https://gym.openai.com/envs/LunarLander-v2/

LunarLander-v2

Landing pad is always at coordinates (0,0). Coordinates are the first two numbers in state vector. Reward for moving from the top of the screen to landing pad and zero speed is about 100..140 points. If lander moves away from landing pad it loses reward back. Episode finishes if the lander crashes or comes to rest, receiving additional -100 or +100 points. Each leg ground contact is +10. Firing main engine is -0.3 points each frame. Solved is 200 points. Landing outside landing pad is possible. Fuel is infinite, so an agent can learn to fly and then land on its first attempt. Four discrete actions available: do nothing, fire left orientation engine, fire main engine, fire right orientation engine.


2.60

Episode 1

RandomAgent on LunarLander-v2

Game of choice LunarLanderv2 from https://gym.openai.com/envs/#box2d

Solved is 200 points (over 100 consecutive trials)

<u>DEEP Q LEARNING with REPLAY BUFFER</u>
With

```
BUFFER_SIZE = int(1e5)   # replay buffer size
BATCH_SIZE = 128          # minibatch size
GAMMA = 0.99              # discount factor
TAU = 1e-3               # for soft update of target parameters
LR = 1e-3               # learning rate
UPDATE_EVERY = 5         # how often to update the network
```

```
Episode 600     Average Score: 176.87
```
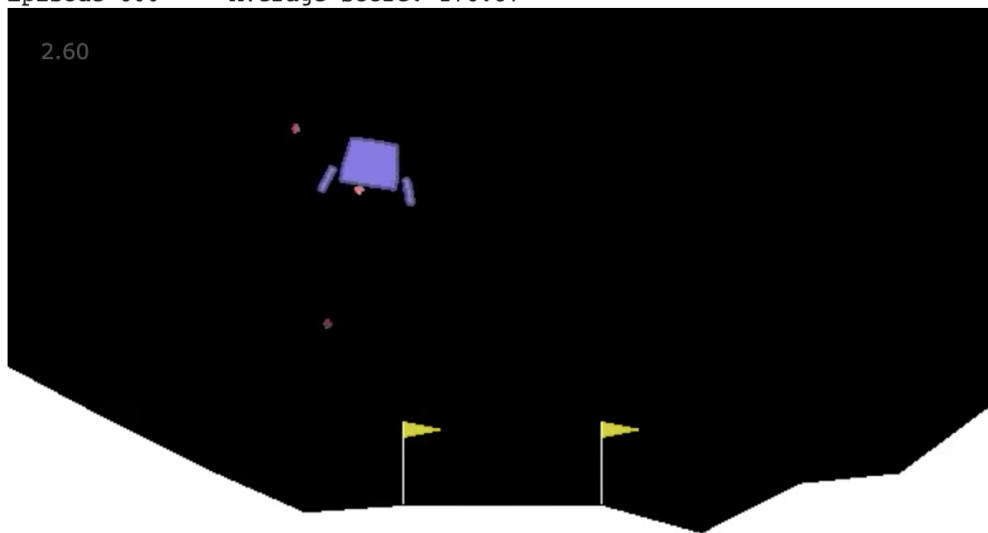


```
Episode 648     Average Score: 201.07
Environment solved in 548 episodes!     Average Score: 201.07
SOLVED!!!!!!
```