Draft Analysis for the 2022 Fantasy Football Season

A Data Scientist's Guide to Optimizing the PPR Fantasy Football League Draft

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Fantasy Football Basics

- 10-14 team league size
- "Draft" is held before NFL regular season
  - Salary cap or number of draft picks
  - Select virtual team of NFL players
- Compete head-to-head against other teams every week of NFL season
  - Points determined by in-game NFL player statistics

Project Overview

- Create an ARIMAX time series model to predict the 2022 Fantasy Football Season
  - Veteran players (more than 3 seasons)

- Compare fantasy point projections to ADP
  - Identify steals and busts of the draft
  - "Above the line" strategy

APPENDIX

- Historical fantasy football drafts
  - Compare 2015 - 2021 ADP (Average Draft Position) vs actual points scored
  - Identify position value by round

Business Case

- Nathan Hall entering high stakes fantasy football leagues
  - Win to earn money
  - Draft strategies and key players
- Model to predict upcoming season
- PPR (Point Per Reception)
  - Scoring method - player will be receive 1 point when they catch the ball

Data

- Datasets downloaded from Fantasy Pros
  - Weekly PPR fantasy points from NFL seasons 2017 - 2021 for veteran players (over 3 seasons) in the top 200 2022 ADP
  - Weekly snap counts from NFL seasons 2017 - 2021 for veteran players (over 3 seasons) in the top 200 2022 ADP
  - Yearly PPR fantasy points from NFL seasons 2015 - 2021 for players in the top 200 ADP for the respective year

Modeling Methods

- Baseline Linear Regression Model
- ARIMAX Time Series Models on veteran players
  - Player snaps used as exogenous variable to model
- Dynamic Forecasting to predict player points for the 2022 fantasy season

Model Validation – 2021 Season

Linear Regression Model Errors:

- Quarterbacks - 12.4 points
- Running Backs - 10.5 points
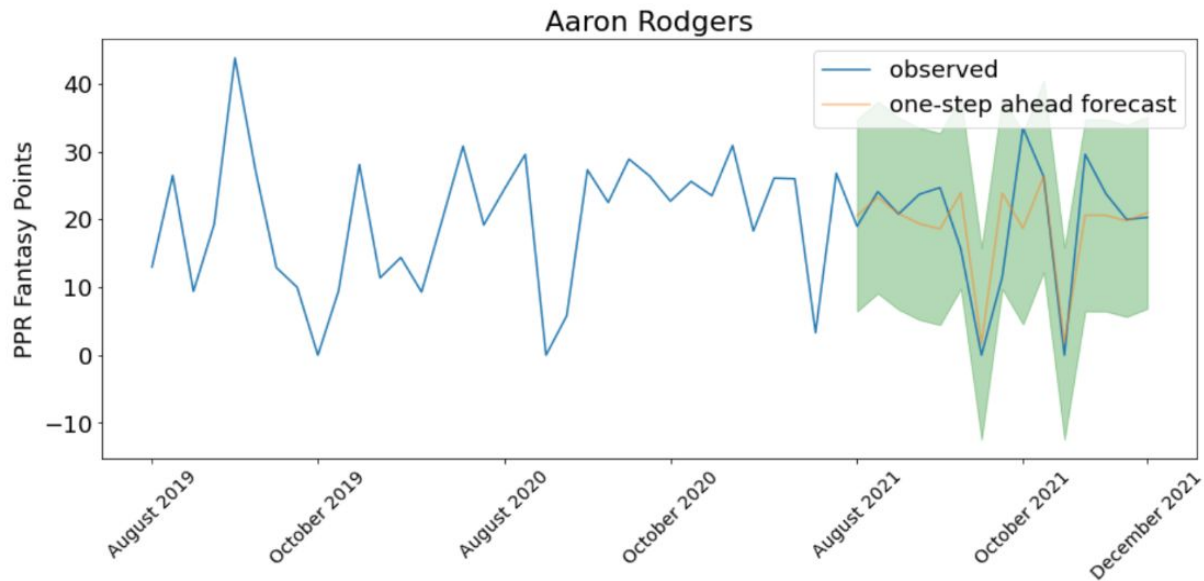- Wide Receivers - 9.6 points
- Tight Ends - 8.7 points

ARIMAX Time Series Model Errors:

- Quarterbacks - 6.2 points
- Running backs - 5.3 points
- Wide Receivers - 5.8 points
- Tight Ends - 5.8 points

My model is 2x better than standard regression!
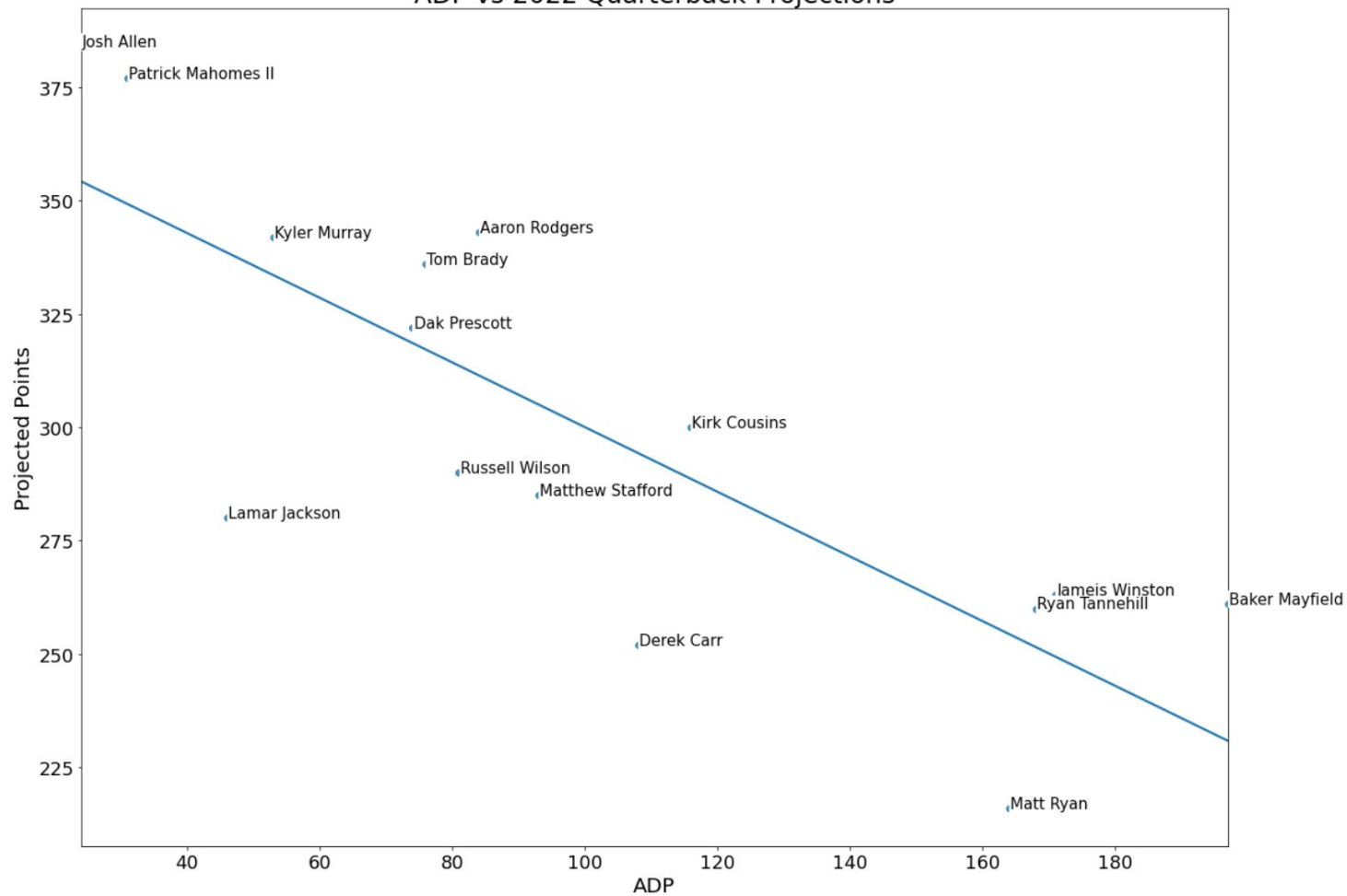
Model Validation

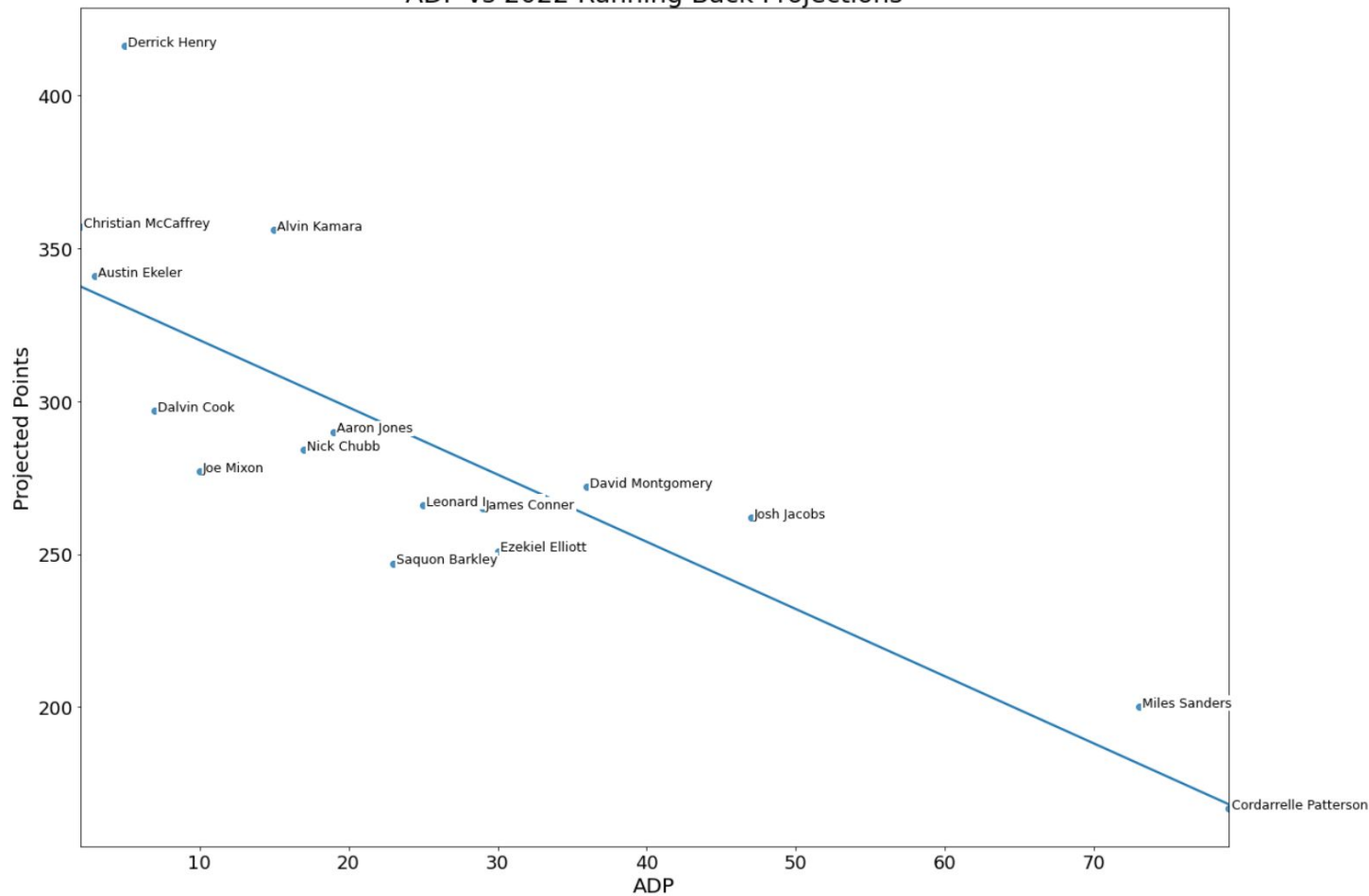- RMSE of forecast for Aaron Rodgers 2021 season was 6 points

Recommendations

- Fantasy football draft strategies are not a one size fits all approach
  - Adapt to draft order and players left on the board
  - Build team of players that outscore their ADP
- Model 2022 point predictions vs ADP
- Use following visuals for draft:
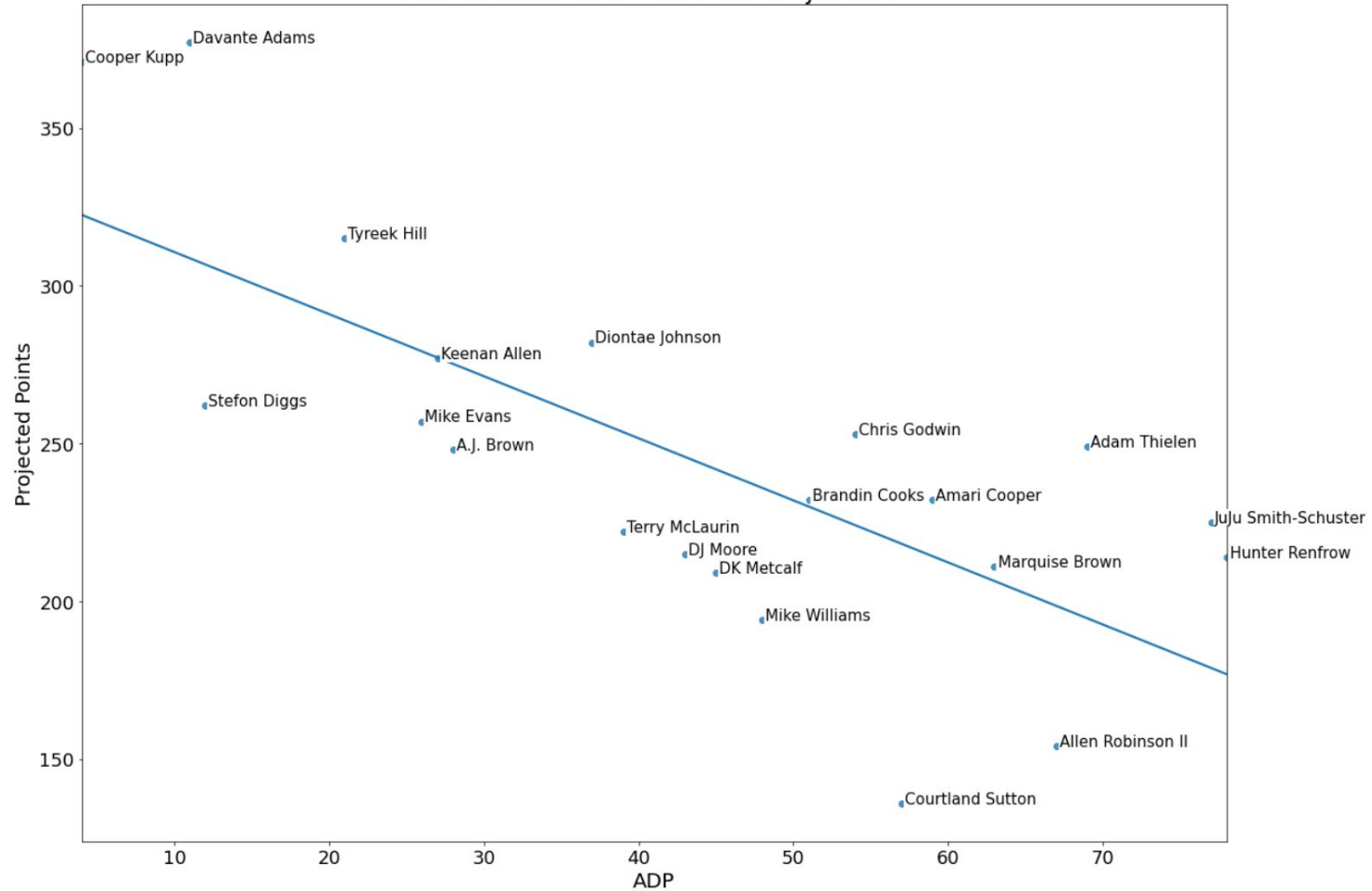 - "Above the line" strategy

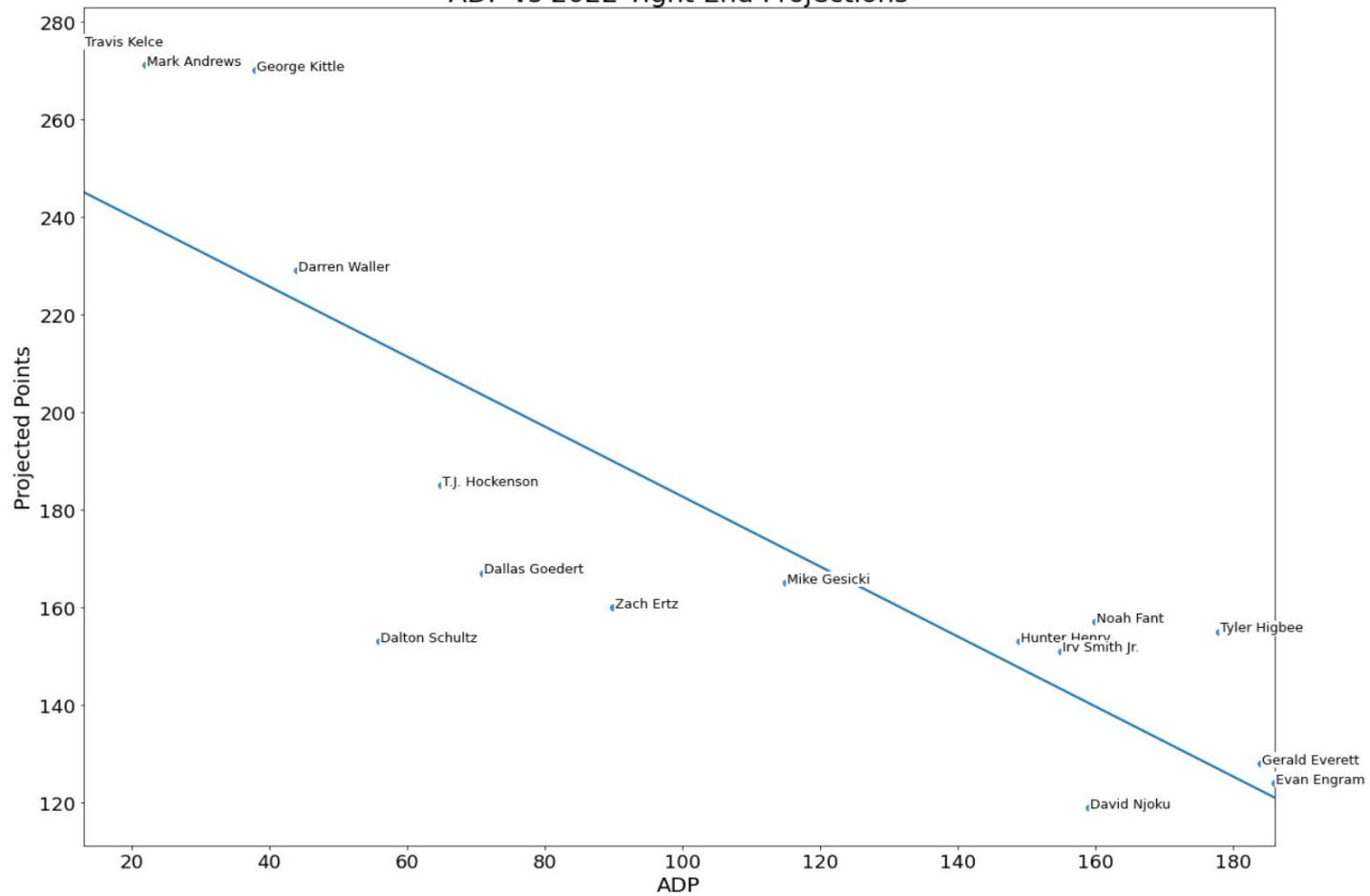ADP vs 2022 Quarterback Projections

ADP vs 2022 Running Back Projections

ADP vs 2022 Wide Receiver Projections

ADP vs 2022 Tight End Projections

Biggest Busts of the 2022 Fantasy Draft

- Mike Williams (round 4)
- Lamar Jackson (round 4)
- Dalton Schultz (round 5)
- Courtland Sutton (round 5)
- Allen Robinson II (round 6)
- T.J. Hockenson (round 6)
- Dallas Geodert (round 6)
- Russell Wilson (round 7)
- Tony Pollard (round 7)
- Christian Kirk (round 9)
- Mike Gesicki (round 11)

Steals of the 2022 Fantasy Draft

- Davante Adams (round 1)
- Cooper Kupp (round 1)
- Derrick Henry (round 1)
- Josh Allen (round 2)
- Tyreek Hill (round 2)
- Alvin Kamara (round 2)
- Patrick Mahomes II (round 3)
- Dionte Johnson (round 4)
- Chris Godwin (round 5)
- Amari Cooper (round 5)

- Adam Thielen (round 6)
- Aaron Rodgers (round 7)
- Tom Brady (round 7)
- Kareem Hunt (round 8)
- Chase Edmonds (round 8)
- Robert Woods (round 9)
- Kirk Cousins (round 10)
- Darrell Henderson Jr. (round 11)
- J.D.McKissic (round 13)

Future Work

- Extension in progress to analyze public yahoo fantasy leagues and the league winners drafting strategies.
- Additional exogenous factors to improve model performance - Strength of schedule, Teammates, Opponent.
- Other modeling techniques - RNN-LSTM model and Facebook Prophet.
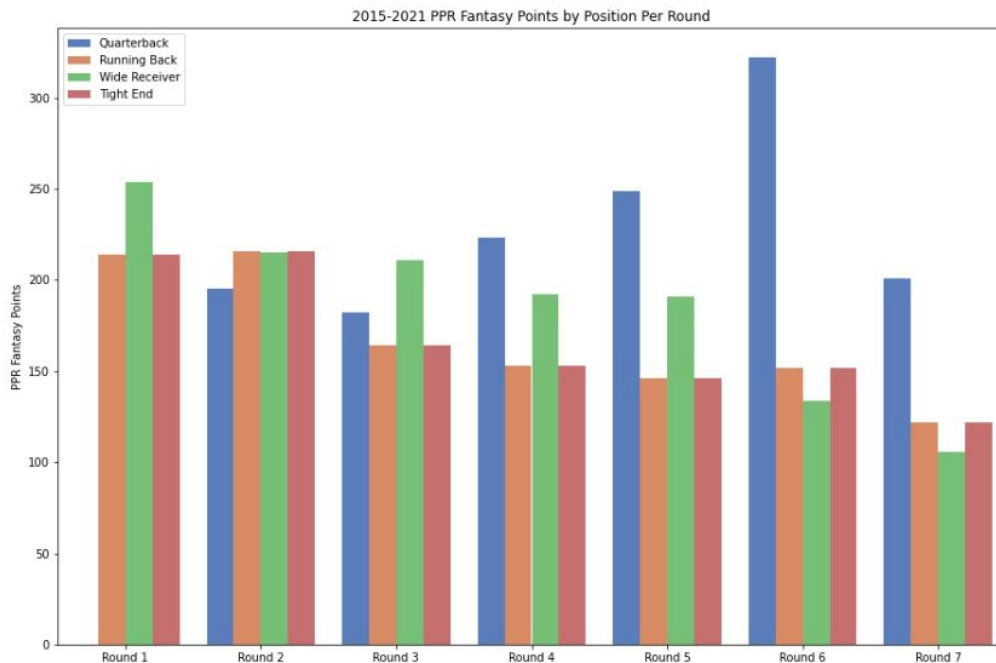- Model to predict rookie and non-veteran fantasy points
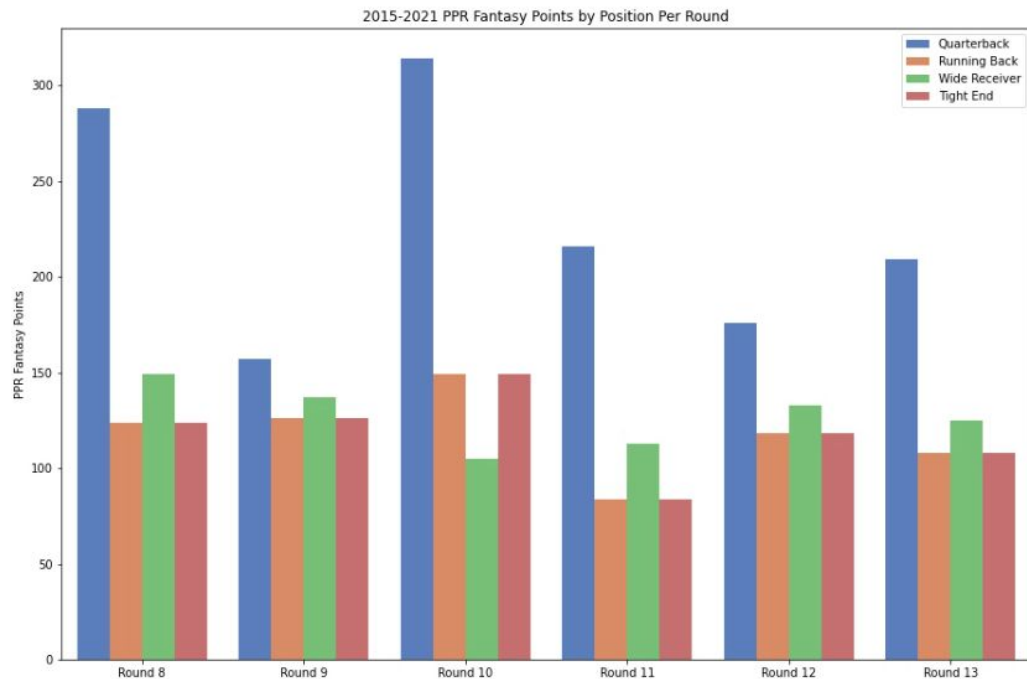
THANK YOU!!

Email : meljoy1099@gmail.com
Github Repo : https://github.com/meljoy1099/fantasy-football-draft-analysis

Rounds 1 – 7 – Starting Lineup (Appendix)

- Round 1 - RB
- Round 2 - TE (WR/RB)
- Round 3 - WR
- Round 4 - WR/RB
- Round 5 - WR/RB
- Round 6 - QB
- Round 7 - WR/RB (TE)

2015-2021 PPR Fantasy Points by Position Per Round

Rounds 8 –13 – Bench (Appendix)

2015-2021 PPR Fantasy Points by Position Per Round

- Wide receivers and Running backs for bench
- Load up on late round sleepers and rookies
- High quarterback value in round 10

Repeat after me. I will NOT defy the fantasy gods and draft a kicker or defense until the last 2 rounds of the draft, I will NEVER have a backup of either, and I swear to check streamers every week. Amen.

2015-2021 PPR Fantasy Points by Position Per Round