

Preface

The 18th International Symposium on Combinatorial Search (SoCS) has been held at the University of Glasgow, Scotland, United Kingdom in 2025, from the 12th to the 15th of August. The symposium for this edition has been run jointly with the International Conference on Principles and Practice of Constraint Programming (CP) and the International Conference on Theory and Applications of Satisfiability Testing (SAT) which lasted from the 10th to the 15th of August. The symposium co-chairs were Maxim Likhachev, Hana Rudová, and Enrico Scala. The local arrangement co-chairs were Ciaran Mccreesh and Blair Archibald.

Heuristic search and other forms of combinatorial search optimization are fundamental and very active areas of research in artificial intelligence, robotics, planning, and other areas of computer science. The International Symposium on Combinatorial Search (SoCS) is meant to bring researchers in such areas together to exchange ideas and cross-fertilize the field. Indeed, SoCS is a forum for researchers and paper submissions in all fields that use combinatorial search, including artificial intelligence, planning, robotics, constraint programming, metareasoning, operations research, navigation, and bioinformatics. The symposium also welcomes submissions presenting real-world applications of heuristic search.

For the 2025 edition, we received 59 long paper submissions, 17 short paper submissions, and 17 extended abstract submissions (93 total). The reviewing process was double blind and included a rebuttal and a discussion phase among the reviewers selected from our Program Committee, which counted 91 members. Each long and short paper has been reviewed by at least three reviewers. Most of the extended abstracts have also received three light reviews. For the final program, 22 long papers (37 %) and 9 short papers (53 %) were accepted for presentation, and 15 extended abstracts for poster presentation. Note that some long technical papers were accepted as an extended abstract only. We would like to extend our sincere thanks to all of the members of the Program Committee for their excellent work in thoroughly reviewing and discussing the submissions. 19 students have been accepted for participation in our Doctoral Consortium program, which was co-chaired by

Lukáš Chrpa (Czech Technical University) and Francesco Percassi (University of Huddersfield).

The joint conference program has also featured a plenary talk by Sylvie Thiébaux (Australian National University) invited by SoCS, a plenary talk by Christine Solnon (CITI, INSA Lyon/INRIA) invited by CP, and Ruzica Piskac (Yale University) invited by SAT. Moreover, we had an invited talk for the Doctoral Consortium given by Mauro Vallati (University of Huddersfield), and two tutorials, one by Christopher Beck (University of Toronto) and one by Daniel Harabor (Monash University).

Finally, we thank the United States National Science Foundation, Amazon Robotics, and the Artificial Intelligence Journal for sponsoring SoCS, and Cadence, J. P. Morgan, and Potassco Solutions for sponsoring the joint conference. We also acknowledge the support of the Lord Provost and Glasgow City Council in providing the civic reception, and the assistance by the Glasgow Convention Bureau and the University of Glasgow.

Maxim Likhachev, Hana Rudová, and Enrico Scala
SoCS 2025 Conference Chairs

Best Papers

Best Paper

From Agent Centric to Obstacle Centric Planning: A Makespan-Optimal Algorithm for the Multi-Agent Warehouse Rearrangement Problem

Yaakov Sherma, Eyal Weiss and Oren Salzman

Best Student Paper

Sub-Microsecond Grid Path Planning, at What Cost?

Mark Carlson, Daniel Harabor and Peter J. Stuckey

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