Fantasy Football Capstone

Predicting Player Performance

Kelly Mullaney, Data Science

Overview

- Business Problem

- Data

- Methods

- Results

- Conclusions

Fantasy Sports are BIG

What Is It?

Who Plays?

When?

Participants serve as a virtual owner of a sports team.

Nearly 70 Million Americans play fantasy sports.

78% of fantasy participants play fantasy football.

Seasonal fantasy is over the course of that sports' season.

Daily/Weekly fantasy pertains to 1 game or a small series.

Example Daily Draft

Why Care?

Entertainment	Payouts	Growing Industry
Participants compete against each other for prizes including cash, trophies or to avoid a punishment for finishing in last place.	The weekly payouts for daily fantasy football are in the tens of millions. **Better predicting = more money**	The Fantasy Sports Market is expected to reach $48.6 Billion by 2027.

Data

- 739 players
- 6 years of data*
- 11,000 rows
- 26 features

*Less for some players

Special thanks to Pro Football Reference for providing the data
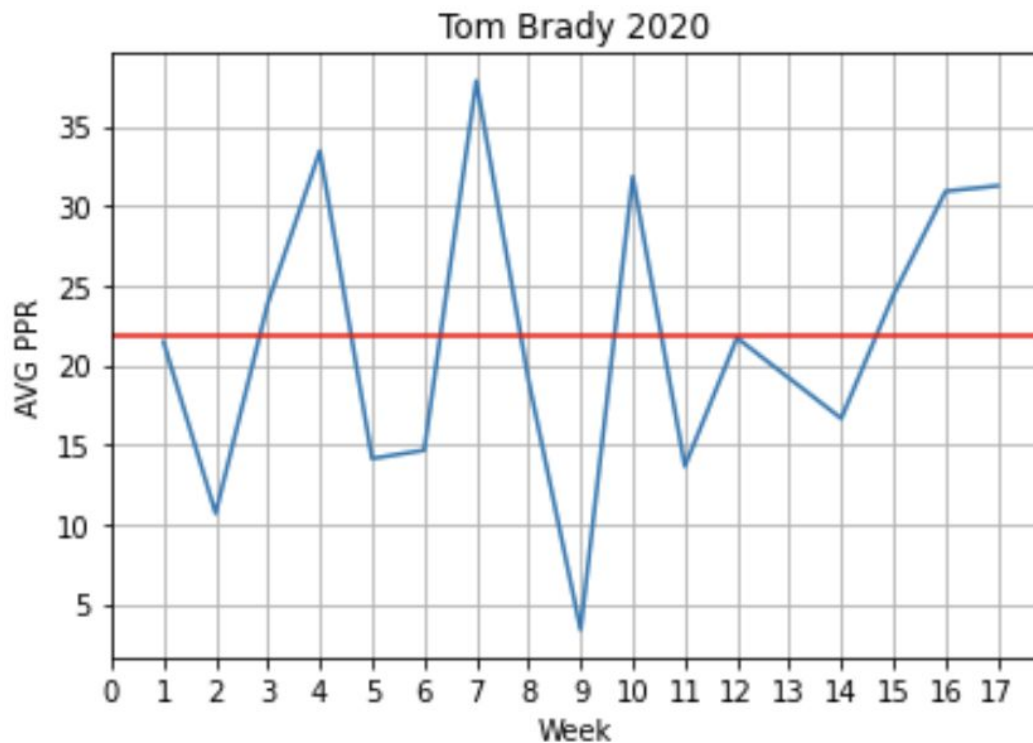
So… How Do You Accurately Predict Points?

It's Tough!!!

- Recent Performance/Stats
- Opponent
- Coaching
- Match Ups
- Injuries
- Playoff Positioning
- Referees
- Weather
- More

Tom Brady 2020 Season PPR

My Model (Historical Data)

Regression Model Results

QB Position
Model: XGBoost Results: 87% accuracy on Quarterbacks

Player
Model: XGBoost or Ridge Regression Results: 17 - 73% accuracy on individual Quarterbacks

Week 3 Test Data

Tom Brady Model Results

Week 3

DraftKings Projected Points: 18.9

Model Predicted Points: 18.1

Actual Points: 14.7

Week 4

DraftKings Projected Points: 22.1

Model Predicted Points: 18.8

Actual Points: 25.4

Conclusion

- There are a seemingly infinite number of variables to consider
- Making accurate predictions consistently on individual players is almost impossible
- People who gamble professionally on Fantasy Sports use a mixture of statistics, eye-test, and luck

Beyond MVP

- MORE features/data
- Next model will be a MRNN
- Streamlit App

Questions?

Mullaney.kelly.k@gmail.com

LinkedIn

GitHub

Blog