

Predicting NFL Outcomes





The Problem

- The NFL is the world's highest grossing sports organization
- Projections indicate that the NFL's revenue will increase to over \$25 billion per year by 2026
- The Sports Betting Market reached a total estimated value of \$242 billion in 2023
- Approximately \$100 billion of legal wagers were placed on NFL games in 2022 (\$7.6 billion on Super Bowl LVII)
- The ability to anticipate winners and spreads offers substantial monetary advantages.

Solution

Predictive Models



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Our Model	
NFLpbp	Play-by-play data for every season
Critical Metrics	Yards Gained, EPA, YPC, Points
Aim	Harness the power of machine learning (XGBoost)
GOAL	Predict WINNERS of NFL Games

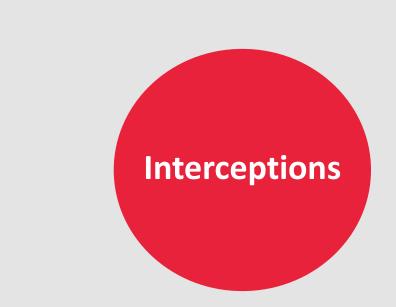
Results



We ran two regression models
XGBoost and Random Forest
to determine which one was
more effective.



The accuracy of our XGBoost model was .5803. The accuracy of the random forest was only .5028.



The most important variable within our model is interceptions thrown followed closely by number of plays, and mean epa.



Rationale

Unpredictability

Inherent nature of sports is unpredictable

The difference between teams is marginal at best

Many sources of variation including refs, weather, penalties, and injuries

At the granular level the inputs are human and humans are not consistent

Metrics that are important but excluded special teams, defensive statistics

Where is your team?

