

# Report

## Algorithm

Two algorithms implemented:

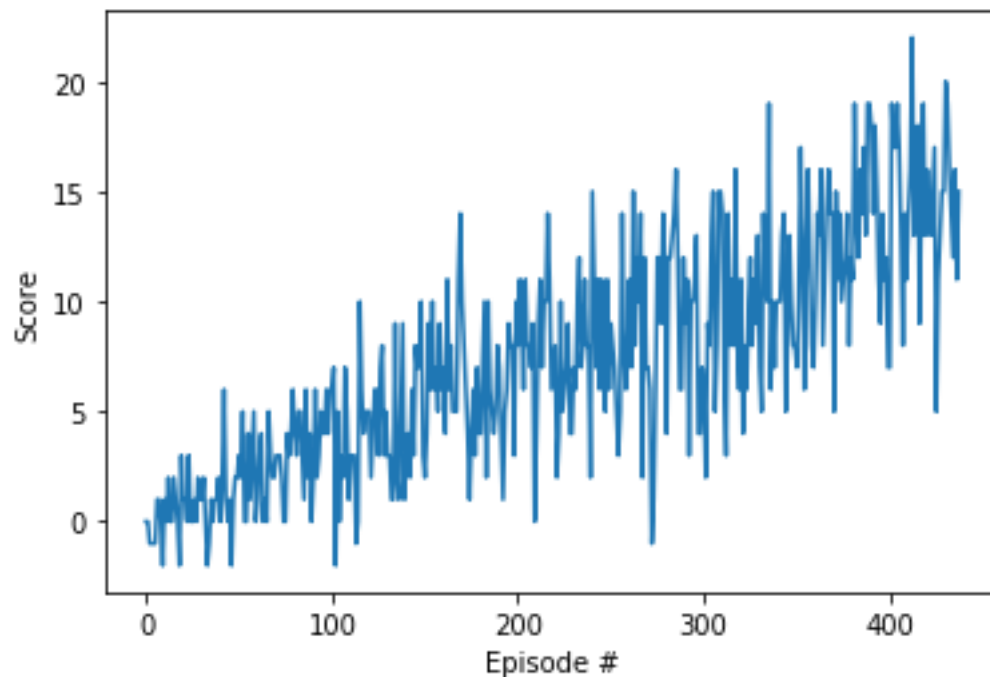
- DQN (*dqn\_agent.py*)
- Double DQN (*double\_dqn\_agent.py*)

DQN provided faster solution of the environment (might be due to the selection of the parameters)

Parameters chosen for DQN:

```
BUFFER_SIZE = int(1e5) # replay buffer size
BATCH_SIZE = 64         # minibatch size
GAMMA = 0.99           # discount factor
TAU = 1e-3             # for soft update of target parameters
LR = 5e-4              # learning rate
UPDATE_EVERY = 4       # how often to update the network
```

Environment was solved in 338 episodes (as can be seen in the following chart as well as in the *Navigation.ipynb*).



## Improvements

In order to make the learning of the agent faster, variety of parameters should be explored. This should lead to faster solution especially in the Double DQN. For comparison or as an alternative solution, Prioritized Experience Replay will be implemented later.