Using Deep Learning to Predict Esports Results

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Abstract

Esports, the industry of playing competitive video games, is a large growing industry. As such teams are looking for the next greatest of all time, players who will be the next Michael Jordan, or Babe Ruth. Scouting is a critical portion of a team's success. Since we are both fans of esports, particularly a game called League of Legends, we felt predicting a player's and team's win rate based on their stat line would be a suitable problem for a neural network. While we are focusing on a specific game to work with, when we finish, ideally our code can be modified to make predictions for other sports.

We plan to use a recurrent deep learning network to predict a players win rate based on stats through a players season, with the hope it will predict the following year more accurately building on the data. The training data will consist of 14 data points per player per season, with the seasons starting in spring 2014, using data from the regional leagues of North America, Europe, South Korea, China, Brazil, Japan, Russia, Latin America, Oceania, Taiwan, Turkey, and Vietnam. The amount of data available grows from each season adding a unique challenge to the problem that we must overcome.

https://csc.belmont.edu/hooper/csc3400/lectureNotes/09gameimplementationi/homework.php

References

Aarushi Singh. 2019. How AI is Taking Predictive Analytics to the Next Level. (August 2019). Retrieved October 4, 2020 from https://www.martechvibe.com/insights/staff-articles/how-ai-is-improving-predictive-analytics/

We plan to use this source as a “How to guide”. Essentially we are using this as a reference guide for what our project should do, and what to expect while working on it. Also, if we ever get stuck or do not know where our next step should be, we intend to reference this article.

Victoria Hodge, Sam Devlin, Nick Sephton, Florian Block, Anders Drachen and Peter Cowling. 2017. Win Prediction in Esports: Mixed-Rank Match Prediction in Multi-player Online Battle Arena Games. (November 2017). Retrieved October 4, 2020 from https://www.researchgate.net/publication/321160741_Win_Prediction_in_Esports_Mixed-Rank_Match_Prediction_in_Multi-player_Online_Battle_Arena_Games

This article was written about another MOBA game which shares a lot of similarities to League of Legends. We plan to use this as a parallel to our project and examine the steps and processes they used while we create ours. There will be times where we compare our results and see if the methods and coding would be beneficial to us as well.

2020. Predicting the Winning Side in Esports Using Tensorflow (2). (April 2020). Retrieved October 4, 2020 from https://mc.ai/predicting-the-winning-side-in-esports-using-tensorflow-2-2/

This source talks about a very similar idea to ours, however the stats focus on predicting a single game, whereas our scope is somewhat larger, as it focuses on an entire season. This source will help us as we will take this data and information to better our project. Taking in this information surely will help us to better refine our searches and data usage.