

短文

基于函数逼近的学习式搜索

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摘要

本文将函数逼近的方法引入到学习式搜索中,使学习式搜索通过一定数量的解题训练后可以建立起一个任意一致逼近理想函数 $h^*(\cdot)$ 的启发估计函数 $h(\cdot)$.本文给出了一个这样的学习式搜索算法A-Bn,并证明了当训练例子集充分大后,A-Bn可在多项式复杂度内解决任一后来提交的同类问题.

关键词 [人工智能](#) [启发式搜索](#) [机器学习](#) [复杂度](#)

分类号

Polynomial Approximation Based Learning Search

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Abstract

In this paper, Polynomial Approximation method and theory are introduced into the research of Learning Search of Artificial Intelligence. In this way, we can use a search algorithm repeatedly to construct a heuristic estimate function $h(\cdot)$ which uniformly approximates to the optimal estimate function $h^*(\cdot)$ with arbitrarily high precision. One of such learning search algorithms, A-Bn, is presented and it is shown that, when the number of training samples becomes large enough, the worst-case complexity of A-B, can be reduced to $O(\text{poly}(N))$, where N is the length of the optimal solution path, $\text{poly}(N)$ is a polynomial of N .

Key words [Artificial Intelligence](#) [Heuristic Search](#) [Machine Learning](#) [Complexity](#)

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