



[Home](#) | [Login](#) | [Logout](#) | [Access Information](#) | [Alerts](#) | [Purchase History](#) | [Cart](#) | [Sitemap](#) | [Help](#)

Abstract

[View TOC](#) | [Previous Article](#) | [Next Article](#)

You are not logged in.

Guests may access Abstract records free of charge.

Login

Username

Password



[» Forgot your password?](#)

Please remember to log out when you have finished your session.

You must log in to access:

- Advanced or Author Search
- CrossRef Search
- AbstractPlus Records
- Full Text PDF
- Full Text HTML

Access this document

Full Text: [PDF](#) (257 KB)

[» Learn more about subscription options](#)

Rights and Permissions

[» Learn More](#)

Download this citation

Available to subscribers and IEEE members.

BROWSE

SEARCH

IEEE XPLOR GUIDE

SUPPORT

[e-mail](#) [printer friendly](#)

Solving Multi-Agent Markov Decision Processes using learning automata

Abtahi, Farnaz Meybodi, Mohammad Reza
Amirkabir University of Technology, Department of Computer Engineering and IT, Tehran, Iran;

This paper appears in: [Intelligent Systems and Informatics, 2008. SISY 2008. 6th International Symposium on](#)

Publication Date: 26-27 Sept. 2008

On page(s): 1-6

Location: Subotica, Serbia,
ISBN: 978-1-4244-2406-1

Digital Object Identifier: 10.1109/SISY.2008.4664909

Current Version Published: 2008-11-05

Abstract

Multi-Agent Markov Decision Processes (MMDPs) are widely used for modeling many types of multi-agent systems. In this paper, two new algorithms based on learning automata are proposed for solving MMDPs and finding optimal policies. In the proposed algorithms, Markov problem is described as a directed graph. The nodes of this graph are the states of the problem, and the directed edges represent the actions that result in transition from one state to another. Each node in the graph is equipped with a learning automaton and its actions are the outgoing edges of that node. Each agent moves from one node to another and tries to reach the goal state. In each node, the agent chooses its next transition with help of the learning automaton in that node. The actions taken by learning automata along the path traveled by the agent is then rewarded or penalized based on the cost of the traveled path according to a learning algorithm. This way the optimal policy for the agent will be gradually reached. The results of experiments have shown that our proposed algorithms perform better than the existing learning automata based algorithms in terms of cost and the speed of reaching the optimal policy.

Index Terms

Available to subscribers and IEEE members.

References

Available to subscribers and IEEE members.

Citing Documents

Available to subscribers and IEEE members.

[◀ View TOC](#) | [◀ Previous Article](#) | [Next Article ▶](#) | [Back to top ▲](#)

[Help](#) [Contact Us](#) [Privacy & Security](#) [IEEE.org](#)

© Copyright 2008 IEEE – All Rights Reserved

