Universität Basel

Research Project

Safe Pruning in Optimal State-Space Search

Third-party funded project

Project title Safe Pruning in Optimal State-Space Search
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Organisation / Research unit
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This project investigates pruning techniques in optimal state space planning. In particular, we consider techniques based on *partial order reduction* and *symmetry reduction*.

Partial order reduction has been originally proposed in the area of computer aided verification. The basic idea is to tackle the state explosion problem by avoiding a blow-up that is induced by independent actions. Recent results have shown that such techniques can be powerful in the area of automated planning as well. In SPOSSS, we investigate partial order reduction techniques for computer aided verification and for planning both theoretically and practically.

Similar to partial order reduction, techniques based on symmetry reduction have been originally proposed in the area of computer aided verification. In contrast to partial order reduction which exploits symmetric action sequences, techniques based on symmetry reduction compute a quotient structure of the state space, where symmetrical states are considered equivalent. In SPOSSS, we investigate symmetry reduction techniques and their applications to planning.

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ID	Kreditinhaber	Kooperationspartner	Institution	Laufzeit - von	Laufzeit - bis
2811778	Helmert, Malte	Fox, Maria	King's College, London	01.11.2012	31.07.2016
2811779	Helmert, Malte	Rosenschein, Jeffrey	The Hebrew University of Jerusalem	01.11.2012	31.10.2014

ID	Kreditinhaber	Kooperationspartner	Institution	Laufzeit - von	Laufzeit - bis
2811780	Helmert, Malte	Podelski, Andreas	Albert-Ludwigs-Universität Freiburg	01.11.2012	31.01.2017