Udacity - Deep Reinforcement Learning Course

Project 1: Navigation

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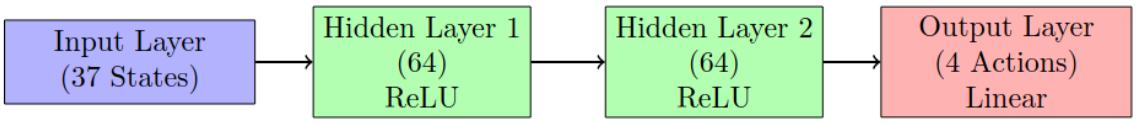
This document summarizes the relevant details of the proposed solution to Project 1 of the course.

DQN Agent Implementation

The implementation of the agent was made starting from the code provided in the DQN lesson, making minor modifications to facilitate its use in the main notebook of the project. The code for this is in the **dqn_agent.py** file.

The agent uses a Feed Forward neural network with the following architecture

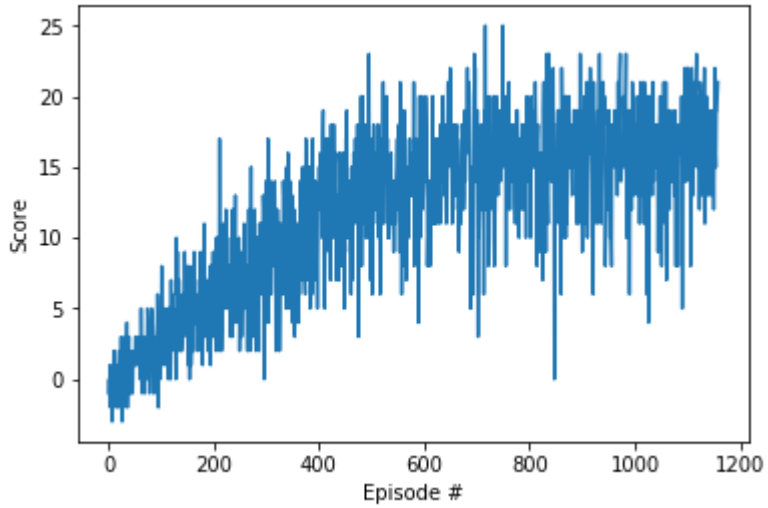


In addition, the agent uses the following hyperparameters:

- **Replay Buffer size:** 100,000
- **Batch Size:** 64
- **Gamma (Discount factor):** 0.99
- **Tau (Parameter update):** 0.001
- **Learning rate:** 0.0005

Results

The graph below shows the evolution of the agent's reward during training



After 600 episodes, the agent reached the minimum score required to pass the project (13). However, the agent trained to achieve an average score of 16.5. The model resulting from this training is stored in the **checkpoint.pth** file.

Others

As feedback to the Udacity team, although I loved the project, keep in mind that the project uses outdated libraries. I suggest that a new version of the project be generated with newer versions.