially welcome. Application papers showcasing CP/AI/OR techniques on innovative and challenging applications or experience reports on such applications were also strongly encouraged.

In all, 73 long and short papers were submitted to the conference. The papers underwent a rigorous peer-reviewing process, with each submission receiving at least three reviews. Overall, 36 papers were selected by the international Program Committee. Four of the accepted papers were then selected for a fasttrack publication process in the *Constraints* journal: only their abstracts appear in these proceedings.

The technical program of the conference was preceded by a master-class on “Computational Techniques for Combinatorial Optimization,” with lectures from Tobias Achterberg, Laurent Michel, Pierre Schaus, and Pascal Van Hentenryck. The main program also enjoyed two invited talks, one from Andrea Lodi on “On the Role of (Machine) Learning in (Mathematical) Optimization” and one from Kristian Kersting on “Relational Quadratic Programming: Exploiting Symmetries for Modelling and Solving Quadratic Programs.” The conference hosted one of the instantiations the DSO Workshop 2017, organized by the EURO Working Group on Data Science Meets Optimization.

Putting together a conference requires help from many sources. We want to thank the Program Committee and all other reviewers, who worked very hard in a busy period of the year: Their effort to provide detailed reviews and discuss all papers in depth after the author feedback to come up with a strong technical program is greatly appreciated. We are also deeply grateful to the staff from the Department of Information Engineering of the University of Padova for their great support in the event

organization, to the chairs from past CPAIOR editions for their advice, and finally to the CPAIOR Steering Committee for giving us the opportunity to contribute to the conference series.

The cost of holding an event like CPAIOR would be much higher without the help of generous sponsors. We received outstanding support from Decision Brain, IBM Research, and Data61. We also thank Gurobi Optimization, GAMS, AIMMS, and COSLING. A final acknowledgment goes to EasyChair and Springer, who allowed us to put together these proceedings.

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