



Predicting League of Legends Game Outcomes

Joe, Kyle, and Ross

LEAGUE OF LEGENDS

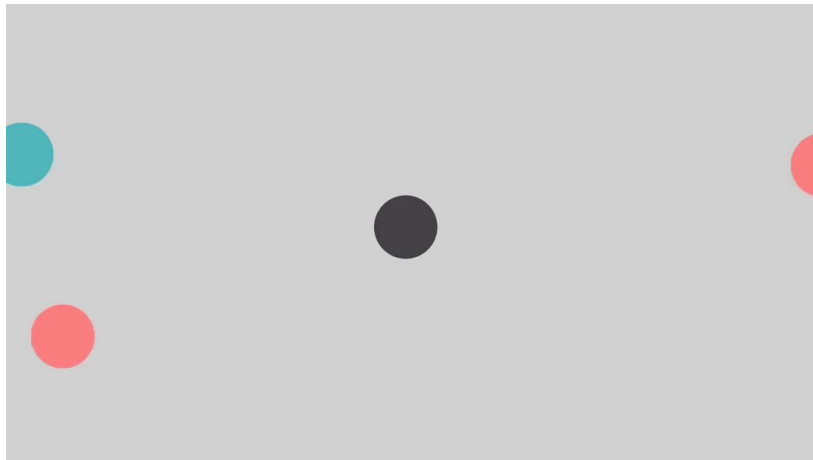
Business Problem

- League of Legends is a popular game in e-sports, so knowing the outcome of a game before it is over offers a chance for coaches to train their team to have a better chance of winning.
- This tool also gives coaches insight into what factors are most impactful in the game.
- This model was created using a dataset with information from the first 10 minutes of League of Legends games. It contains 9879 rows and 40 columns
- The goal of the model is to be able to accurately predict the outcome of a game before it ends.



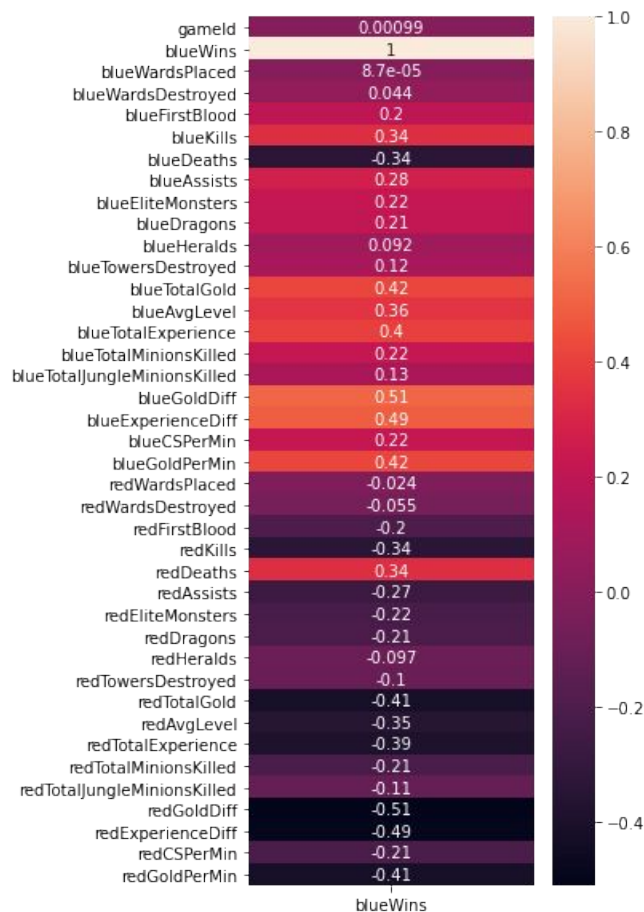
Baseline Model

- For the baseline model, we used a KNN model, and included all variables in our dataset except for ID
- We decided to use accuracy score because if our model predicts blue to win and blue loses, it is of the same importance as if our model predicts red to lose and red wins .
- The accuracy score for this model was 68.8%

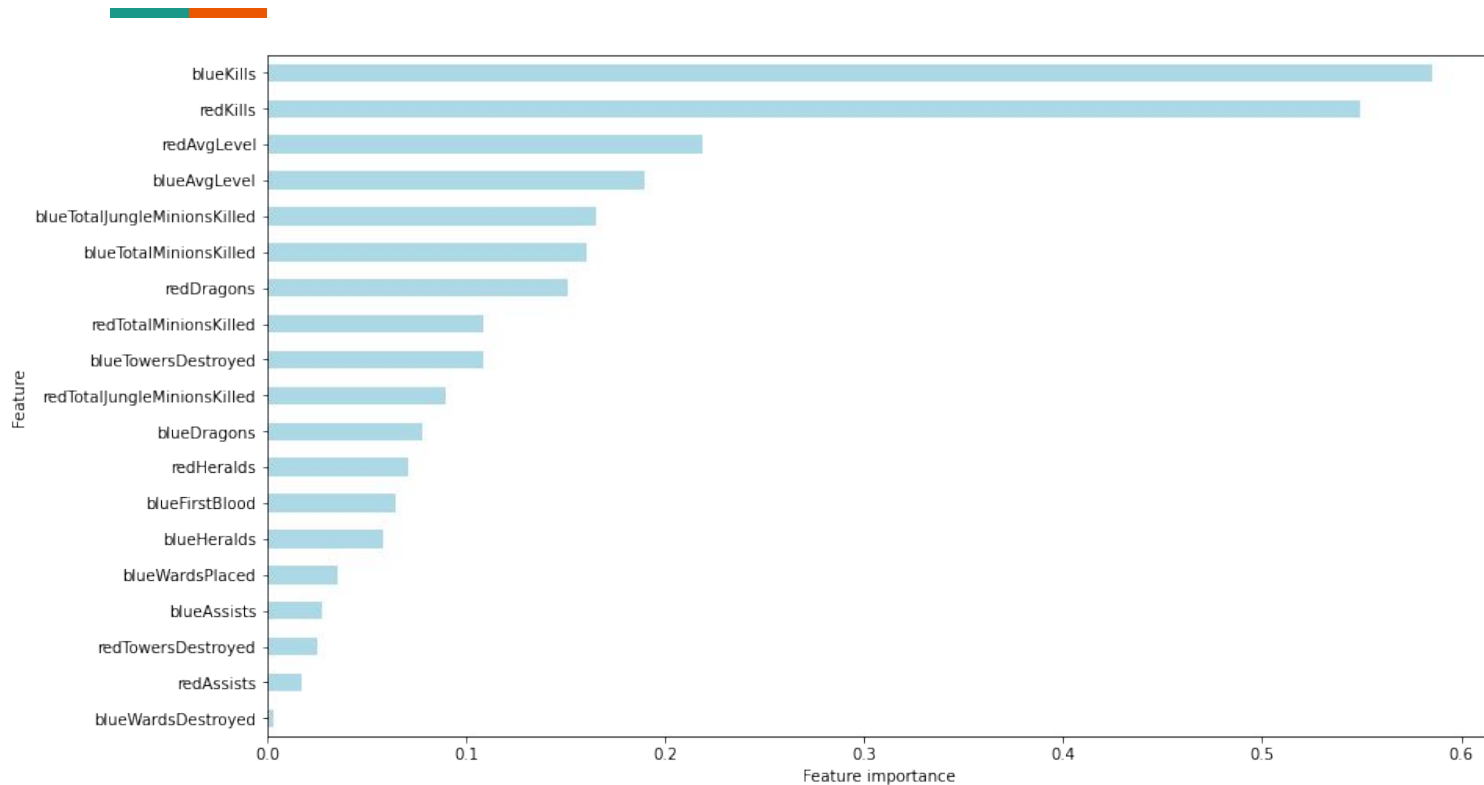


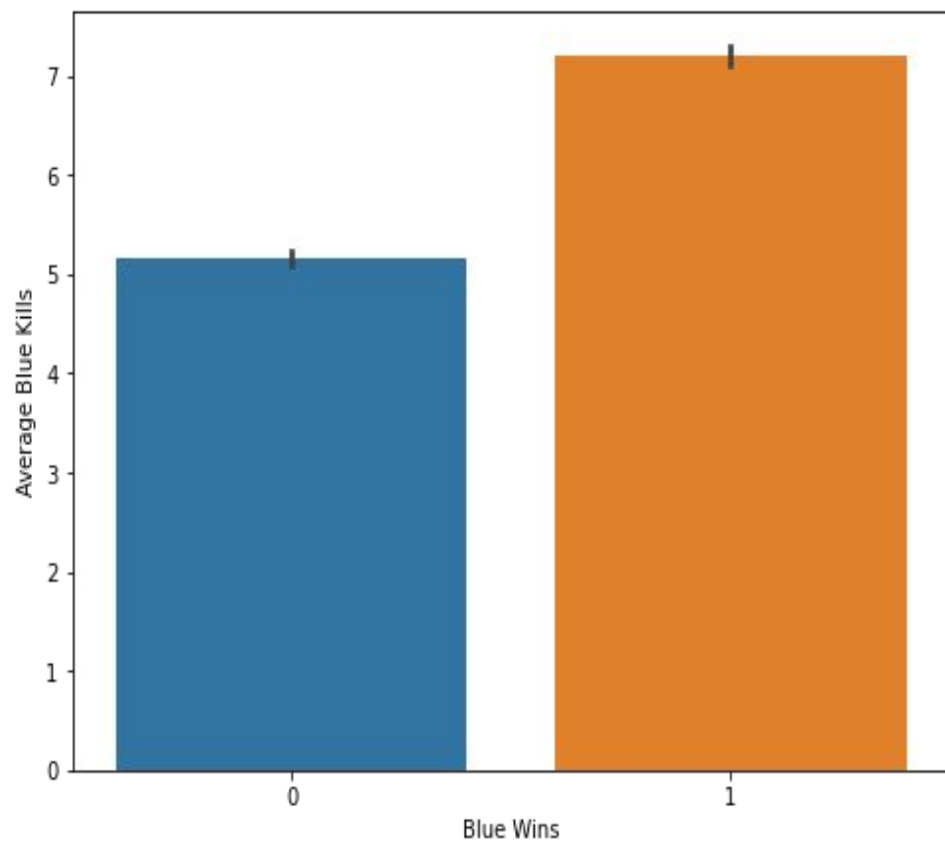
Changes

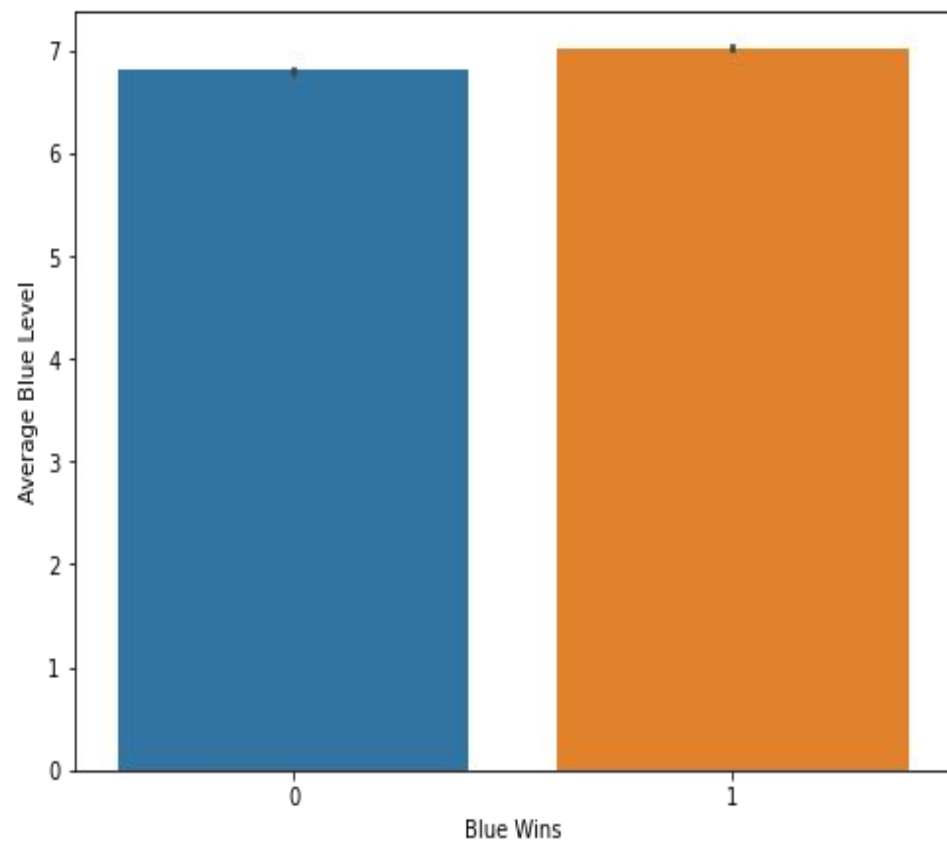
- This data set contained several features that would not be accessible to the players or coaches at the 10 minute mark of the game, so, we dropped about half of the features.
- Although this took out some of our strongest predictors, it made the model usable in a real world scenario.



Feature importance graph









Modeling Process

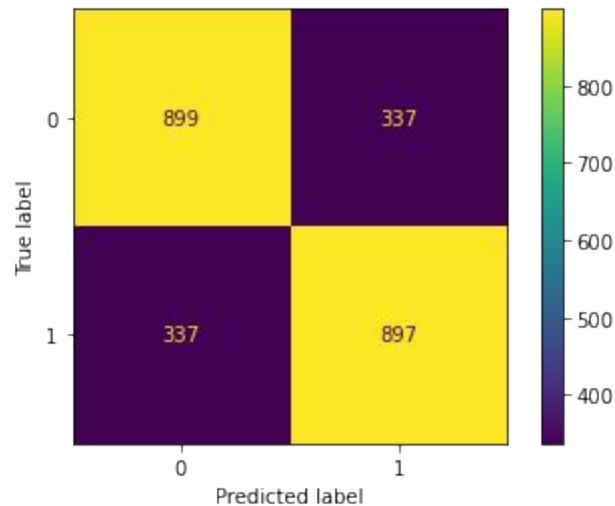
During our modeling process, we used a ton of different models, which were:

- Logistic Regression
- Decision Trees
- Bagged Trees
- Random Forest Classifier
- Gradient Boosting Classifier
- Ada Boosting Classifier
- XGBoost
- K Nearest Neighbors
- Support Vector Machine

Refined Model

A default Ada Boost Classifier was our best model

When using it to predict against the test set it gave us an accuracy score of 72.71%



Example

We gathered the stats from this game and plugged them into our model and it correctly predicted that the Blue team won.





Conclusion

- Gold and experience is what matters.
 - In a real game players should focus more on farming and lane phase as a way to earn experience and gold.
- However they do not work with our model
- With our model coaches should emphasize getting kills and leveling up
- Early game matters more than you think.



Next Steps

- Next we would like to do some API calls to gather more data
 - Items
 - Champions
 - Bans
- All of the features we hope would allow us to create a more accurate model.



Contact Info:

- Kyle Vosen
 - Email; kylevosen1999@gmail.com
 - GitHub: krvosen
- Ross Richesin
 - Email: richesinrr0@gmail.com
 - Github: richesinrr0
- Joe Swing
 - Email: joeswing88@gmail.com
 - Github: jswing450