

Title

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1. Introduction

Reinforcement Learning (RL) is the area of machine learning whereby an agent learns optimal behavior through repeated interactions with an environment that maximize some notion of a cumulative reward.

Why it differs from other methods.

Some common applications (famous examples).

Challenges in designing a system

Introduction of basic concepts.

2. Methods

2.1. Grid World

2.2. Cartpole

Studies (2007)

Brockman *et al.* (2016)

$$\ddot{\theta} = \frac{g \sin(\theta) - \cos(\theta) \left(\frac{-F - m_p L \dot{\theta}^2 \sin(\theta)}{m_t} \right)}{L * \left[\frac{4}{3} - \frac{m_p \cos^2(\theta)}{m_t} \right]} \quad (2.1)$$

$$\ddot{x} = \frac{F + m_p L \left(\dot{\theta}^2 \sin(\theta) - \ddot{\theta} \cos(\theta) \right)}{m_t} \quad (2.2)$$

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3. Conclusions

REFERENCES

- BROCKMAN, GREG, CHEUNG, VICKI, PETTERSSON, LUDWIG, SCHNEIDER, JONAS, SCHULMAN, JOHN, TANG, JIE & ZAREMBA, WOJCIECH 2016 Openai gym, arXiv: arXiv:1606.01540.
- STUDIES, NEURAL 2007 Correct equations for the dynamics of the cart-pole system. *Romania* pp. 1–6.