

Stochastic Planning in Large State Spaces

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Abstract

ABSTRACT

1 Introduction

2 Background

2.1 Planning

2.2 Stochastic Planning

2.3 Markov Decision Process

2.4 Hidden Parameter Markov Decision Process

2.5 Object Oriented Markov Decision Process

2.6 Solving Markov Decision Processes

2.6.1 Complexity

Summary of Littman's paper.

2.6.2 Linear Programming

2.6.3 Value Iteration

Algorithm Overview.

2.6.4 Policy Iteration

Algorithm Overview.

2.6.5 RTDP

Algorithm Overview.

2.7 Transfer Learning

2.7.1 Options

2.7.2 Macroactions

3 HIP-OO-MDPs

3.1 Preliminaries

3.1.1 Definitions

Idea: Domain is everything but R and S, but includes the object classes and stuff AND a parameter θ .

Task: An assignment to the parameter vector theta (includes number of objects, attribute assignments, etc.)

Problem Generator: an randomized poly-time turing machine that scrambles up the values of theta.

3.1.2 Domains

Minecraft, other?

4 Action Pruning

5 Goal-Based Action Priors

Affordances paper.

Logistic Regression results.

6 Conclusion