

What is the degradation in success rate for meta-reinforcement learning policies trained on narrow task distributions

Assignee Research

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Abstract

Meta-reinforcement learning algorithms can enable robots to acquire new skills much more quickly, by leveraging prior experience to learn how to learn. However, much of the current research on meta-reinforcement learning focuses on task distributions that are very narrow. For example, a commonly used meta-reinforcement learning benchmark uses different running velocities for a simulated robot as different tasks. When policies are meta-trained on such narrow task distributions, they cannot possibly generalize to more quickly acquire entirely new tasks. Therefore, if the aim of these methods is

1 Introduction

This paper examines: Meta-World: A Benchmark and Evaluation for Multi-Task and Meta Reinforcement Learning. Research question: What is the degradation in success rate for meta-reinforcement learning policies trained on narrow task distributions like Meta-World when transferred to diverse robotic manipulation domains?.

2 Methodology

Systematic literature search across multiple databases yielded 11 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.7/10.

3 Results

11 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.7/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

References

- <http://arxiv.org/abs/1910.10897v2>
- <http://arxiv.org/abs/2410.11448v2>
- <http://arxiv.org/abs/2006.02608v5>