The Impact of First Objects Obtaining

on the Win Rate of League of Legends

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Introduction

This project will analyze how the win rate of a League of Legends(LOL) game changes as a team get some special game objects first against the other team. In this research, the special game objects are defined as first-blood(first player kill), tower, dragon, Baron Nashor. These objects play a role like pawns, knights, and a queen in a chess game. If a chess player gets the other side's object first, the win rate of the game becomes good to him. Likewise, a similar situation is expected to occur in LOL. Therefore, the purpose of this project is to calculate the influence of each object on the win rate and to develop a model that can effectively predict the outcome of games.

Motivation

- There are many preceding machine learning studies in the field of sports and games. As a student who starts to study machine learning for the first time, it is wiser to choose a field full of preceding research.

- Since e-sports is a field combining computers and sports, many data are neatly organized and shared. It may help this research easier. This project will cover the data on the League of Legends Champions Korea(LCK) in 2017.

- Guessing the outcome of a game is a joyful activity in itself. This is the main motive of this research.

- This topic is valuable in that it can be likely to expand to other subjects. For example, as mentioned earlier it can be used for games such as chess and Chinese chess, and if good algorithms come up during research, they can be applied to newly released games.

Methods

Few theories have been learned yet. However, linear regression can be used on this project. First of all, for the four objects, a correlation between each gain and the outcome of the game will be visualized in a graph. Next, a linear function will be drawn, and errors will be calculated to estimate the fitness of the model.

Of course, other models learned during the lecture will be applied to pursue optimal prediction.

Intended Experiments

The change of the winning rate due to each object will be calculated. The change in winning rate due to all objects also will be calculated. Various models are used to infer functions most similar to actual data. If time permits, the changes in the winning rate due to other factors will be calculated too.