

Banana-Collector

Navigate to collect Bananas : This is first project for Udacity Deep Reinforcement Learning Nanodegree.

Objective:

Objective is to Collect Yellow bananas and avoid Blue bananas. There is +1 reward for a yellow banana and -1 is given as penalty if a blue banana is collected.

Environment:

The state space has 37 dimensions and contains the agent's velocity, along with ray-based perception of objects around agent's forward direction.

Permissible Actions:

- 0 - Up
- 1 - Down
- 2 - Left
- 3 - Right

Episodic Task:

The agent has to learn how to best select actions. To complete the task, agent needs an average score of +13 over 100 consecutive episodes.

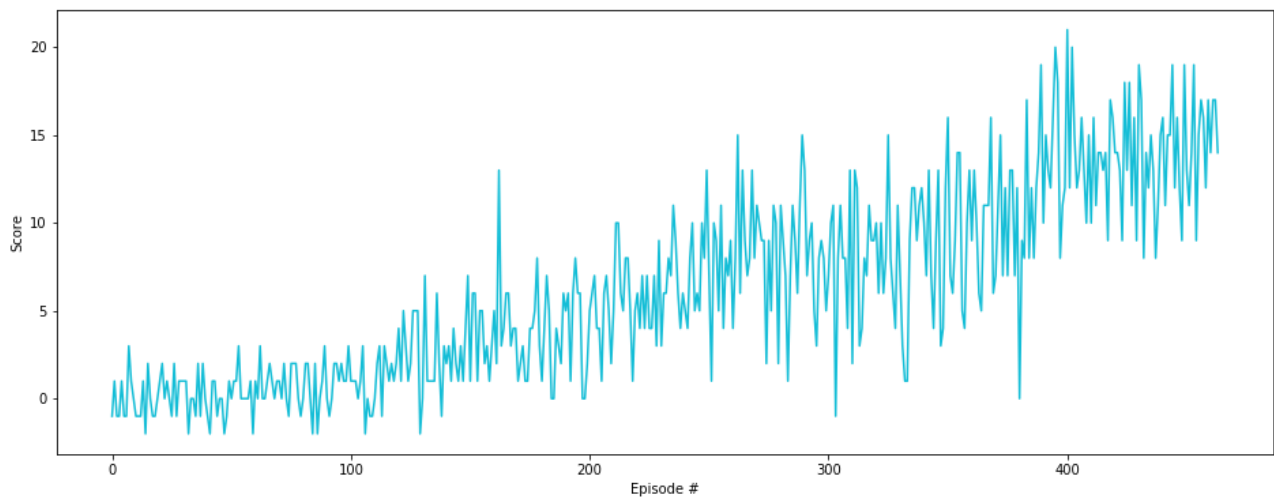
Notebook Structure:

- Install Packages**
- Examine the State and Action Spaces**
- Define QNetwork**
- Define Agent**
- Define DQN**
- Save Model Weights**

Plot Rewards
Plot Actions
Plot Environment States
Close Environment

Reward Plot:

The Agent is able to secure an average score of +13 over 100 consecutive episodes in 464 episodes.



Extra Task:

To to get average +16 over 100 consecutove tasks: Agent is able to solve in about **1188** episodes.

Github Link:

<https://github.com/kathakali/Banana-Collector>