



NFL Play Predictor



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Problem

A defensive coordinator gave our company a task of predicting what a play would be given the conditions at a specific point of a game. His team provided us a dataset of plays in the NFL for the past three years.

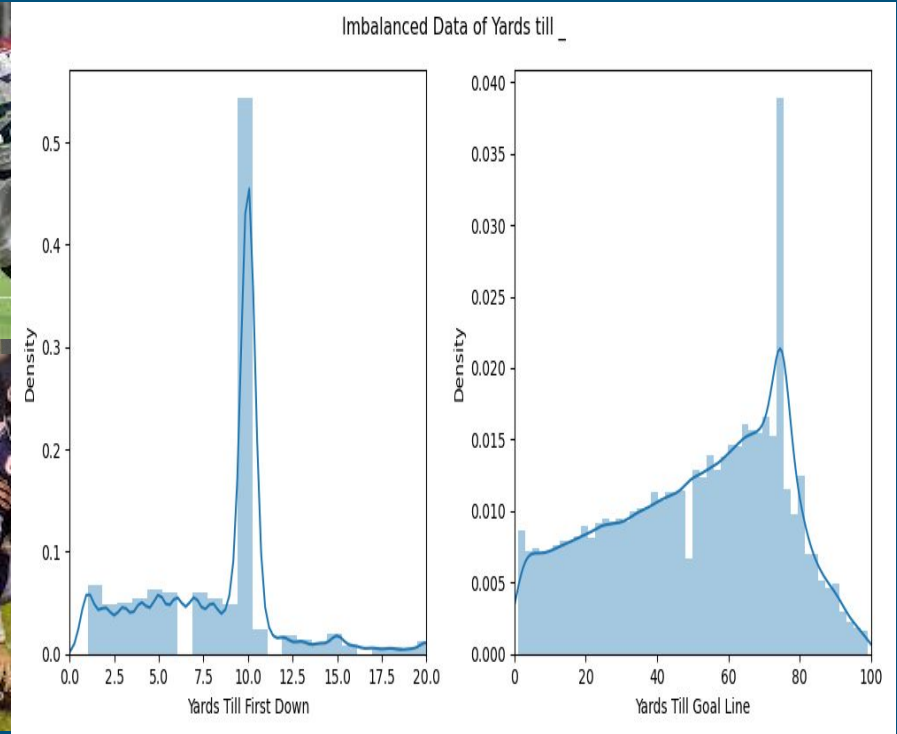
Problem Statement

Create a predictive model that can predict the play type of an NFL play. Create an application that can be given new data and give a prediction of the play.

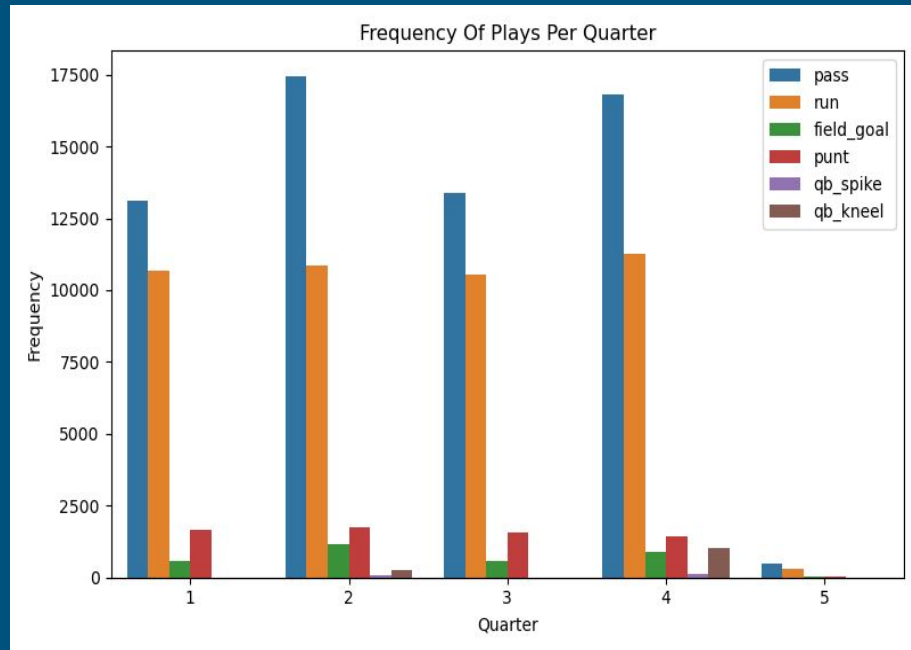
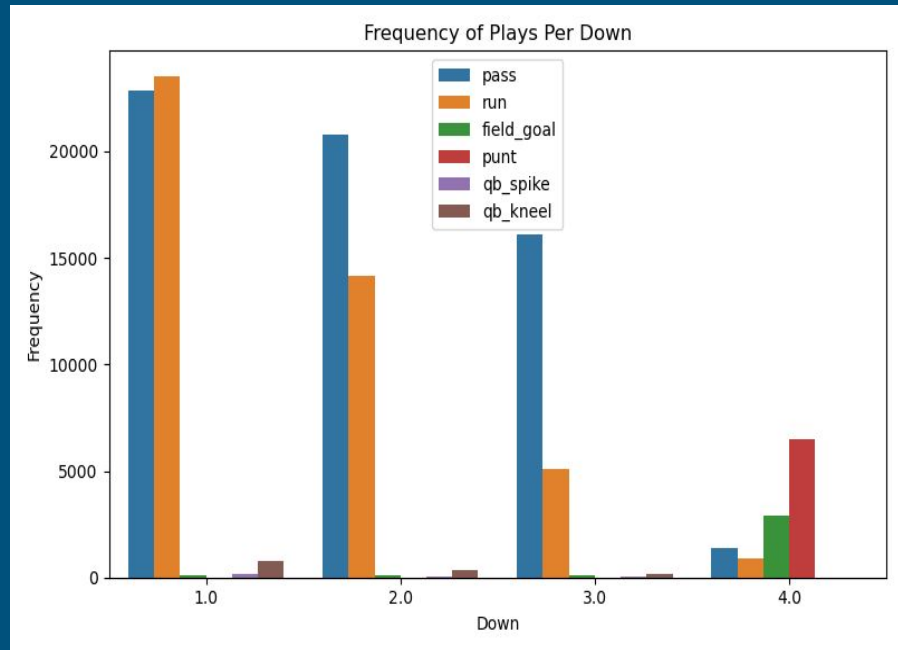
Methodologies

- Data Cleaning
- Preprocessing
 - Feature Engineering (300+ columns)
 - Balanced or Imbalanced
- Model Selection
 - Neural Network or Decision tree?
- Model Evaluations

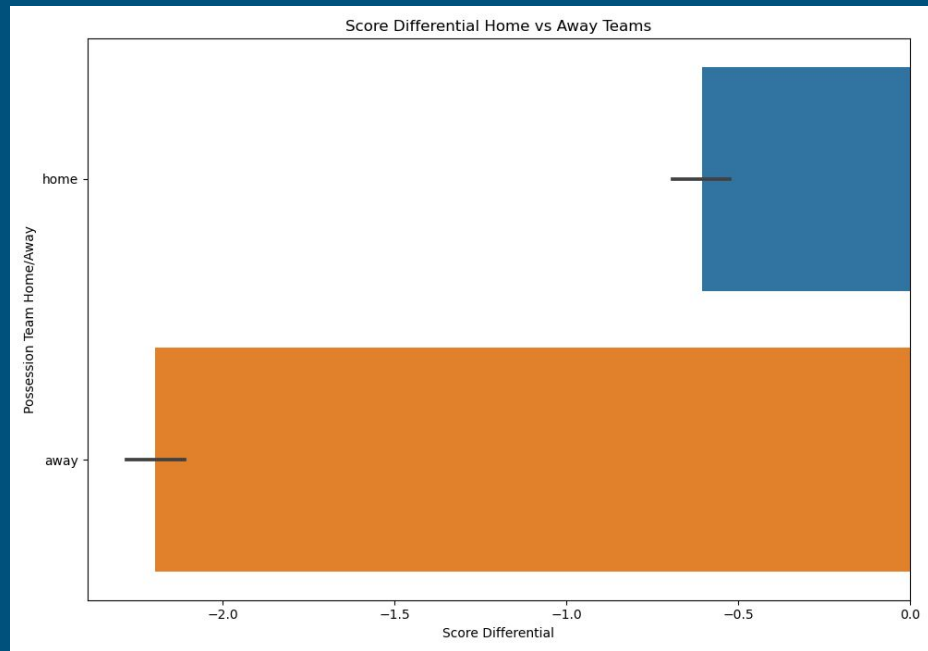
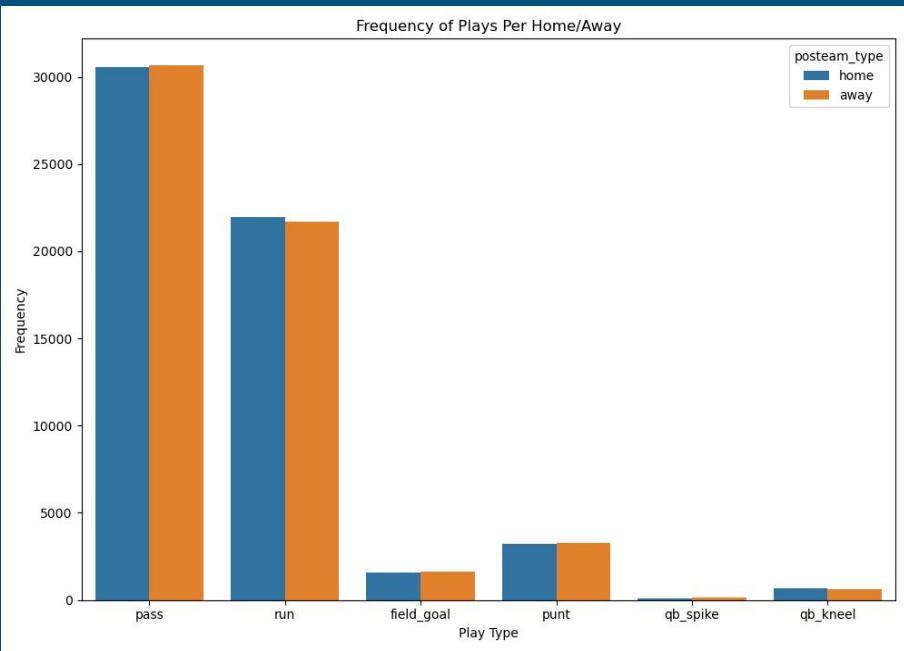
What type of plays How's it open in our data?



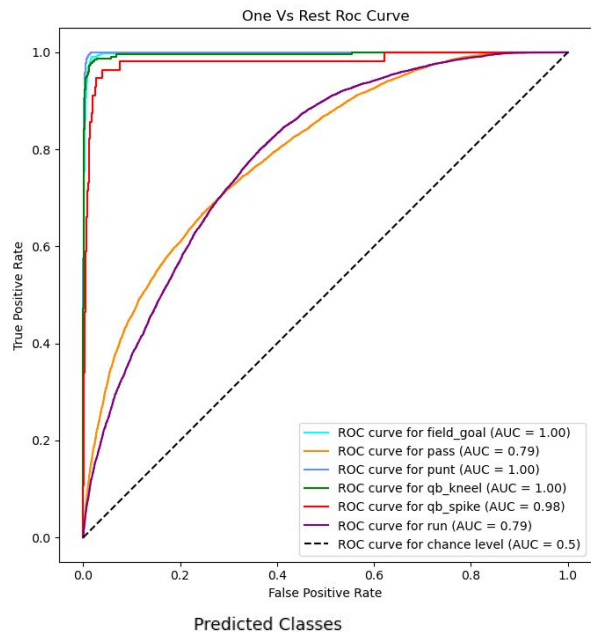
How do plays match with other features?



Home or not to home

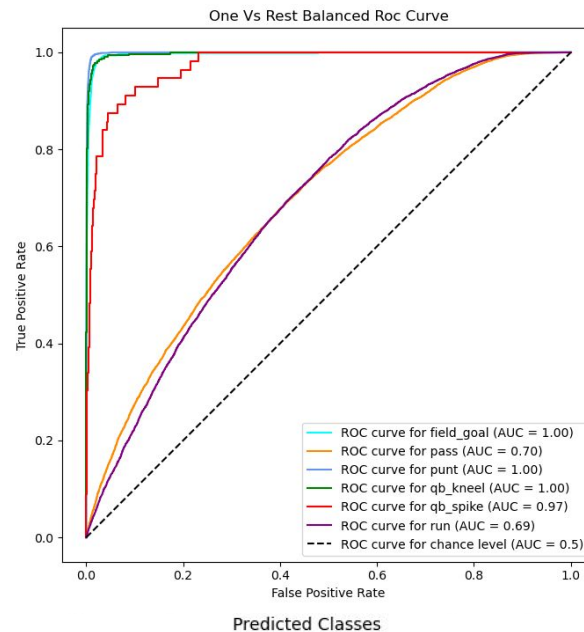


Result Imbalanced



- Run

Balanced



- Pass
- Qb Spike

Conclusions

- Xgboost Imbalanced Model, Accuracy = 70%, 18% higher than null
- Struggles? QB Spike
 - a. Causes
 - i. Timeouts Remaining
 - ii. Time Left
 - iii. Clock Running

Future

- Create a model with better imbalanced data replacement techniques
- Look for more data where more features are available, eg: Formation of offense, weather of the day.