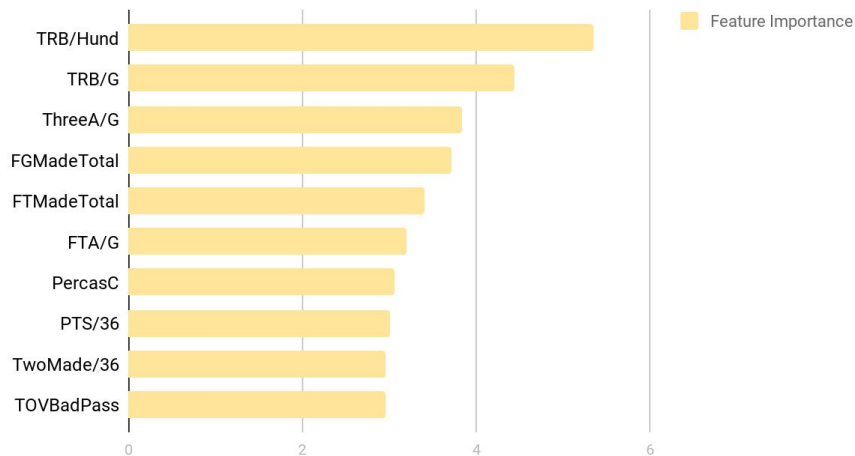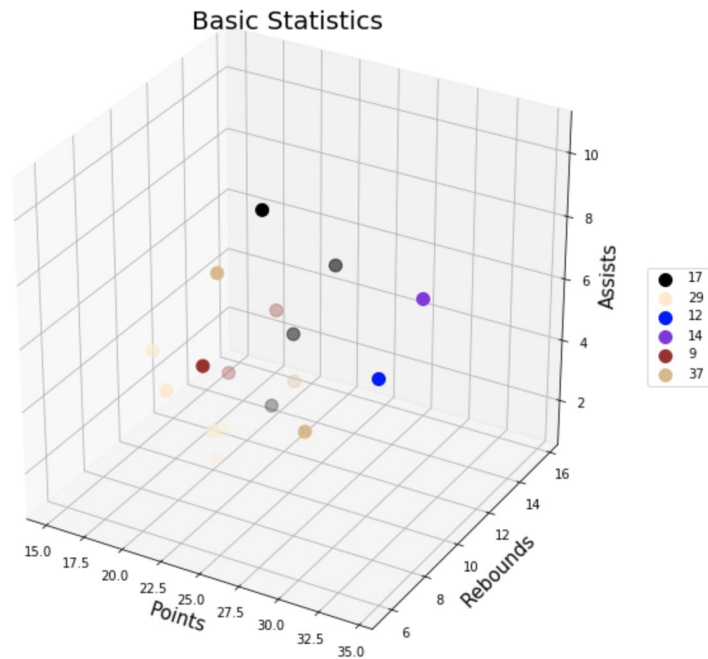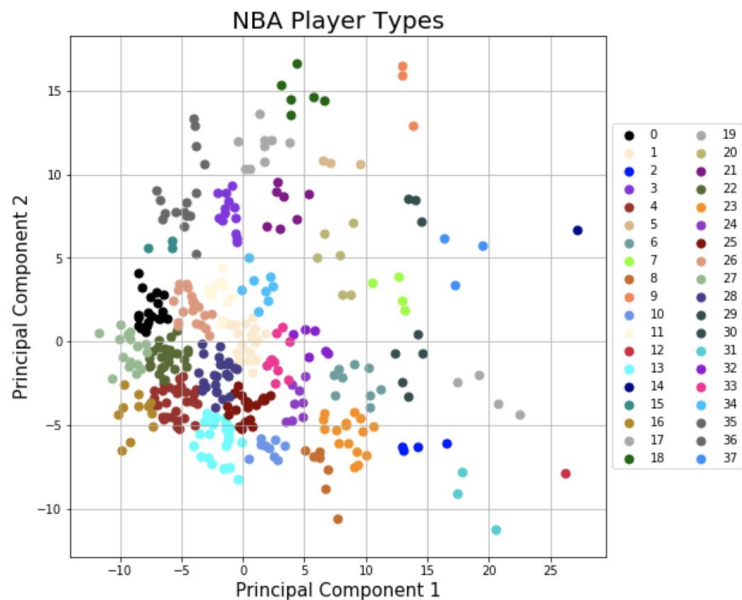# The Ideal NBA Lineup

Anubhav Jain

Most Influential Features That Define Players

- Restricted the available for clustering to 12+ MPG and 10 games played in NBA
- Created 38 clusters of 400+ players
- Clusters are mostly positionless and are defined using a combination of 140+ per game, advanced, per 36 min, per 100 possessions and shooting statistics
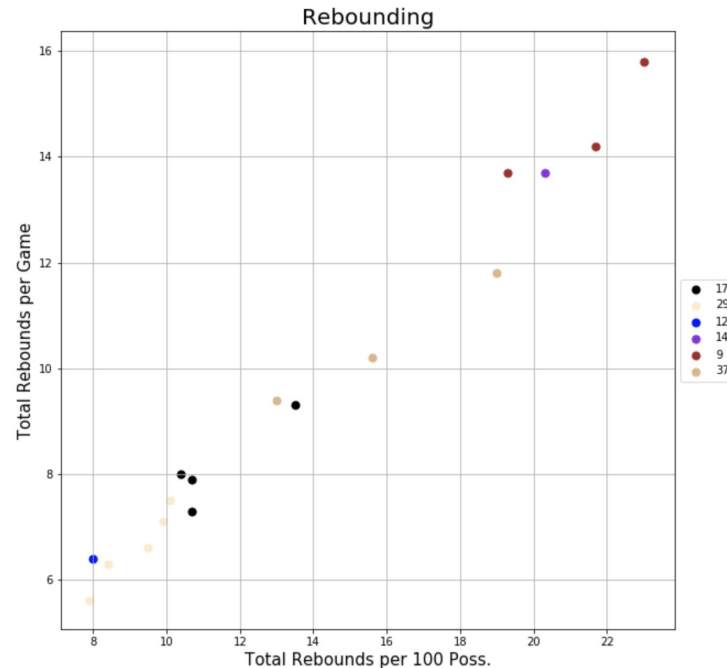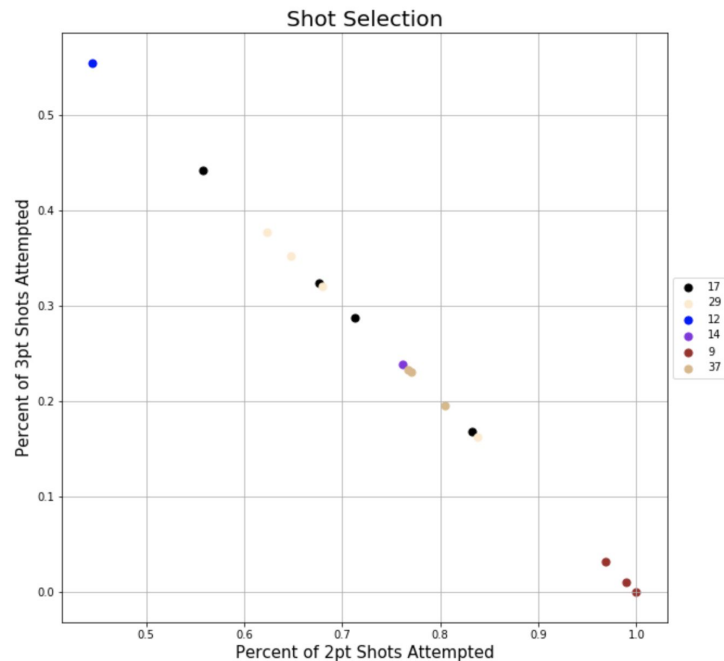
Top 10 Features Defining The Clusters
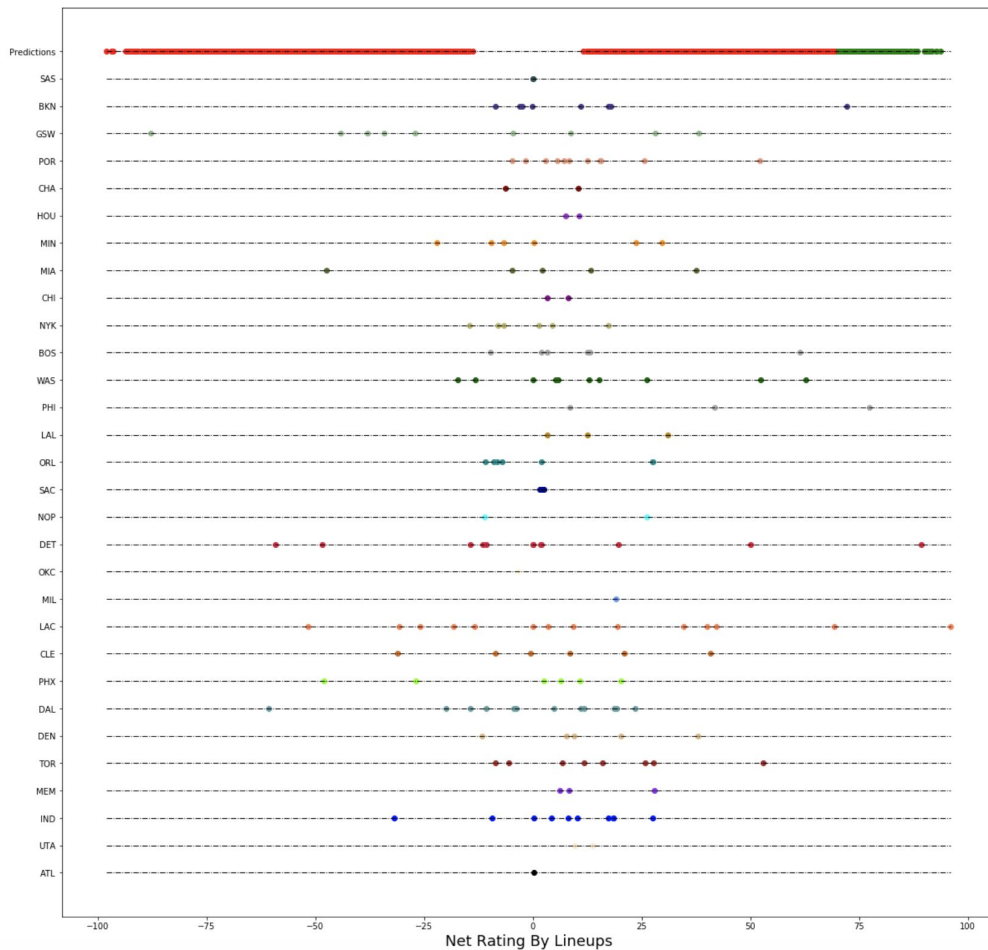
Grouping of Players (Min. 12 M/G + 10 Games)

Grouping of Players (Min. 12 M/G + 10 Games)

Player Types

Cluster	Example Players	Primary description	Secondary description	Rank
9	Andre Drummond, Rudy Gobert	Paint beast (offense and defense)	Consistent player	All-star caliber player
12	James Harden (Only one)	High usage primary ball handler, primary scorer, one of a kind	Inside-out scorer	Superstar
13	Duncan Robinson, Patty Mills	Three point specialist	Guard	Average role player
14	Giannis Antetokounmpo (only one)	Athletic, long, agile big man with above average handles	Leads team in every category, not a long range shooter	Superstar
17	LeBron James, Luka Dončić	All around franchise player	On court floor general	Superstar
23	Kemba Walker, CJ McCollum	Ball handling playmaker	Scorer	All-star caliber player
29	Jayson Tatum, Pascal Siakam	Athletic, hard nose, two-way primary scorer	Highly proficient midrange game, outside potential	All-star
37	Joel Embiid, Anthony Davis	Elite offense first option scoring big man	Inside-out presence	Rising superstar

Breakdown Of Lineups

Best Lineups in NBA 2019-20 Season

Top 4 Net Rtgs:
(7, 12, 18, 31, 35)
(2, 14, 18, 31,35)
(2, 12, 18, 31, 35)
(6, 12, 18, 31, 35)

Most Consistent Player Types in Best Lineups:
18: Two-way double double producing, rebounding beast
31: Team leading, long range three point sniping, primary ball handling guard
35: Young, athletic, two-way, glass-cleaning rim runner
Ex: Deandre Jordan (18), Damian Lillard (31), Willie-Cauley Stein (35)

Bottom 4 Net Rtgs:
(0, 1, 15, 16, 27)
(0, 4, 15, 16, 27)
(0, 15, 16, 22, 27)
(0, 15, 16, 24, 27)

Most Consistent Player Types in Worst Lineups:
0: Hussle player, provides energy, average to below average role player
15: Third string big man
16: Third string guard
27: Veteran third string forward
Ex: Grant Williams (0), JaKarr Sampson (15), Wayne Ellington (16), Anthony Tolliver (27)

Future Work

- Find a better system of computing relative per minute stats for each lineup
- Include injured players to create a more complete dataset of NBA players
- Predict and compare other metrics to evaluate lineup performance

Thank You!

https://github.com/ajain1017/ideal-nba-roster