

Homework 3

Reinforcement Learning

Develop a RL model to be deployed in the Lunar Lander environment available on OpenAI Gym. For comprehensive details about the Lunar Lander environment, refer to the following webpage: https://gymnasium.farama.org/environments/box2d/lunar_lander/.

Your submission should include the following components:

- Code Files: (File names are flexible)
 - train.py: This script should handle the training of the model, save the trained model, and generate a graph illustrating the reward curve across episodes.
 - test.py: This script should load the trained model and execute a test run, capturing the performance in a video.
 - Model File: A .pth file representing the trained model.
- Image file: reward curve graph (reward per episode)
 - The example graph below shows only 1000 episodes but should run until converged.
- YouTube link (URL):
 - Example: <https://youtu.be/1ISY1HpLVdE>
 - you must create a video demonstration of your trained models in action. Please upload this video to YouTube and submit the link along with your assignment. Ensure that the video is set to public, allowing unrestricted access.

An example code for TD Actor-Critic will be provided as a reference code. (Option 1) Improve its performance (reward curve) by modifying the code, or (Option 2) Implement a different algorithm you prefer for a better reward curve than below.

