Algorithm selection for combinatorial search problems: a survey. (English) Zbl 1461.68218

Summary: The Algorithm Selection Problem is concerned with selecting the best algorithm to solve a given problem on a case-by-case basis. It has become especially relevant in the last decade, as researchers are increasingly investigating how to identify the most suitable existing algorithm for solving a problem instead of developing new algorithms. This survey presents an overview of this work focusing on the contributions made in the area of combinatorial search problems, where Algorithm Selection techniques have achieved significant performance improvements. We unify and organise the vast literature according to criteria that determine Algorithm Selection systems in practice. The comprehensive classification of approaches identifies and analyses the different directions from which Algorithm Selection has been approached. This chapter contrasts and compares different methods for solving the problem as well as ways of using these solutions.

For the entire collection see Zbl 1460.68004.

MSC:

68T20 Problem solving in the context of artificial intelligence (heuristics, search strategies, etc.)
68W01 General topics in the theory of algorithms

Full Text: DOI arXiv