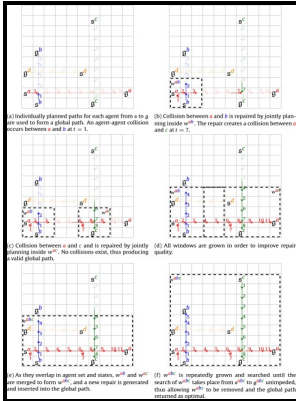# Generating abstraction hierarchies - an automated approach to reducing search in planning

Kluwer Academic Publisher - Automatically generating abstractions for planning

Description: -
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Abstraction.
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The Paul Anthony Brick lectures
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This edition was published in 1993

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Tags: #Generating #Abstraction #Hierarchies: #An #Automated #Approach #to #Reducing #Search #in #Planning #/ #Edition #1 #by #Craig #A. #Knoblock

Generating Abstraction Hierarchies: An Automated Approach to Reducing Search in Planning by Craig A. Knoblock

This technique results in reducing the number and simplifying the topology of the states which shape a problem space. Generating Abstraction Hierarchies presents a completely automated approach to generating abstractions for problem solving.

Craig A. Knoblock

An abstraction hierarchy with this property allows a problem to be decomposed such that the solution in an abstract space can be held invariant while the remaining parts of a problem are solved. The abstractions are generated using a tractable, domain-independent algorithm whose only inputs are the definition of a problem space and the problem to be solved and whose output is an abstraction hierarchy that is tailored to the particular problem.

Craig A. Knoblock

The abstractions generated by ALPINE are tested in multiple domains on large problem sets and are shown to produce shorter solutions with significantly less search than problem solving without using abstraction.

Craig A. Knoblock

The abstractions are generated using a tractable, domain-independent algorithm whose only inputs are the definition of a problem space and the problem to be solved and whose output is an abstraction hierarchy that is tailored to the particular problem Generating Abstraction Hierarchies presents a completely automated approach to generating abstractions for problem solving. For such cases, in this paper we explain a technique which provides a quick proof that finding a solution is actually impossible.

Generating Abstraction Hierarchies

The list of bibliography 97 entries is also worth mentioning.

Automatically generating abstractions for planning

Problem solvers are computational systems which make use of different search algorithms for solving problems. The algorithm for generating abstractions is implemented in a system called ALPINE, which generates abstractions for a hierarchical version of the PRODIGY problem solver. An abstraction hierarchy with this property allows a problem to be decomposed such that the solution in an abstract space can be held invariant while the remaining parts of a problem are solved.

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Generating Abstraction Hierarchies will be of interest to researchers in machine learning, planning and problem reformation. A: Generating Abstraction Hierarchies: An Automated Approach to Reducing Search in Planning. Generating Abstraction Hierarchies will be of interest to researchers in machine learning, planning and problem reformation.

Automatically generating abstractions for planning

The abstractions generated by ALPINE are tested in multiple domains on large problem sets and are shown to produce shorter solutions with significantly less search than problem solving without using abstraction. Generating Abstraction Hierarchies presents a completely automated approach to generating abstractions for problem solving. In: Abstraction, Reformulation and Approximation SARA 2007 , pp.

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