Udacity

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1 Introduction

This work is about solving the second project of the deep reinforcement learning course. In this environment the goal is to control a double-jointed arm. The agent receives an +0.1 reward if the arm is in the goal position, The agent observes an state vector with an 33 dimension corresponding to position, rotation, velocity, and angular velocities of the arm. The action has an 4 dimensional action space every entry is continuous between -1 and 1.

2 Environment

The Environment is given from Unity Machine Learning Agents (ML-Agents). The state space has 37 dimensions and contains the agent's velocity, along with ray-based perception of objects around the agent's forward direction and the agent has 4 discrete actions forward, backward, left and right

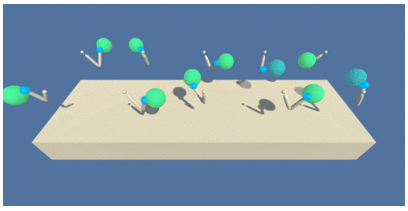

Figure 1: Continuous enviroment

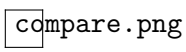

Figure 2: Scores of the different agents

3 Learning algorithm

3.1

4 Results

5 Future ideas to improve the performance

References