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Abstract

Our project is uses modern AI and reinforcement learning techniques to play the board game Exploding Kittens. Our game can be interacted with through the command line where the player can choose to play against both variants of our AI – one with a neural network and one without.

Contributions

I was largely in charge of simulating the game. The bulk of my effort was put towards ExplodingKittens.py which was based on a Javascript version. Additionally, I was in charge of creating a way to interact with the game. Ultimately, I settled for the game to be in the command line. I spent 2 weeks creating a website to play the game but my lack of experience with the technologies involved meant it was too labor intensive to be completable in time. I also created the script we use to benchmark the AI as well as help Kyle with any script which needed to interact with the simulation – like Gamestate.py.

As for proof that all the code I created works, I’ve included the project demo which shows the game being played vs both AI. This is the same clip from the presesntation. I have also included both midterm and final presentations in the github. Though they download as .mov’s, so it may be easy to reference them on voice thread.

I have also left a link to the github of the website I was working on, but it currently does not have much functionality other than the landing page being fairly attractive. It used react and I honestly haven’t tried running a react website after downloading it from github, so it may not work.

Results

Our project is working though the neural network presently does not seems to provide additional value. I’ll be talking to Kyle of the next few days to see if we can come to a conclusion as to why that may be. Overall, I am fairly happy with what we got done. The AI is not quite as magical as one would hope, but it was very interesting watching the Monte Carlo search tree learn to play the game in a way which most human I know do not play.