

NBA Allstar Predictions

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The All-Star Game was one of my top highlights as a player. In my eye, it gave me a good idea of where I ranked among my peers. That was always my benchmark to say that I am still in the upper echelon of players.





- The National Basketball Association All-Star Game is a basketball exhibition game hosted every February by the National Basketball Association (NBA)
- showcases 24 of the league's star players.
- March 2, 1951.
- The starting lineup for each squad is selected by a combination of fan, player, and media voting,
- a 12-man roster.
- Coaches are not allowed to vote for their own players.
- If a selected player cannot participate because of injury, the NBA commissioner selects a replacement.



Who would gain from an accurate allstar prediction?

01

Owners/coaches:

Who needs to determine the future salary of players and which players will generate the most income from jersey sales.

02

Players

Many NBA contracts are constructed to reward incentives based upon allstar selections. Julius Randle can earn more than a million more dollars if he makes a reserve team.

03

Gamblers

The all-star game is watched by over 7 million people a year, including many gamblers. Accurately predicting an all-star to make the team that others didn't can pay.

04

Fans

If you want to know if your favorite player will make the team.

DATA



Allstar stats are taken from
[http://basketball.realm.com/nba/
allstar/game/rosters](http://basketball.realm.com/nba/allstar/game/rosters)
The information needed to be
merged together for every year

	Pg	PgA	Pg%	PP	W	PT%
4	65	27.0	4.6	7.6	.480	3.4
53	53	33.1	7.4	15.0	.460	1.2
41	0	12.2	1.9	5.5	.300	1.0
30	0	16.6	2.6	5.0	.440	1.1
1	64	19	24.6	4.2	0.4	.480
60	60	35.3	9.1	20.0	.457	3.4
59	39	33.1	4.5	8.5	.524	0.3
0	50.0	1.9	3.5	5.6	.560	0.0
72	18.1	3.2	8.3	8.6	.484	2.9

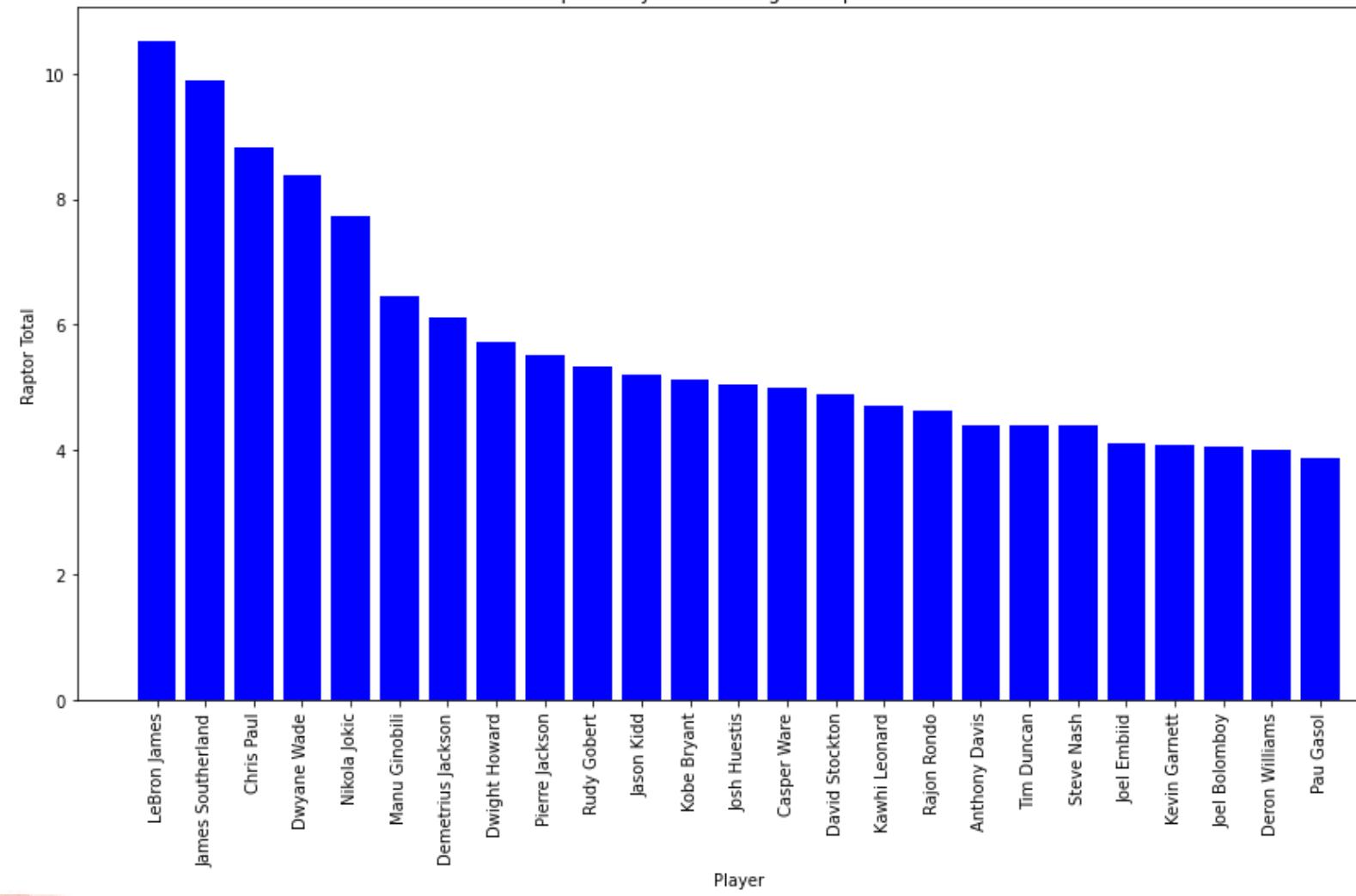
[https://www.basketball-
reference.com/](https://www.basketball-reference.com/)



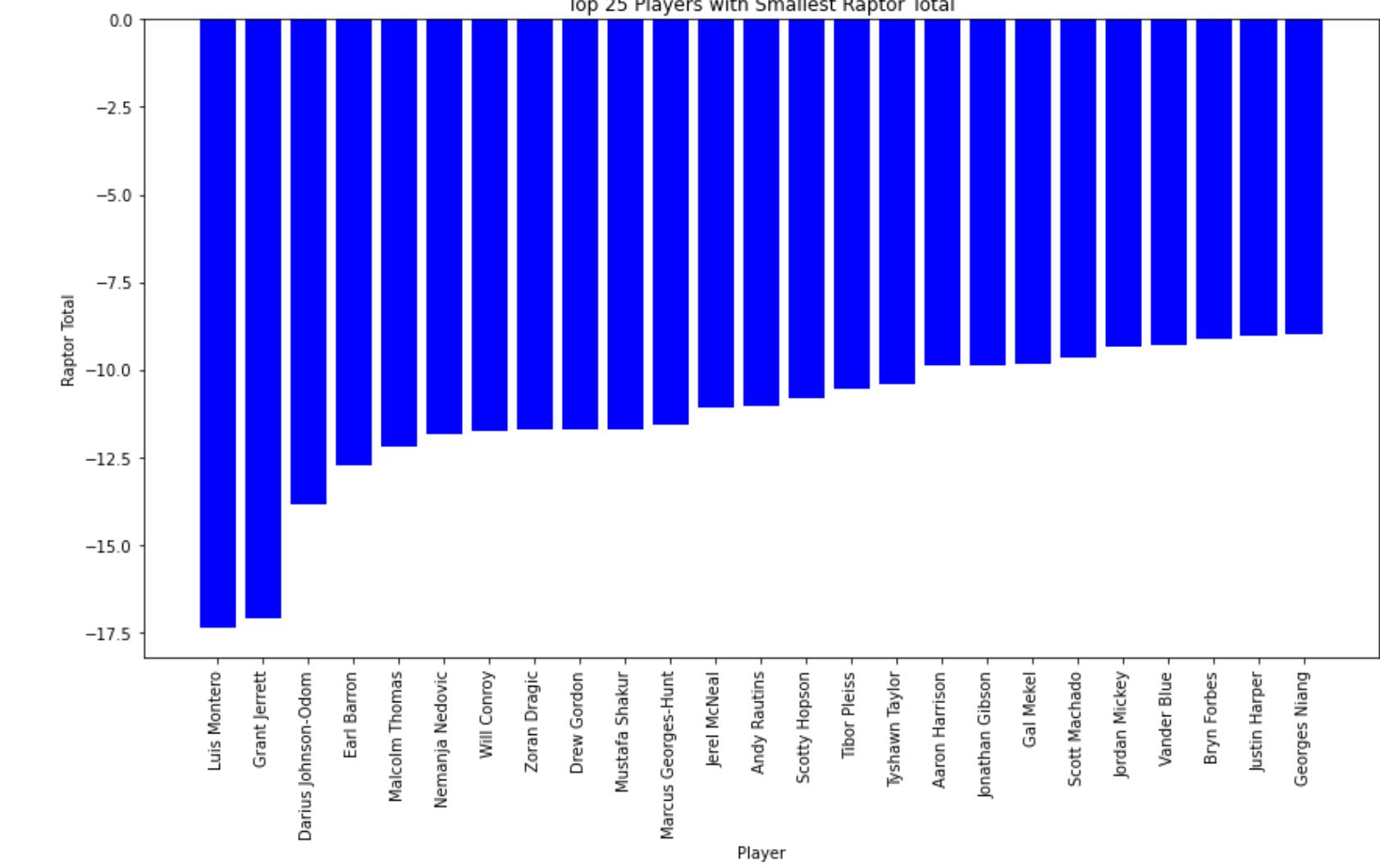
[https://projects.fivethirtyeight.com/
nba-player-ratings/](https://projects.fivethirtyeight.com/nba-player-ratings/)
Our ratings, updated daily, use play-
by-play and player-tracking data to
calculate each player's individual
plus-minus measurements and wins
above replacement, which accounts
for playing time



Top 25 Players with Largest Raptor Total

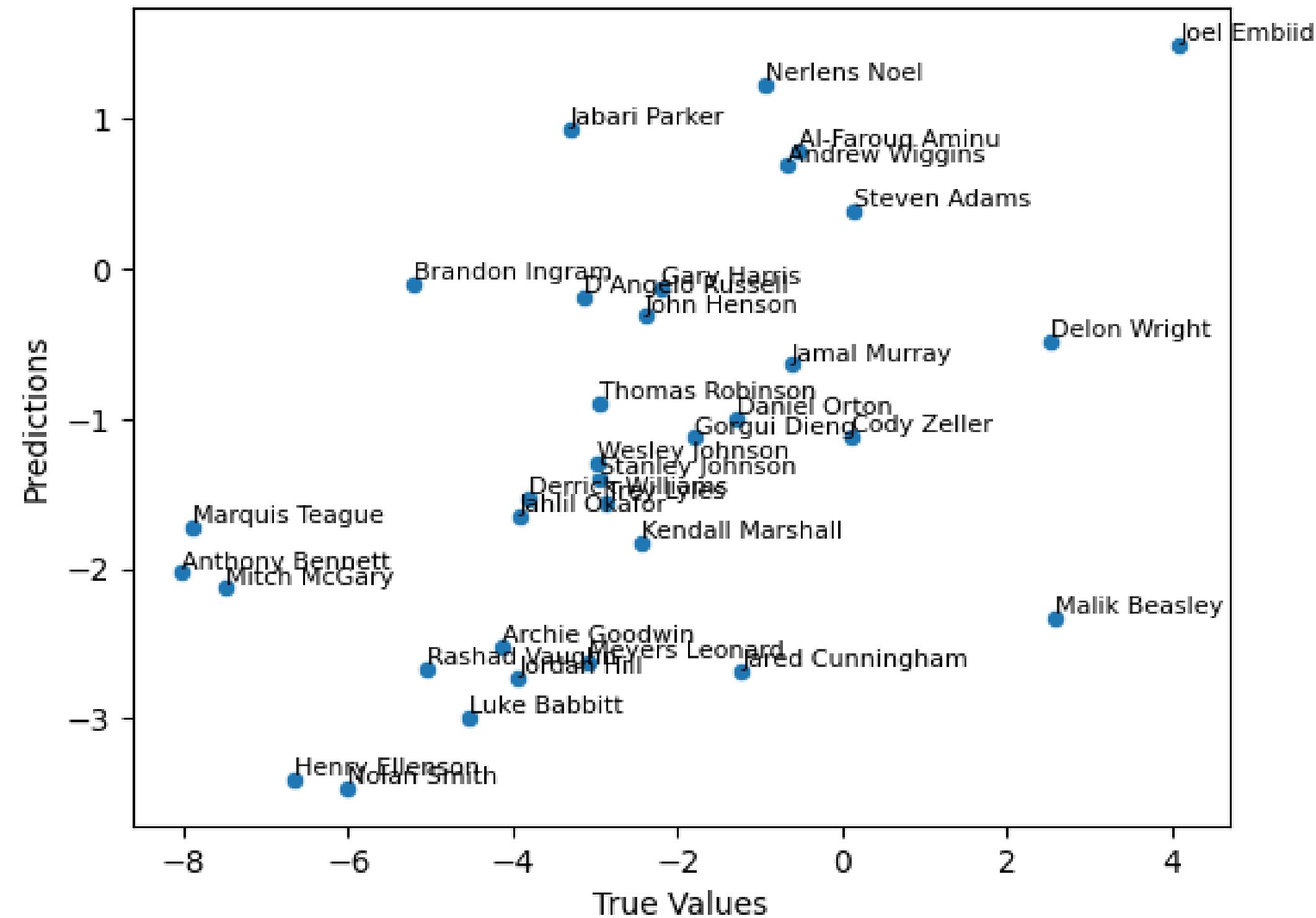


Top 25 Players with Smallest Raptor Total

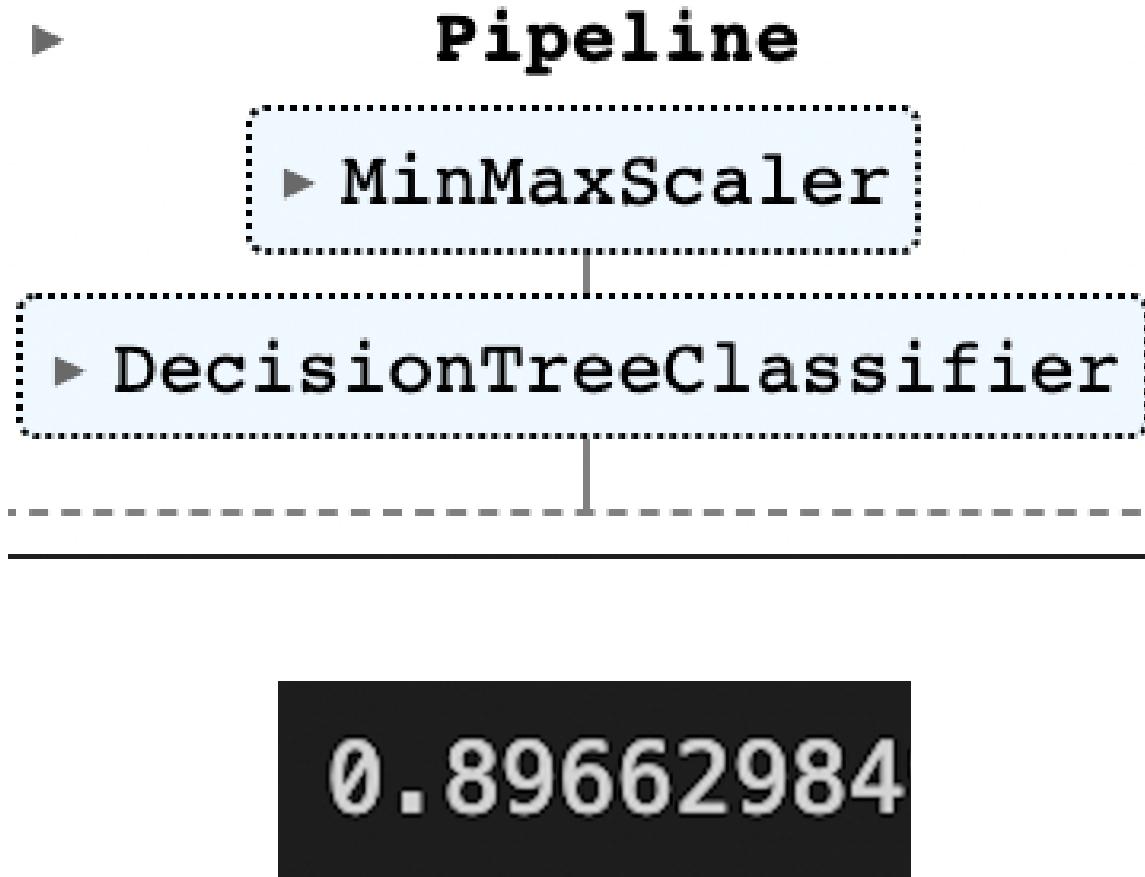




True Values vs. Predictions



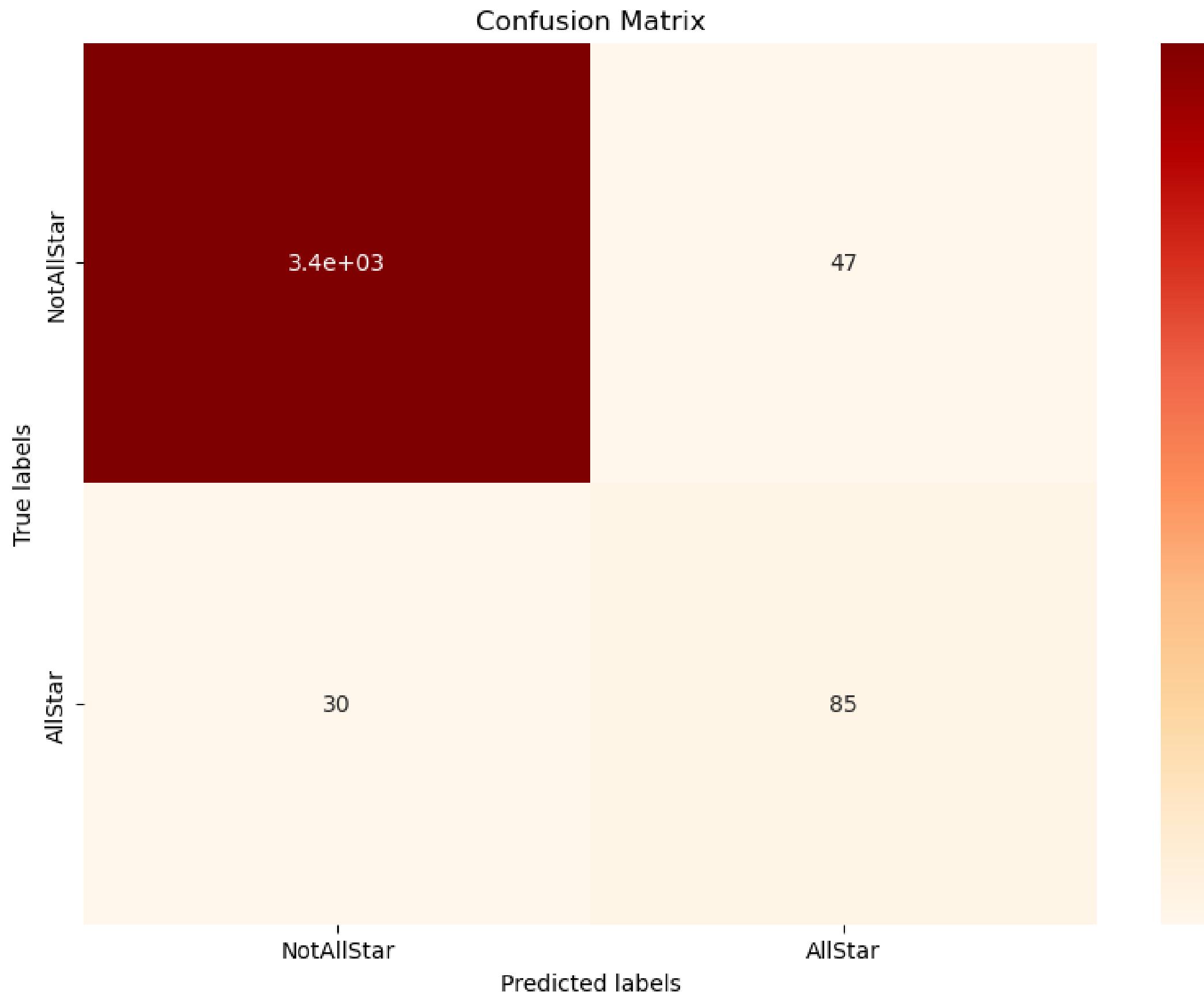
First Fit



- The first model used a decision tree classifier with a min-max scalar
- The model has an accuracy score of .896 percent but did not account for the class imbalance.
- Other models and metrics needed to be tried to improve this score.

Testing with Different Models

- **Different pipelines were tested for top performance;**
 - **(Decision Tree Classifier, ExtraTrees, Random Forest Classifier, SVD, XG Boost)**
- **The top-performing models were:**
 - **ExtraTreesClassifier, SMOTE, GridSearch CV, and Min-Max Scalar)**
 - **.991**
 - **(SVC, with SMOTE, GridSearch CV, and Min-Max Scalar)**
 - **.979**



The best model was

GridSearchCV

► **estimator: Pipeline**

► **MinMaxScaler**

► **SMOTE**

► **ExtraTreesClassifier**



Recommendations for implementation

01

Use the tool to identify free agents or potential trade partner

02

Predict NBA contracts and potential of incentives kicking in

03

Identify which metrics a player needs to improve upon to become allstar

04

Use current app to find Allstar stats of previously named allstars



X

Select Year
2002

Select Team
TOT

if player not listed put player name here

Select Player
Tariq Abdul-Wahad

Hey Now! Are you an Allstar?



Allstars Through Time

This application will tell you whether a player was an allstar or not!

Player Stats for Selected Year and Team

	pos	raptor_total	season	age	pts_per_g	orb_per_g	trb_per_g	ast_per_g	stl_per_g	blk_per_g
6,242	SG	-3.0024	2,002	27	5.6	1.7	3.5	1	0.8	0.4

Not an All-Star

The Future



First

Fit the prediction model on a working app. That would enable user input to predict Allstar's chances for unknown data

Next

Use the application to further make decisions about team construction. Are there better players out there for cheaper?

Last

Find the Next Allstar!



Thank You! Question?

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