



COMPARING SINGLE & DOUBLE DEEP-Q NETWORKS FOR AI LEARNING TO PLAY GALAGA

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Picture of the video game *Galaga*

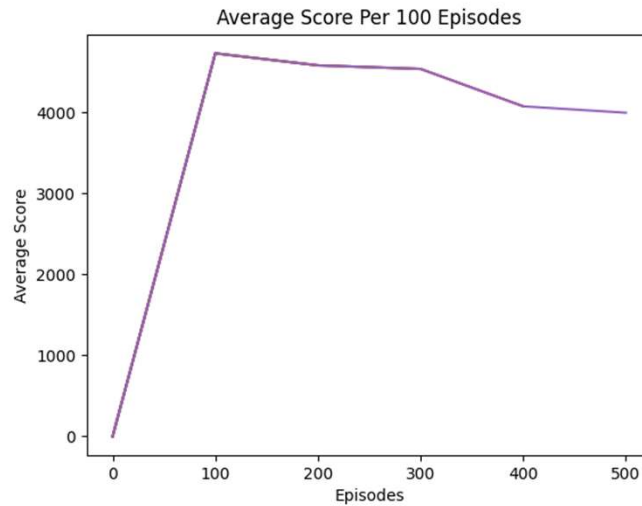
Brief Refresher:

I am comparing a Double DQN vs a normal/singular DQN for an agent learning to play Galaga.

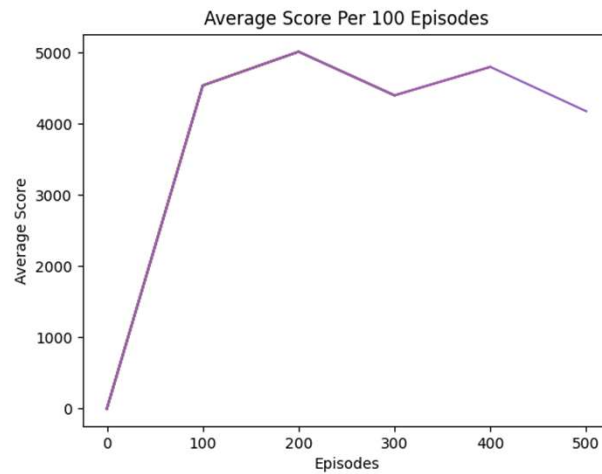
Progress:

I have implemented my own Deep-Q and Double Deep-Q networks based off Source 2 and 3 with a little bit of reference to Source 1. I have preliminary results for both after running them using CHPC computing resources (see next slide).

DQN
Network



DDQN
Network



Next Steps:

- Optimize Networks to be faster
- Figure out and fix what is keeping the networks from learning the correct behavior.
- Write the report

Works Cited:

- Source 1: Galaga_AI by georgefidler1709.
https://github.com/georgefidler1709/Galaga_AI
- Source 2: DQN_Pong by Meredevs. https://github.com/Meredevs/DQN_Pong
- Source 3: Double DQN Implementation to Solve OpenAI Gym's CartPole v-0 by Leo Simmons. <https://medium.com/@leosimmons/double-dqn-implementation-to-solve-openai-gyms-cartpole-v-0-df554cd0614d>