Maximum Mutation Reinforcement Learning for Scalable Control

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Abstract

Scalable performance a practical concern in real-world settings
Sensitive hyperparameters hinder scalability
Acquiring robust behaviors is challenging with gradient-based schemes
Abstract exploration from exploitation
Dominant skill transfer between offsprings

Mutation rate maximization allowing the agent to act as randomly as possible
Hindsight genetic crossovers and soft winner-selection for dominant skill transfer

Improved robustness to hyperparameters as a result of Automatic Mutation Tuning
Robust behaviors acquired at execution time
Computationally-efficient scalability to high-dimensional action spaces