

NBA

PLAYER CLASSIFIER + RECOMMENDATION SYSTEM

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The
TOWN



CLUTCHPOINTS



PROBLEM STATEMENT

Problem: 5 Positions

Inconsistent Stats for each position -
What makes a strong player?

Goal 1:

Attempt to classify NBA players based on
their playing style - not by their labeled
position role

Goal 2:

Create a Player Recommendation system
based on playing style



DATA COLLECTION

Basketball-reference.com

Scraped using: Beautiful Soup
Salaries | ~~Seasonal Player Stats~~

fivethrityeight.com

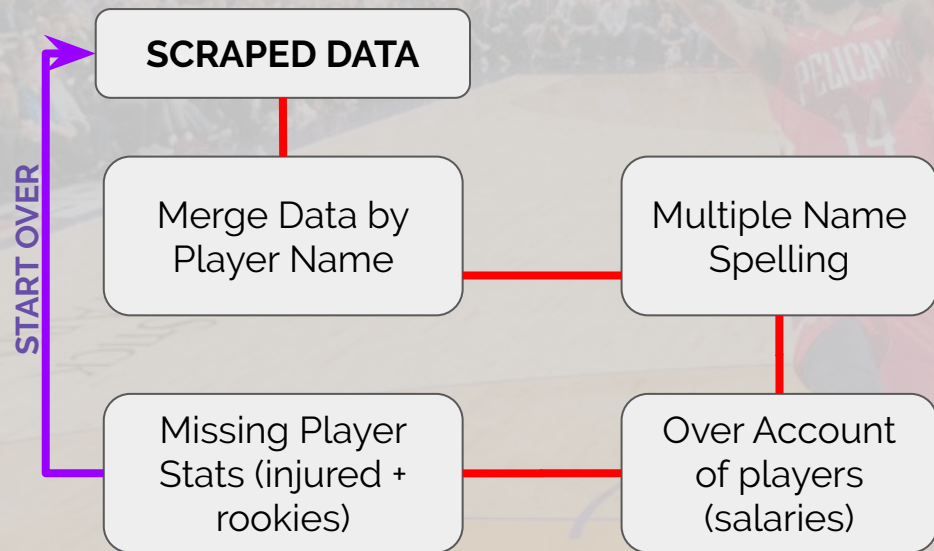
Scraped using: Beautiful Soup
538 RAPTOR Ratings

stats.nba.com

Scraped using: Selenium
2019-2020 Player Statistics | Traditional | Usage | Defense | Scoring | Misc.



DATA CLEANING PROCESS



Final Data Set:

Salaries + RAPTOR ratings + 2019-2020 Stats

416 Players

More than 9 min. played per game

85 Features



CLUSTERING: KMEANS + PCA

DEFENSE

3 Clusters
5 Principal
Components

CEV: **.8333**
Silhouette Score:
.18024

15 features

OFFENSE

3 Clusters
6 Principal
Components

CEV: **.8054**
Silhouette Score:
.2405

22 features

SHOOTING

3 Clusters
5 Principal
Components

CEV: **.894**
Silhouette Score:
.25891

14 features

OVERALL

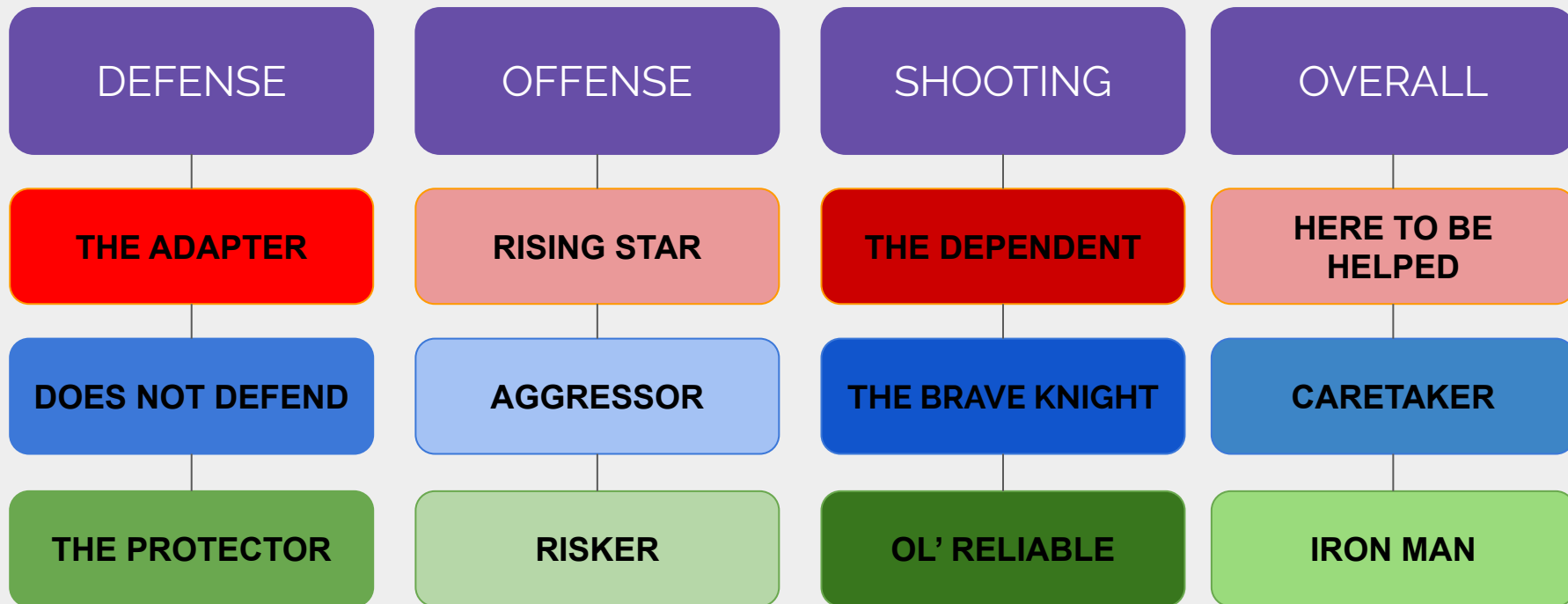
3 Clusters
6 Principal
Components

CEV: **.77**
Silhouette Score:
.24371

22 features



PLAYER CLASSIFICATIONS

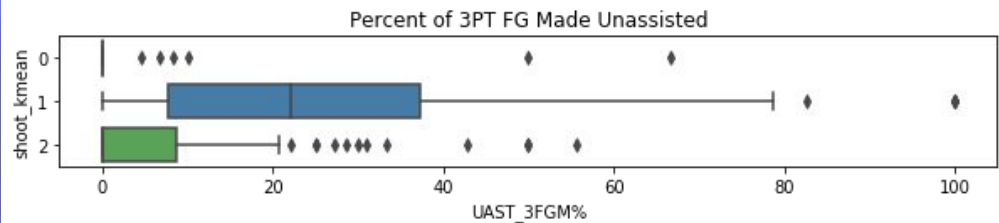
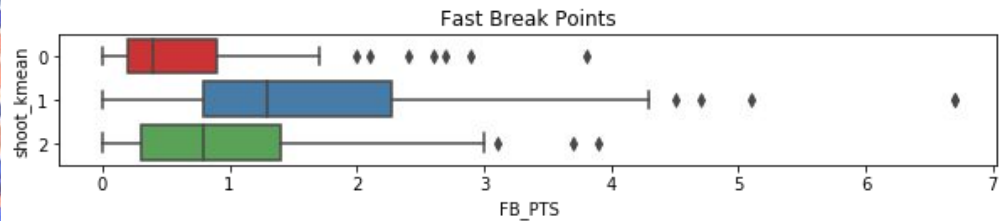
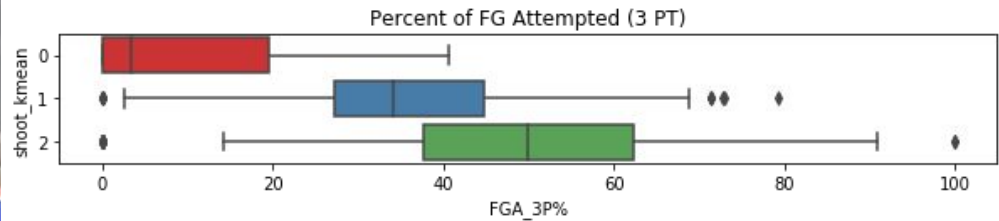
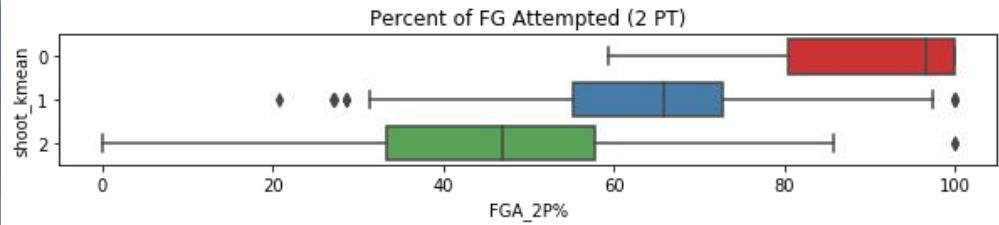


SHOOTING

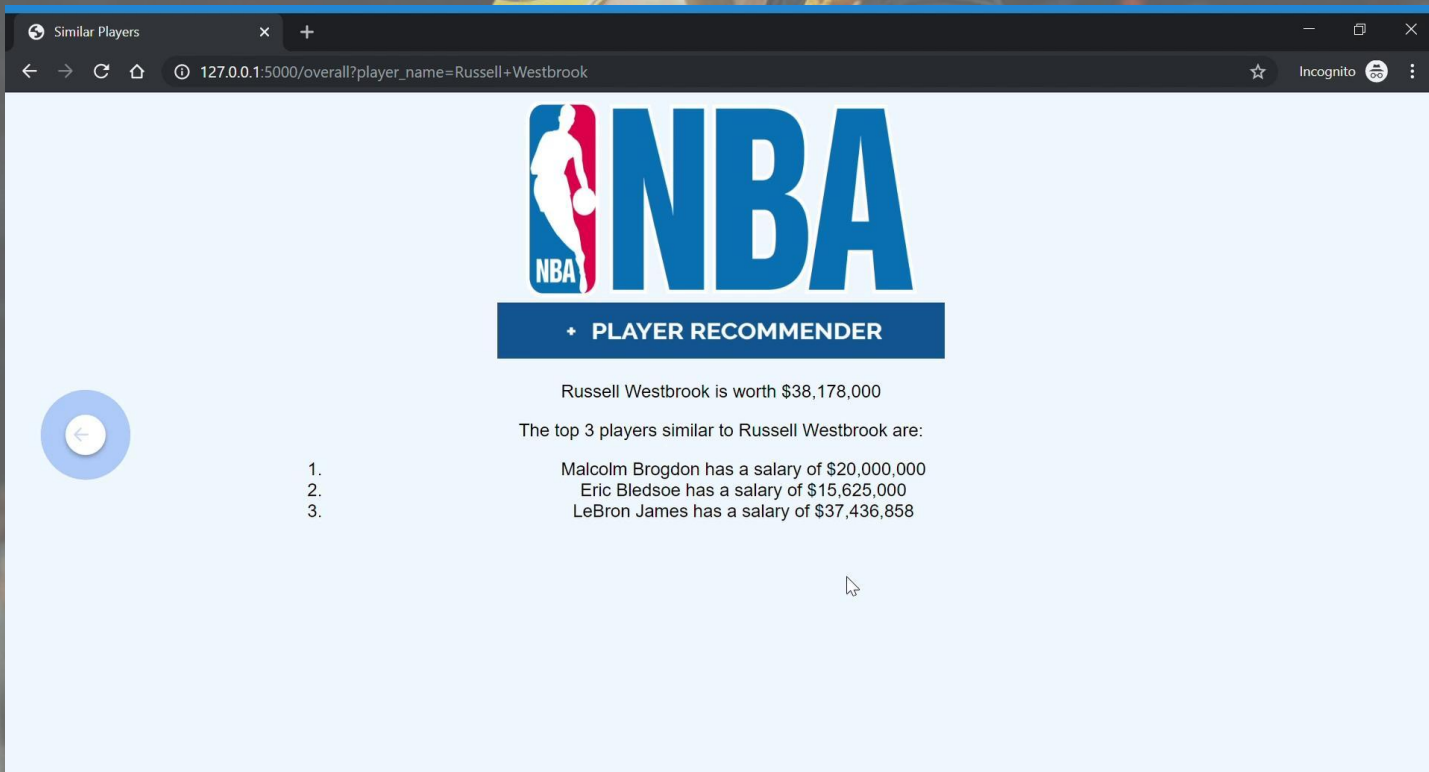
THE DEPENDENT

THE BRAVE KNIGHT

OL' RELIABLE




RECOMMENDATION SYSTEM



Similar Players

127.0.0.1:5000/overall?player_name=Russell+Westbrook

Incognito



+ PLAYER RECOMMENDER

Russell Westbrook is worth \$38,178,000

The top 3 players similar to Russell Westbrook are:

1. Malcolm Brogdon has a salary of \$20,000,000
2. Eric Bledsoe has a salary of \$15,625,000
3. LeBron James has a salary of \$37,436,858



NEXT STEPS

Problem: 5 Positions

Inconsistent Stats for each position - What makes a strong player?

Goal 1:
Reclassify players



Goal 2:
Recommendation
System



GOAL 3:

LONG TERM PROJECT/EASY TO SHARE

- Proper Data Cleaning Plan
- More Data + More Classifications
- Social Media + Google Search Trends