Bootstrapping Abstract Planning with Experience Graphs

Aram Ebtekar, Maxim Likhachev
Carnegie Mellon University
5000 Forbes Ave,
Pittsburgh, PA 15213

Abstract

A* and variants are regularly applied to plan paths in a graph. Rather than planning each query from scratch, we follow the recent trend across AI and robotics of collecting and reusing information, i.e. learning. Experience-graphs (E-graphs) store past plans in order to speed up related planning episodes in the future. New challenges arise when we try to apply E-graphs in high-level planning, where the state graph is implicitly exponentially sized in its description length. We describe an algorithm that combines E-graphs with a standard STRIPS relaxation to form epsilon-admissible heuristics in a domain-independent manner.

Introduction

All papers submitted for publication by AAAI Press must be accompanied by a valid signed copyright form or, in the case of technical reports, by a valid signed permission to distribute form. There are no exceptions to this requirement. You must send us the