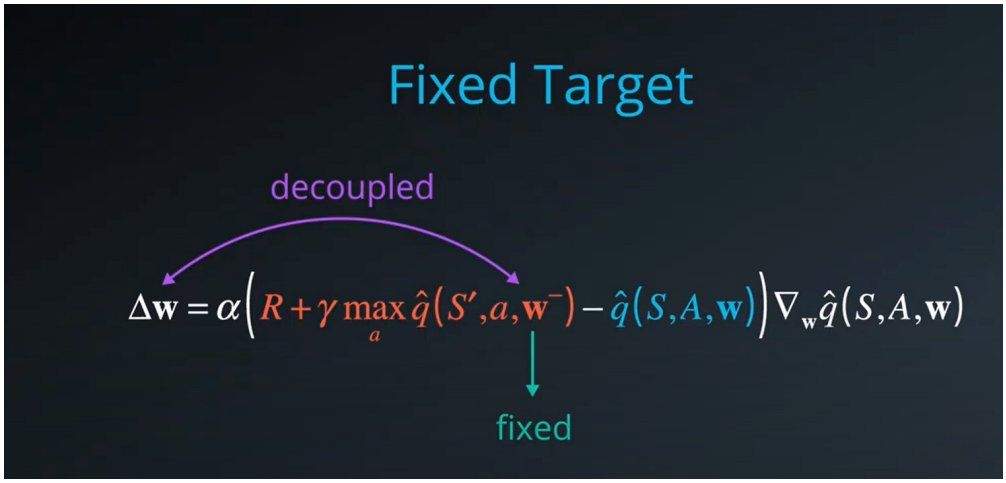
Report

Learning Algorithm:

Our agent uses dqn learning algorithm to to train itself. In dqn we train a neural network to estimate the q value for every action.
We uses experience replay to avoid the harmful correlation obtained by taking samples from sequential order. We also use fixed Q targets to avoid carrot stick dangling and avoid noise.

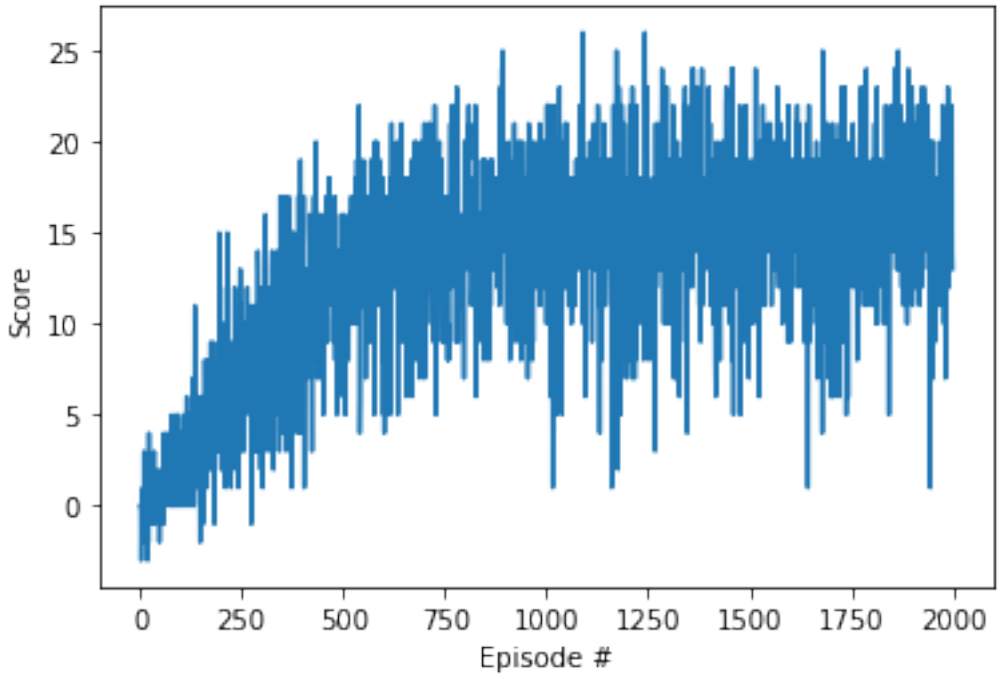


Hyperparameters:

Epsilon is used in epsilon greedy policy the value of epsilon determines the randomness
eps_start=1.0, eps_end=0.01, eps_decay=0.995

replay buffer size = 100000
minibatch size for training = 64
discount factor GAMMA = 0.99
for soft update of target parameters TAU = 1e-3
LR for the optimizer = 5e-4
UPDATE_EVERY = 4 steps for every learning step

plot of average rewards:



QNetwork deep learning Model:

First layer: 37 X 64

Second layer: 64 X 64

Final layer: 64 X 4