Report for Project 2: Continuous Control

Udacity Deep Reinforcement Learning Nanodegree

April 13, 2020

1 The Implementation

The main part of the code is written in the Jupyter Notebook `Continuous_Control.ipynb`, which guides the user when executing the code. The intelligent agent has been implemented in the `agent.py` file, and it uses two neural networks, for its actor and its critic, as defined in `model.py`.

1.1 The Neural Networks

The networks as defined in `model.py` by default have two hidden layers with 64 neurons each. For the critic, the actions are fed into the network as inputs to the second hidden layer, while states are directly input to the first layer.

1.2 The Agent Class

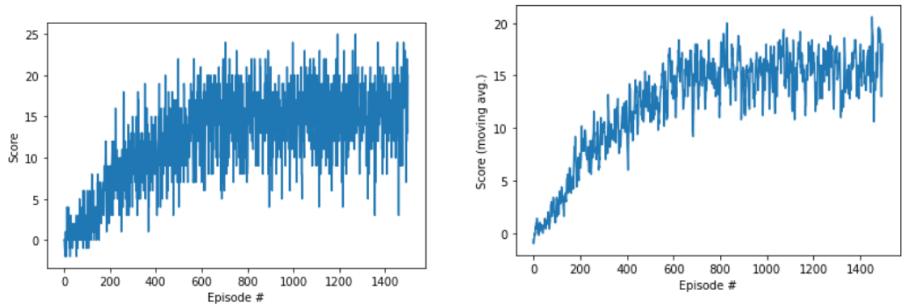
The agent class is capable of learning according to the Deep Deterministic Policy Gradient (DDPG) algorithm as discussed in class.

The `ReplayBuffer` class is taken from the lessons and comprises an initialization method as well as methods for adding experiences, sampling from the stored experiences, and a function for returning the current length of the buffer.

2 Results

As Figure 1 shows, the agent is capable of learning quite fast, the environment has been solved within 485 episodes.

3 Ideas for Improvements



(a) Original.

(b) Moving average with window size 5.

Figure 1: The scores reached by the intelligent agent.