Preface

This volume contains papers accepted for presentation at SoCS 2014, the Seventh Annual Symposium on Combinatorial Search, held in Prague, Czech Republic, on August 15–17, 2014. SoCS 2014 was held in cooperation with AAAI and collocated with the European Conference on Artificial Intelligence (ECAI 2014).

Heuristic search and other forms of combinatorial search are currently very active areas of research in artificial intelligence, planning, robotics, constraint programming, operations research, bioinformatics, and other areas of computer science. SoCS is meant to bring researchers from these areas together to exchange their ideas and cross-fertilize the field. To bring in new ideas, every year SoCS features a special scope on a related research area. Previous SoCS events have provided a special focus on automated planning (2010), search in robotics (2011), grid-based path planning (2012), and algorithm engineering (2013).

In 2014, SoCS specifically invited submissions from researchers in the big data community and related areas that work on large search problems. This special scope on big data has not been a clear success, but attracted a smaller number of stronger submissions outside the traditional AI search communities.

Building on the positive experience of SoCS 2012 and SoCS 2013, the SoCS 2014 call for papers solicited not only submissions of original work but also invited poster presentations and extended abstracts of previously published papers in order to foster the exchange of ideas.

Original papers could be technical papers that are expected to convey substantial technical contributions to the field, or position papers discussing ideas and concepts related to search. Both could be submitted as full papers or research abstracts. All types of original submissions were reviewed using the same rigorous process with three reviewers per paper.

Full original papers were evaluated according to the usual standards of relevance, significance, novelty, clarity, technical soundness and technical quality. For position papers, we did not expect a novel technical contribution. Instead, they were evaluated with respect to their interest to the field and their potential of inciting a stimulating discussion. Research abstracts were reviewed based on the same criteria as full papers, but could also report on ongoing work that has already reached a certain level of maturity.

Previously published papers describe new research which has been reported in other venues in the last year. They could either be submitted for presentation only or with an original extended abstract for inclusion in these proceedings. These papers underwent a light reviewing process, handled by the chairs, to ensure that they are of interest to the SoCS community. The extended abstract was reviewed by an additional reviewer to ensure that it meets the required quality standards.

For SoCS 2014, we received a total of 45 submissions. This is a significant drop from 2013, but — considering there was no Symposium on Abstraction, Reformulation, and Approximation this year (SARA only takes place in odd-numbered years), and considering that SoCS took place first time aligned with ECAI instead of AAAI/IJCAI — SoCS proved to be a healthy AI event, showing stable ground for an independent community.

Of the 45 submissions, we found 32 full paper submissions of original work, and 5 previously published papers. The papers were reviewed by a program committee made up of 44 members, assisted by 19 additional external reviewers. As a result of this evaluation, 34 papers were accepted: 22 full papers, and 7 research abstracts of original work (one of which was withdrawn), and 5 previously published papers (of which 3 were submitted with an extended abstract included in these proceedings).

The program of the conference also featured two invited talks given by highly distinguished scientists: Alexander Reinefeld gave the talk Past, Pre-

sent, Parallel: Heuristic Search in a Changing Computer World, and Sven Koenig presented Research Directions for Path Planning with A*. Their invitation as well as the travel support for students has been made possible by the generous support of the *Artificial Intelligence Journa*l (AIJ), the US National Science Foundation (NSF), and Czech Society for Cybernetics and Informatics.

We thank all members of the Program Committee, as well as our external reviewers, for their effort in the reviewing process. We also thank those involved in the various aspects of the organization of SoCS 2014; Milena Zeithamlová for taking care of the local arrangements; the SoCS council and organizers of previous years for answering our many questions, sharing their opinion on various aspects of the organization, and providing us with statistics on previous SoCS symposia.

Special thanks go to Malte Helmert and Gabriele Röger, who gave us access to the SoCS 2013 web pages content. We also thank Richard Korf for organizing the NSF support. Finally and most importantly, we thank the combinatorial search community who supported this event by submitting their work and participating actively in it.

Stefan Edelkamp and Roman Barták
Symposium Chairs