Predicting League of Legend Match Outcomes Based on In-Game Data
SOFE4620U - Group 19 Project Proposal

Members:

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Background:
League of Legends is a major online video game produced by Riot Games. Launched in 2009, League of Legends (LoL) has continued to grow over the years. Like many other online games, LoL has an in-game leaderboard in which players can participate to prove where they stand across the nation. In addition to this, Riot Games has an official e-Sports league, in which the top players and teams compete against each other in a yearly tournament to be the best team in the region, and ultimately the best team in the world. Over the years, many large e-Sports teams have begun hiring analysts that will view all the in-game data that is curated by a team, and provide professional insight on what the team can do to improve their game. As games become more competitive, teams are looking for a competitive edge over others by relying on data-driven solutions, where statistics and facts serve as the foundation of tactics and high-level play.

Description:
League of Legends is a tactical game, in which each team consists of 5 players. These players fulfill different roles which ultimately work together to win the game. Within the game, there are multiple objectives and tasks players can complete, which will increase their team's chances of winning. On the reverse, the other team loses out on these objectives and decreases their chances of winning. By analyzing the various features that are provided by the game, and determining which features are the most crucial for a team to capitalize on.

Data Source:
Riot Games has a public API that can be accessed through the Riot Developer Portal with Python to query data. The main APIs we are focusing on are the LEAGUE-V4 and MATCH-V5 APIs, which can provide a list of match ids, which can then be used to analyze per-match data. One limit on this API is the rate limit, so by adding a timer to our data collection program, we can overcome this limitation. We can also store this data locally so that we do not need to re-query this data online.

Objectives:

By using the API, we aim to gather game data from the highest-ranked players in the region. By doing so, we are removing the constraint that some players may be learning the game or not playing optimally. We aim to utilize this data will provide us with the raw data and events that happen in a near perfectly played game. Along with this data, we aim to leverage different machine learning algorithms to analyze and predict results based on our data. Because we know the outcome of each match, we can use supervised learning techniques such as Random Forest, Logistic Regression, or even a simple Neural Network. Part of the project will be to implement and compare the different algorithms we use to find the best or most optimal solution. We also aim to highlight what features are the most important for a team to win, look at the limitations of our work, and note any improvements that can be made.

Contribution Matrix:

	Monil Patel	**Soham Bhavsar**	**Thayan Sivathevan**	**Osasogie Osuki**
Background				
Description				
Data Sources				
Objectives				

References:

[1]

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