

Drafting Fantasy Football like a Pro with Machine Learning



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Project Objectives



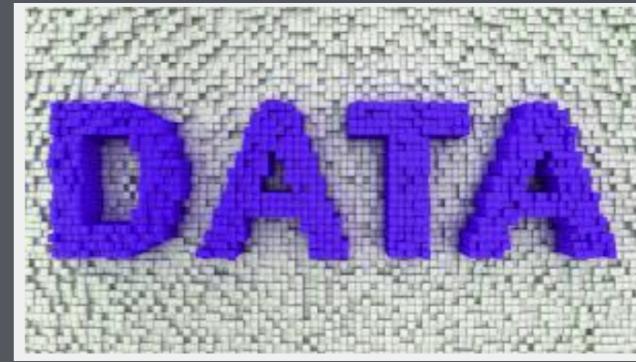
- Win fantasy football league
- Model and predict fantasy points earned by player
- Too many useless metrics & statistics
 - How to know which ones are reliable
 - Stop wasting money on bad stats
- Embarrassment of last place punishments



Player Focus

- Running Backs
 1. Less top tier 1 and tier 2 available to draft
 2. Prone to injuries
 3. Teams style of play
 - Running back by committee
 - More pass orientated offenses
(majority teams > 62% passing)

Methods



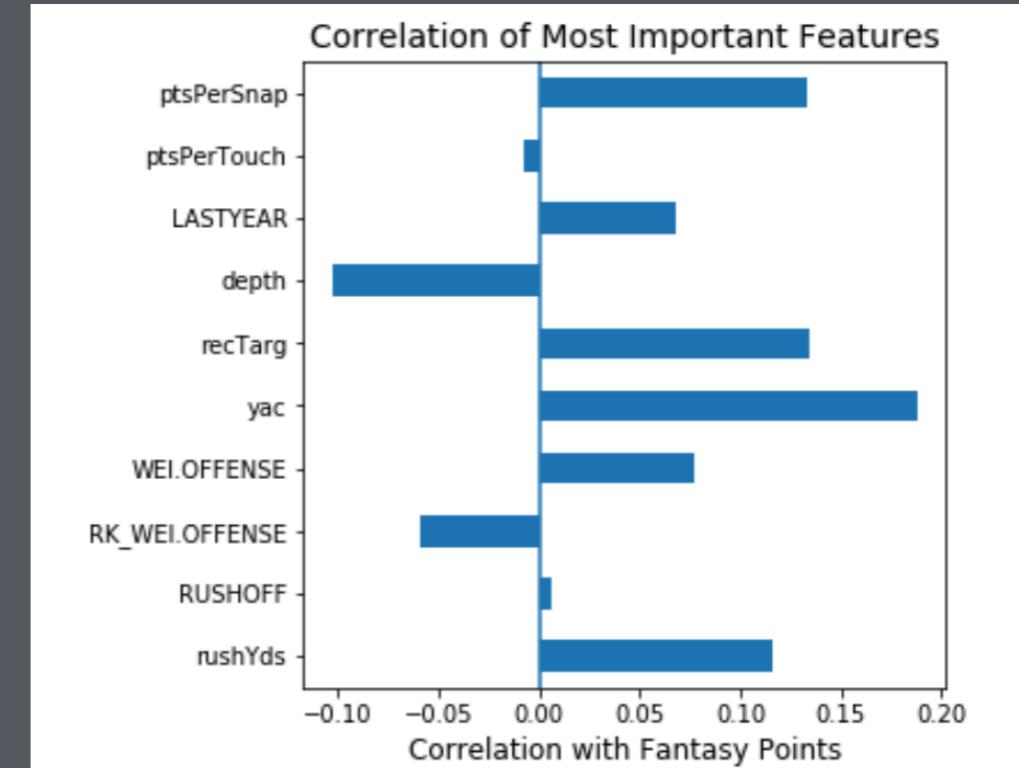
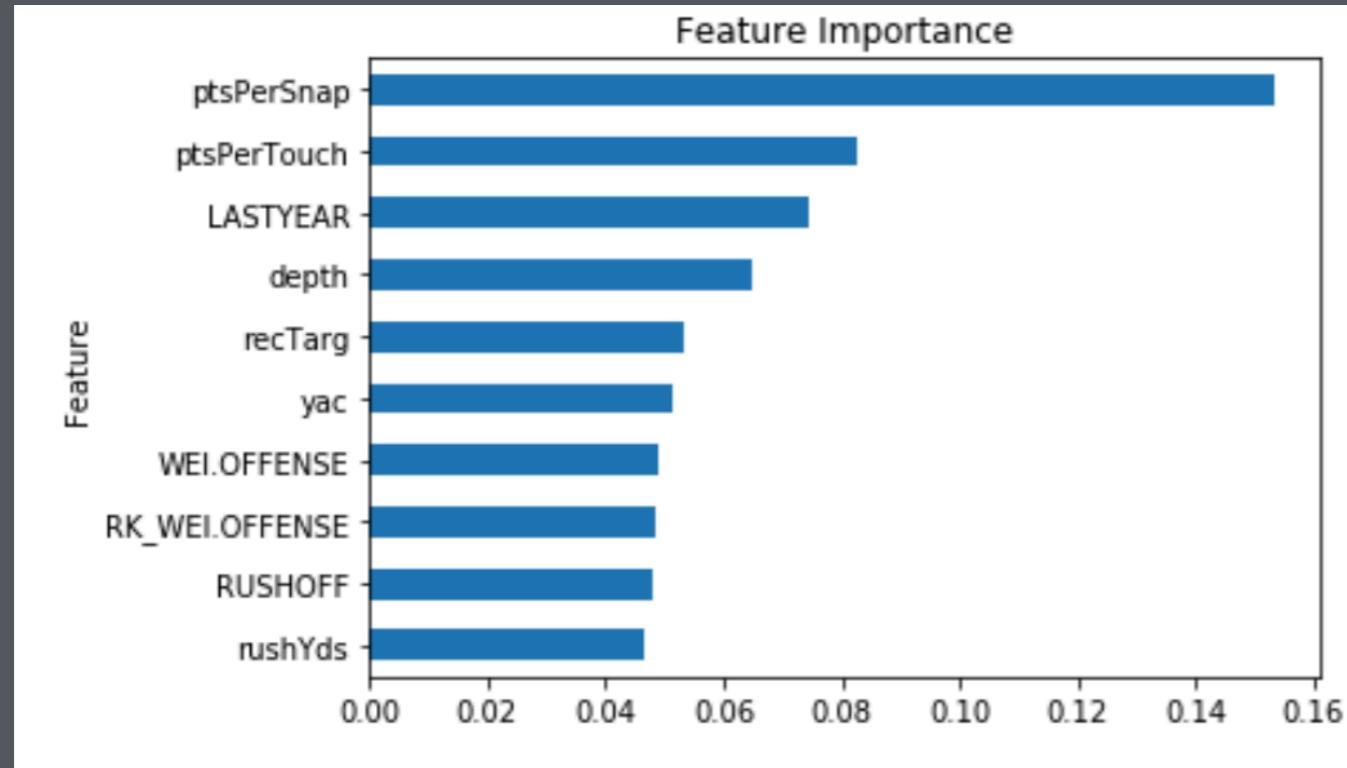
- Extracted from multiple data sources
 - Fantasy Football Outsiders (Team)
 - Pro Football Focus (Individual)
- Features & Targets
 - Started 70+ features → Ended with top 7 features
 - 2 buckets of low and high fantasy points for target
- 8 different models. Over 100 iterations

Model Results: Feature Importance



Decision Tree

Accuracy: 67%



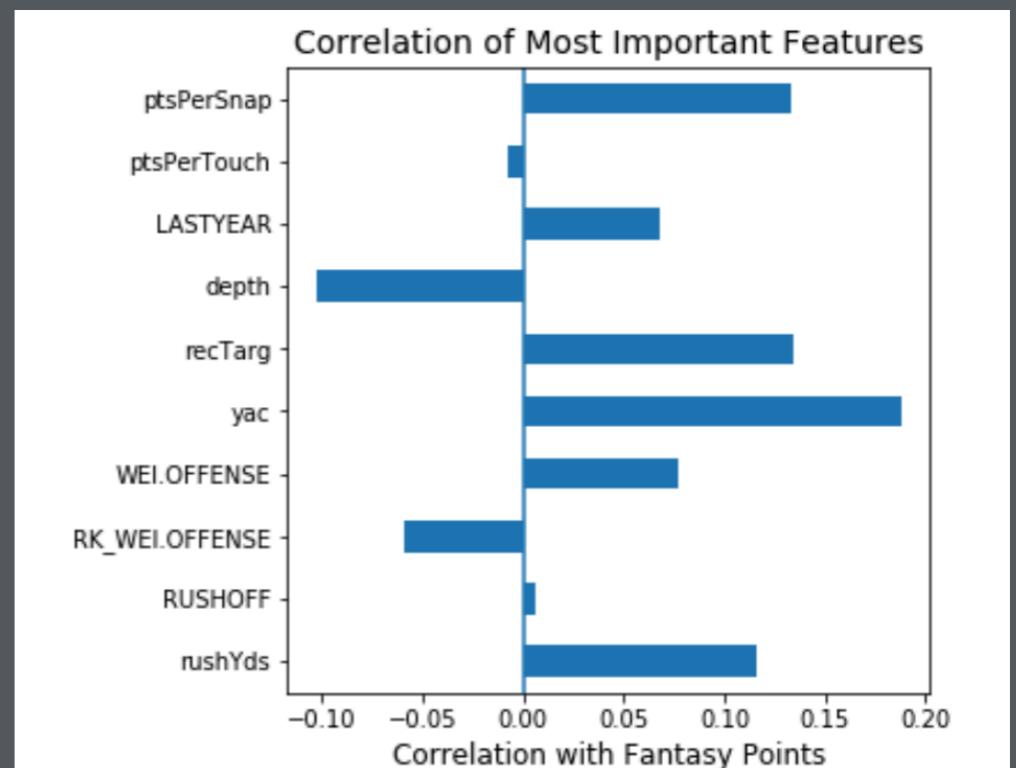
ptsPerSnap= points per snap | ptsPerTouch=points per touch | LASTYEAR=last year's offense
depth=depth of passes | recTarg=receiving targets | yac=yards after contact
WEI=weighted effectiveness of offense rush | RK_WEI OFFENSE=rank of weighted offense
RUSHOFF=rushing offense effectiveness | rushYTds= total rushing yards

Surprising Findings



Observations

- Both team and Individual performance matter
- Points per snap more relevant than points per touch
- Advance stats don't matter as much



Recommendations

Running Backs



Statistics & metrics to target

1. Points per snap
2. Last year offense performance
3. Receiving targets
4. Weighted offense performance
5. Rushing yards

Less important

1. DVOA
2. Rush attempts > 40 yards
3. Tackles avoided
4. Points per touch
5. Reception data
6. Strength of Schedule

Future Work

- Add two new data sources
 1. PlayerProfiler data
 - Proprietary data observations
 2. Football Outsider offensive line effectiveness
- Try new models with new data:
 1. Wide receivers
 2. Quaterbacks

Thanks!