The Impact of First Objects Obtaining on the Win Rate of League of Legends

Daeil Han *- Dept. of Applied A.I. - dalehan0606@seoultech.ac.kr*

ABSTRACT

- **What is the Purpose?**

  Predicting outcomes of League of Legends games.

- **What Dataset is Used?**

  League Of Legends High Elo Ranked Games (2020) from Kaggle.

- **What are the Methods?**

  Logistic classification and Naïve Bayse.

- **What are the Differences?**

  1. Analyzed the effects of getting the game objects first.
  2. Tryed to reveal the dependence between features by using two kinds of models.

- **What are the Conclusions?**

  The model has fatal flaws.

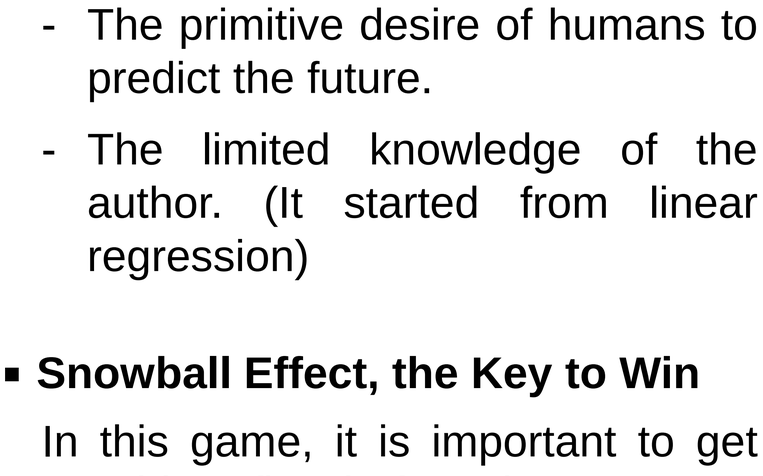
INTRODUCTION

- **Motivations**
  - The primitive desire of humans to predict the future.
  - The limited knowledge of the author. (It started from linear regression)

- **Snowball Effect, the Key to Win**

  In this game, it is important to get an object first before the opponent team because of the snowball effect.

  Therefore, This work concentrated on the effects of getting the game objects first.



THE GAME RULES

- **The Basics**

  Two teams exist, Blue and Red.

  If you destroy your enemy's Nexus, you win.

Nexus

- **What are the Objects in LOL?**

  There are some objects providing rewards: Turret, dragon, Nashor, etc.

Turret Dragon Nashor Baron

DATASET

- Use the dataset of master tier players because of a small variance.
- The original dataset has so many features, but this work uses only the following five features.
- Use only the blue team's features.

blueWin	blueFirstBlood	blueFirstTurret	blueFirstDragon	blueFirstInhibitor	blueFirstBaron
0	1	1	0	0	0
0	0	1	0	0	0
1	0	0	1	1	1
1	1	1	1	0	0
0	1	1	1	0	0
⋮	⋮	⋮	⋮	⋮	⋮

METHODS & RESULTS

- **The Results of the Models**
  - The logistic classification:

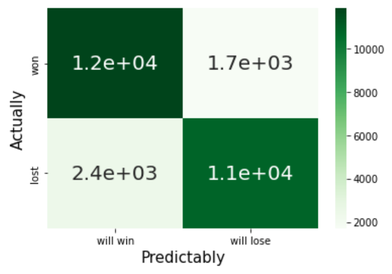
Accuracy	Precision	Sensitivity	Specificity	F1 Score
0.847	0.864	0.820	0.874	0.841

  - The Naïve Bayse:

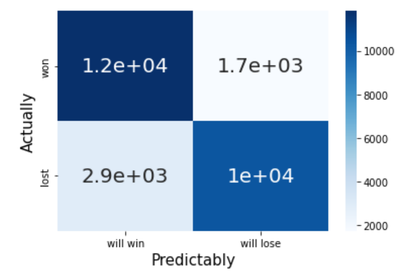
Accuracy	Precision	Sensitivity	Specificity	F1 Score
0.827	0.856	0.782	0.872	0.817

- **The Confusion Matrices**

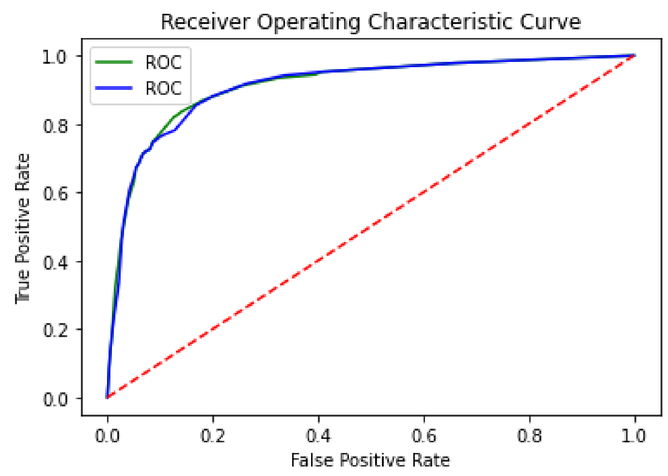
Logistic Classification



Naïve Bayse



- **The ROC Curves**



  - AUC of the L.C. : 0.911
  - AUC of the N.B. : 0.910

CONCLUTIONS

Fatal flaws have been detected.

1. Distorted dynamic research into static research.
2. The winning rate can be predicted only at the end of the game.
3. Misjudged the features as independence cases.
4. Gave up various elements of the game.

REFERENCES

See the final report.