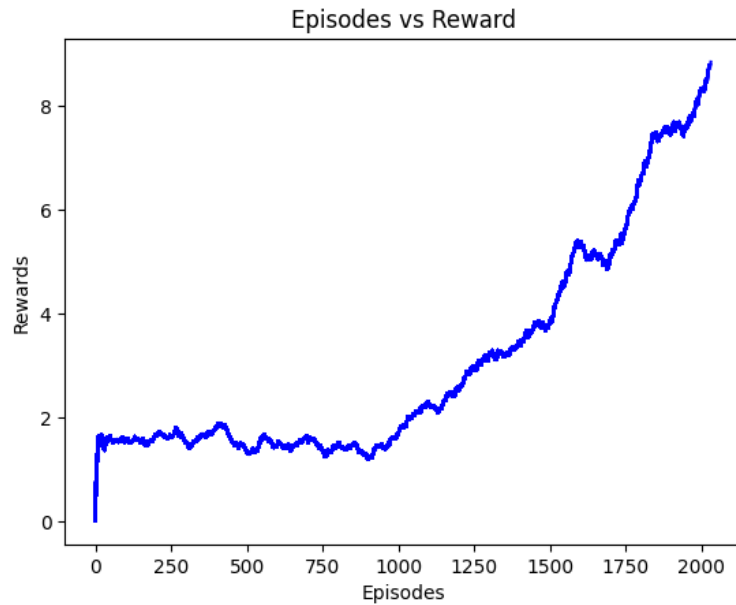


Name(s): Zhiyuan Han, Huey-Chii Liang
Netid(s): zhan38, hcliang2

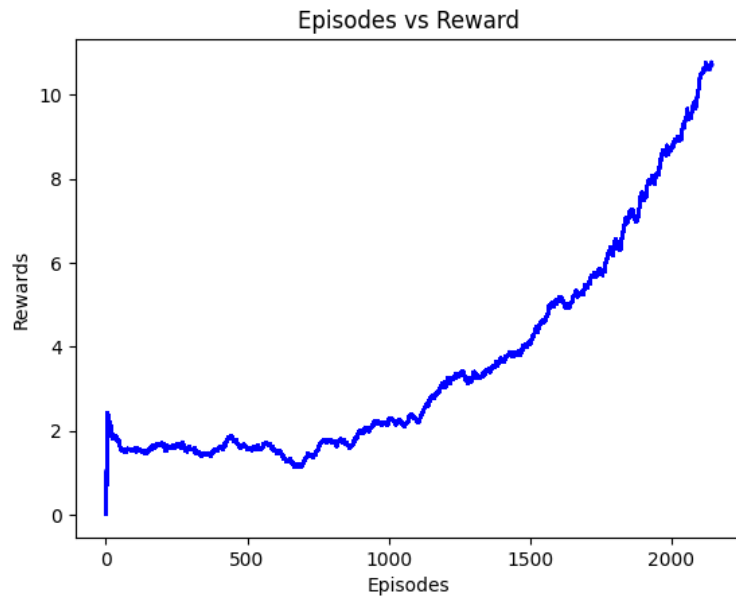
Mean Reward Reached using DQN: 8.85

Plot of Mean Evaluation Reward vs. epochs for DQN model:



Mean Reward Reached using Double DQN: 10.72

Plot of Mean Evaluation Reward vs. epochs for Double DQN model:



Uploaded Saved DQN and Double DQN Models on Canvas: Yes

Uploaded your Agent.py and Agent_double.py files on Canvas: Yes

Provide a few sentences to analyze the training process and talk about implementation details:

During the training process, the mean evaluation reward shows a slightly jagged but continuously rising trend. We believe that the reason is that as the evaluation reward increases, the model will require a smaller learning rate to perform better, but the learning rate will become smaller after remaining unchanged for a period of time, so it can be found that the evaluation reward will level off after increasing for a period of time, and then decrease slightly. The reward will not increase until the learning rate becomes smaller.

Extra Credit

Did you generate the videos for visualizing the agents performance. (Yes/No)

If you attempted the DQN LSTM Agent, give your implementation details. (Add Here)

Mean Reward Reached using DQN_LSTM: (Add Here)

Plot of Mean Evaluation Reward vs. epochs for the DQN_LSTM: (Add Here)

Provide a few sentences to compare DQN_LSTM training process with that of DQN and double DQN: (Add Here)

Answer the questions accordingly if you did the corresponding part. The questions are just prompts. You should elaborate a bit more if you can.

1. What games did you apply the extra credit to? How does it work?
2. What other algorithm did you use? Explain and cite all your sources. Any issues you got in training your new algorithm.