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Group Project

12/8/19

Problem: There are over 3000 possible matchups in Super Smash Bros Ultimate, and learning/perfecting difficult matchups is the key to performing well in the competitive smash scene. The problem is that the game is only one year old, and most matchups have not been played at high level play. Players don’t know which characters pose the greatest threat to their character and find out too late when they happen to meet in tournament.

Solution: We will take the data of known matchups and their win rates and use that data along with SKLearn to create a model for predicting every possible matchup ahead of time. With this data, players will know which characters to train against and which matchups are easy wins in tournament.

Each matchup is represented by the percentage difference between the two character’s stats. There are 11 different stats we are focusing on: Max air acc, airspeed, fall speed, gravity, etc. SKLearn works to choose the correct weights for each stat to correlate to the relevant win rate. The win rate is represented by 5 categories: +2, +1, 0, -1, and -2, where +2 = 70%-100% winrate, +1 = 56%-69%, 0 = 45%-55%, -1 = 31-44%, and -2 = 0%-30%. The more “positive” the win rate, the easier the matchup. For example, if the Mario vs Yoshi matchup has a +2, It’s a very good matchup for Mario.

Data came from two major sources. One is all the stats for each character for every stat. This can all be found at kuroganehammer.com. The other source of data had to be manually gathered. This was the win rate of every matchup. In order to eliminate the variable of player skill, we chose to only take data from matches that happened in Top 48 of every Smash Ultimate major tournament. We then combined the wins of each matchup of every tournament to find the ultimate matchup win rate. This data can be gathered at Liquipedia.net. In the end we have collected 33 tournaments worth of Top 48 games.