Some Title

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1 Problem Statement

200 words max

1. Clearly describes the problem being addressed
2. References any external resources that support this problem (e.g. data sets, simulation/game environment, etc.)

The goal of the project is to train an AI to be very good at poker(Texas Holdem **TexasHoldEm**), in order to do this a poker game will be created. This game will allow human vs AI(for testing) and AI vs AI(for training).

2 Proposed Approach

300 words max

1. Identifies the type of AI/ML approach to be used to address the problem, e.g.
   (a) Search
   (b) Classification
   (c) Prediction/regression
   (d) Reinforcement Learning
2. Describe how your problem relates to the proposed approach (i.e. how do you map the problem to the approach?)
3. Identify any planned libraries, resources, etc. you intend to utilize to facilitate your approach

In order to train the model, the system will be forced to play against itself in order to improve its skills, this unsupervised with reinforcement learning approach is used as the system does not have labeled correct plays, due to hidden information. One possible method of training could be NEAT[1] where neurons are added in between generations.

The AI will be rewarded based on gaining the most money overe a set number of rounds.

3 Team Structure

1. Identifies team members
2. Identifies any relevant background of team member(s) to the problem, if applicable
3. Identifies roles and responsibilities of team members

We are using AGILE SCRUM to assign tasks to maintain flexibility over time. Issues will be tracked on github and we will make sure we are logging who closed issues for end evalution.

3.1 Team Members with backgrounds

1. Nathan
   (a) manage repo
   (b) developers
2. JP
   (a) Scrummaster
   (b) developers

3.2 Roles and Responsibiltes

1. Nathan
   (a) manage repo
   (b) developers
2. JP
   (a) Scrummaster
   (b) developers

4 Refferences

1. Document includes references to any frameworks, simulation environments, data sets, problem descriptions, etc. used in this write-up

2. Citations and inline references are in IEEE format

References

[1] Wikipedia. "Neuroevolution of augmenting topologies." (2021), [Online]. Available: https://en.wikipedia.org/wiki/Neuroevolution_of_augmenting_topologies. (accessed: 02.22.2022).