Glenhaven President Neural Network Report

A final project report for COMP 3106

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Introduction

* Background in topic area:
  + Talk about how machine learning is a thing that is able to essentially solve any problem.
  + Talk about the game and how it is played.
* Prior work in the topic area: Prior to this project I have had no experience in this topic. The only experience I had was with the game President which in the long run help me identify overfitting without fitness because I was able to see if the model was learning the wrong things against itself. I also had almost parallel experience because I started this project before learning neural networks in COMP 3105, but by the end we covered them extensively.
* Significance of the project: This project is significant because it can help identify good play among my friends because we have recently changerd the rules in how we play president and where unsure of the best way to play 2s. This project is also significant because
* The objective of the project: To train a model to play a good strategy of Glenhaven president.

Methods

* Description of the methods:
  + Talk about the implementation of president.
  + How does the Random bot play?
  + How does the model play?
  + Loss function
  + Optimizer
  + Epochs
  + Generations
  + Fitness value
  + Dropout rate.
  + Model structure.
  + Activation.
* Description of the dataset
  + Talk about the random bot
  + Input Data
  + Output Data
  + Generating input data when there are no bots. Vs. bots in the game.
* Benefits/drawbacks of methods:
  + There was a while that I did not have fitness values which made it hard to determine how the model was doing.
* Evolution/validation strategy:
  + Fitness value.
  + Played this game a lot so just looking at one of the game outputs I am able to objectively determine if the bot made good moves or bad moves.

Results

* Qualitative results:
  + Me looking at the games
  + They play correctly and save power cards till the end
  + Reassures my question about 2s being played early.
* Quantitative results:
  + Fitness score of the bot (against prior model?) against random?

Discussion

* Limittation and biases
* Implications of the work??
* Analysis of results/outcome with respect to objectives
* Potential Improvements/ future work.