

NBA Shots Log Analysis 2014-2015 Season

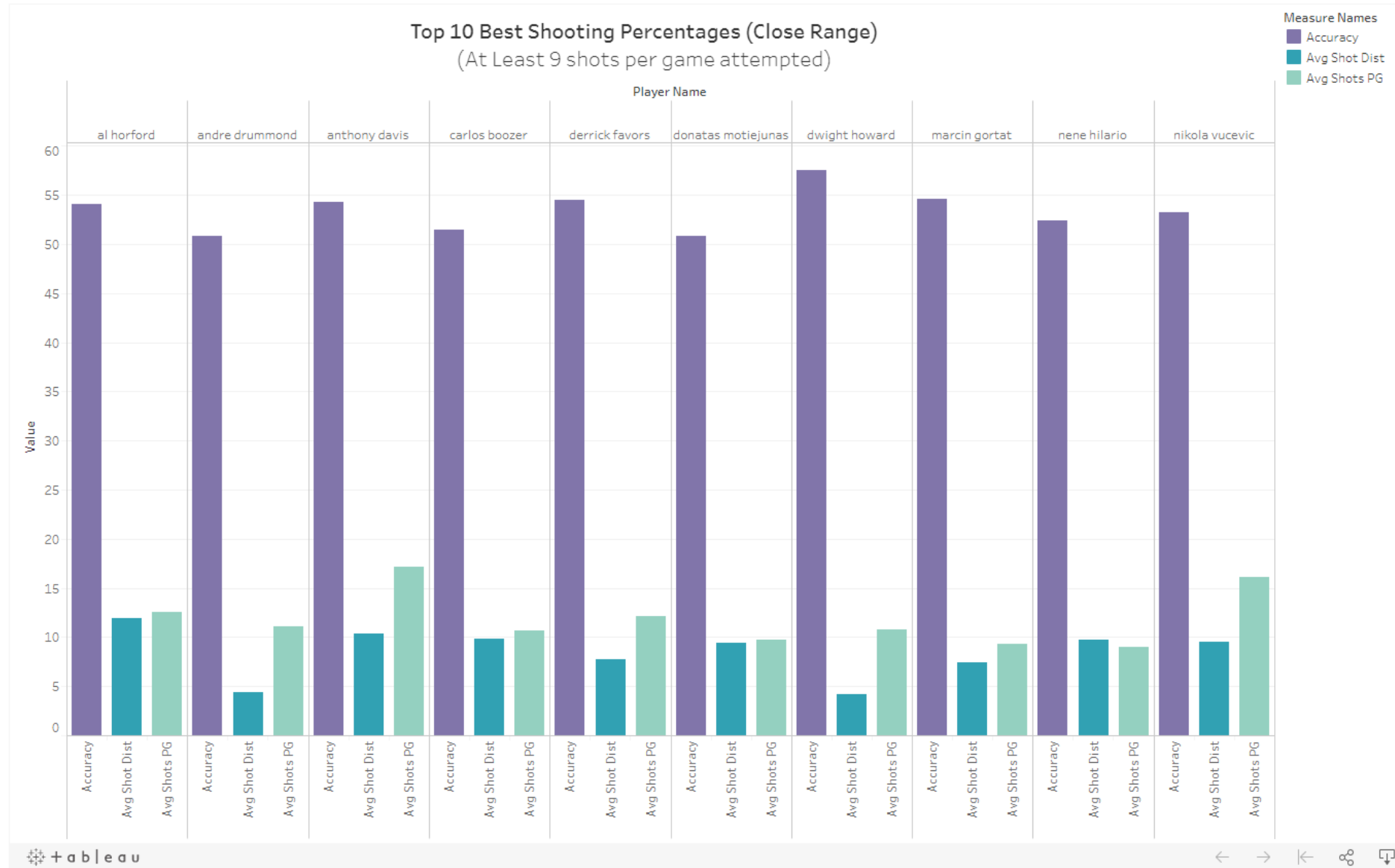


With Predictive Modeling for Game Won And Shots Made

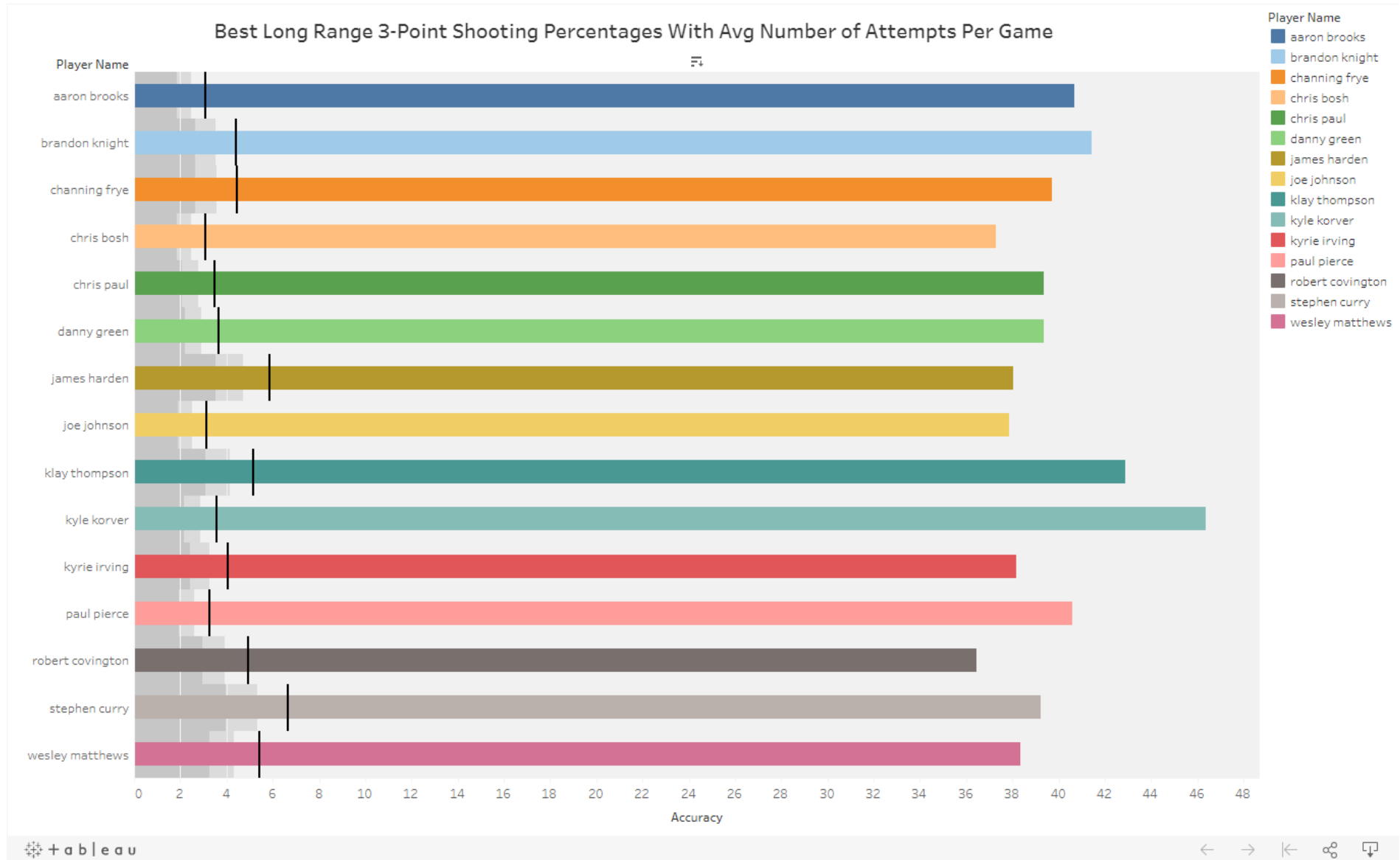
Analysis

- ❖ Impact of Analytics on Shot Selection
- ❖ Predictive Modeling Game Winner
- ❖ Predictive Modeling Shots Made

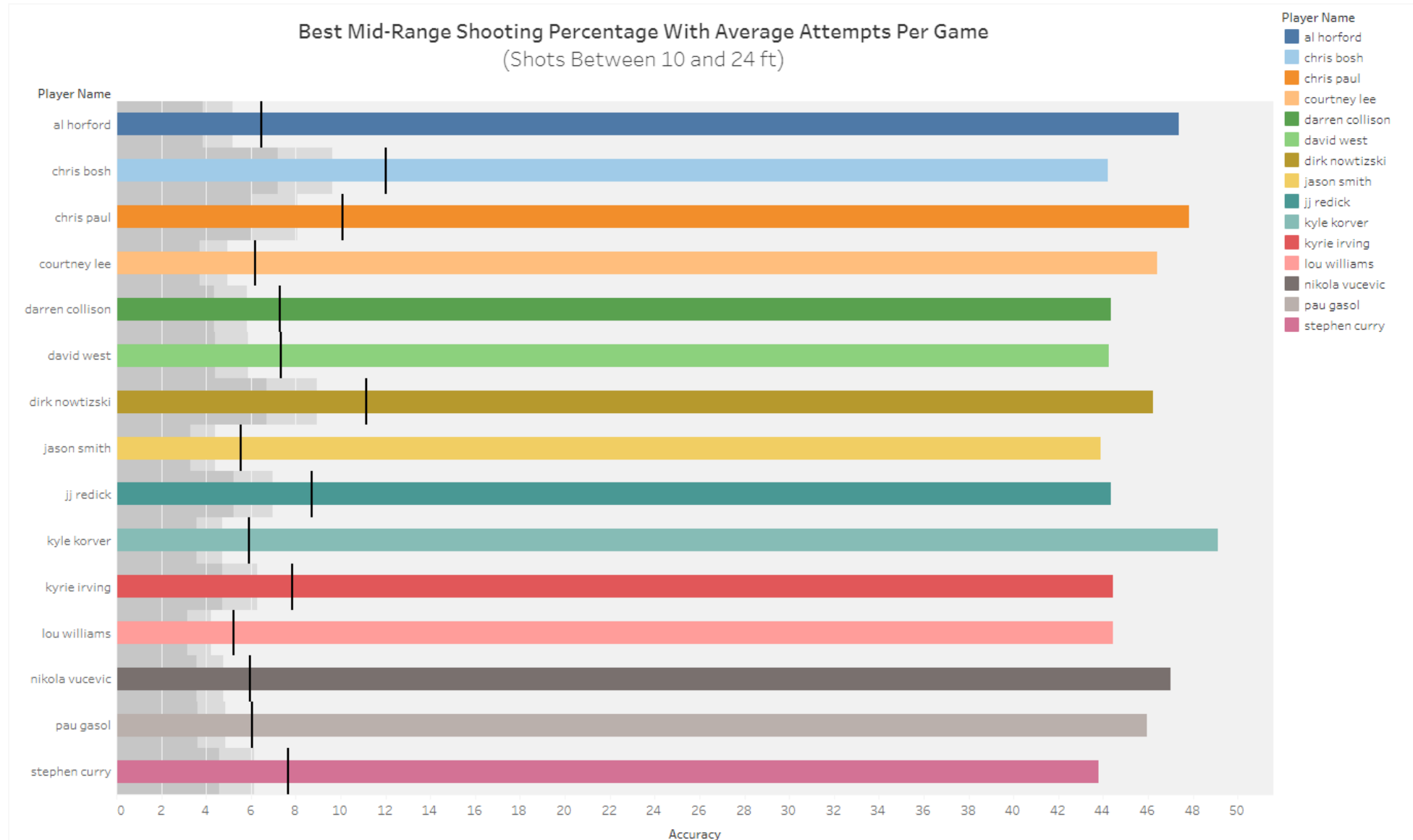
Best Close-Range Shooters



Best Long-Range Shooters

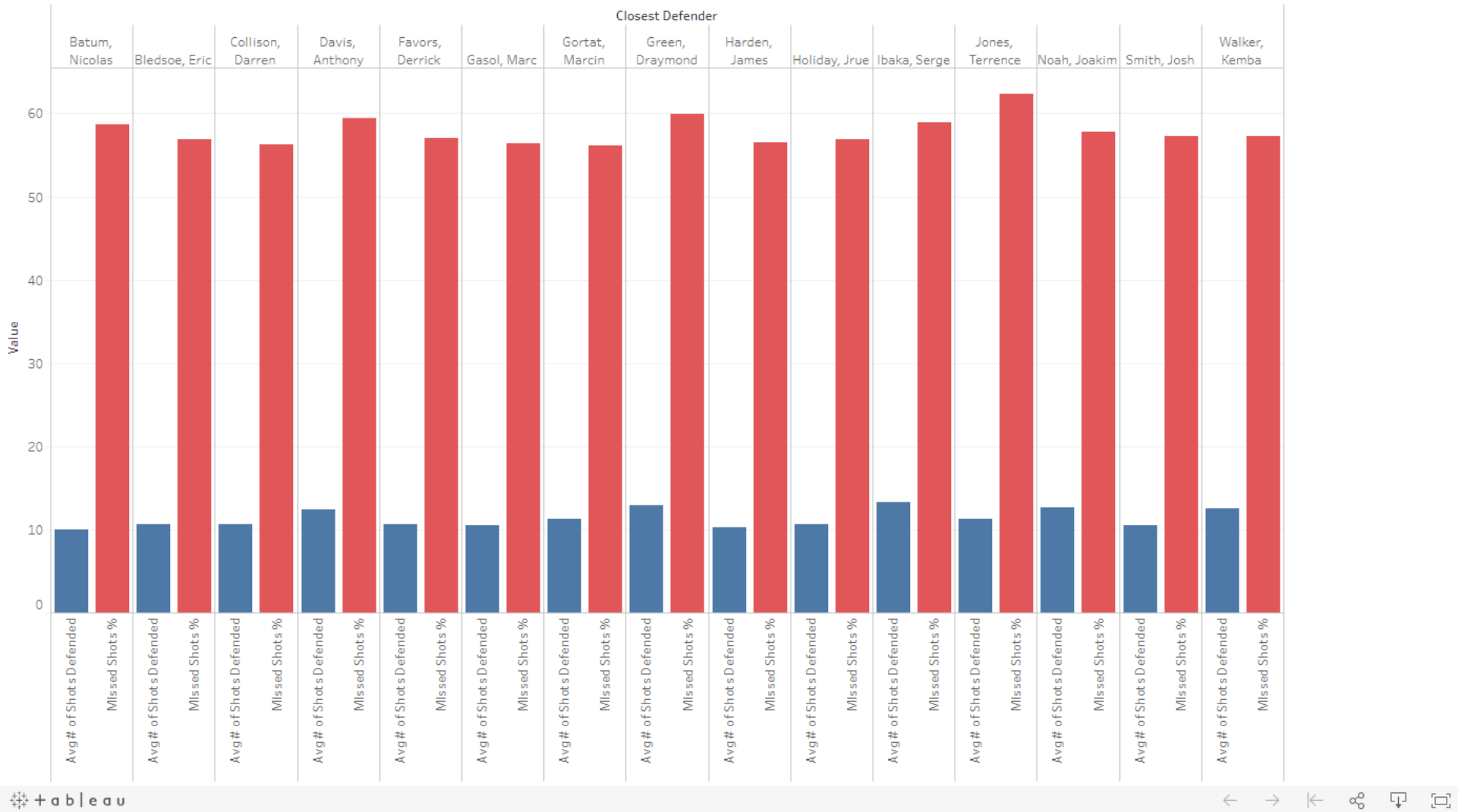


Best Mid-Range Shooters



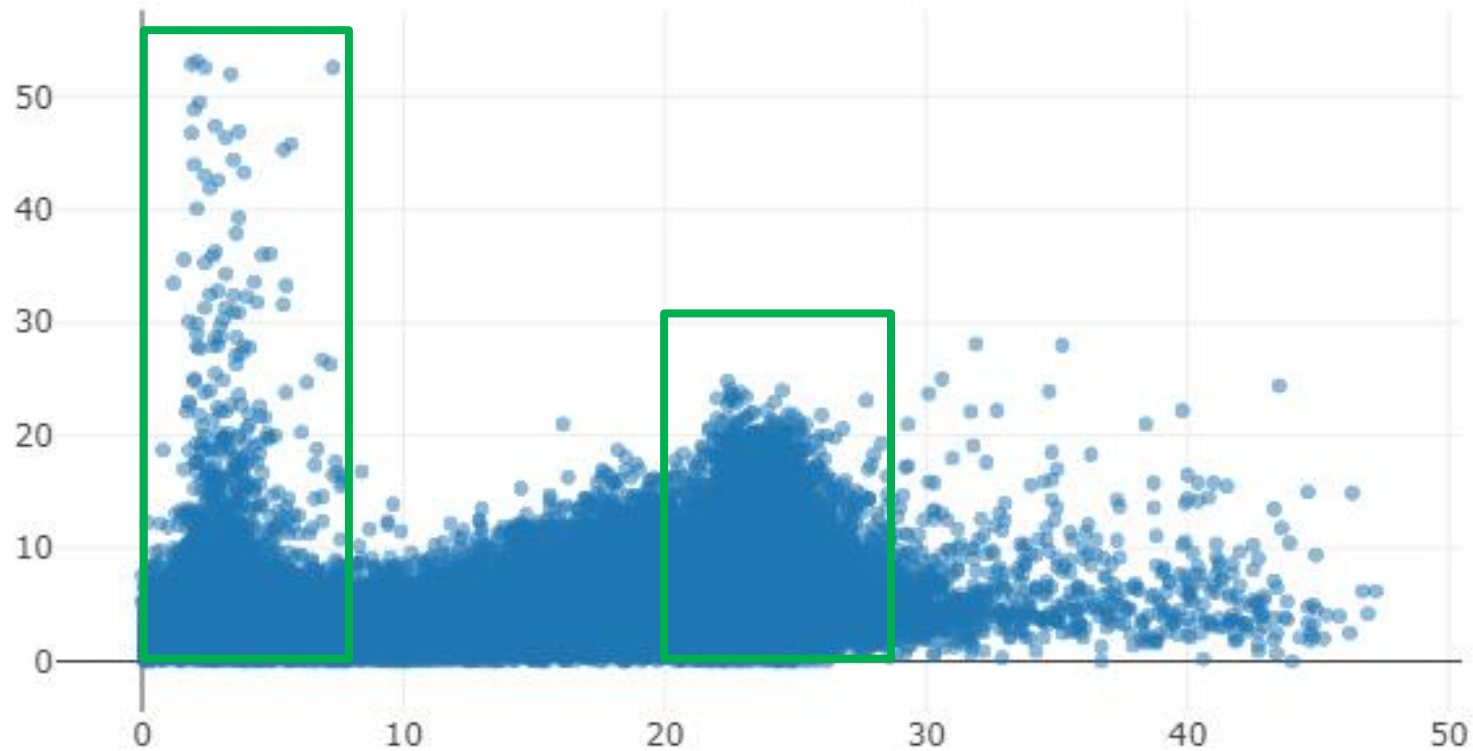
Best Defenders

Top 15 Defenders: % Missed Shots With Player Defending
(At least 10 shots Defended Per Game)



Evidence For The Prevalence Of The Close-Range And Long-Range Shots In The NBA

How Shot Distance is Affected by Closest Defender

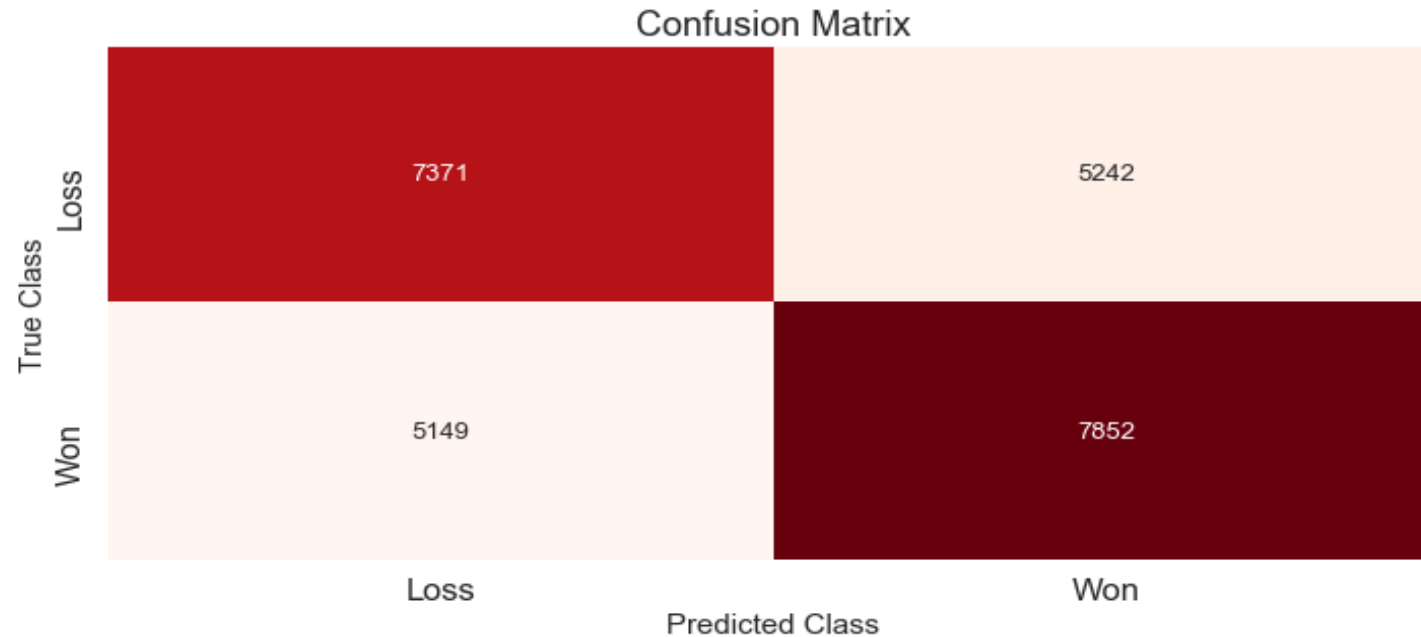


Classifier To Predict Game Outcome

Optimized Gradient Boosting Classifier Model Using All Features

	precision	recall	f1-score	support
0	0.59	0.58	0.59	12613
1	0.60	0.60	0.60	13001
accuracy			0.59	25614
macro avg	0.59	0.59	0.59	25614
weighted avg	0.59	0.59	0.59	25614

```
conf_matrix(y_test, y_pred_gbt2, cmap='Reds')
```

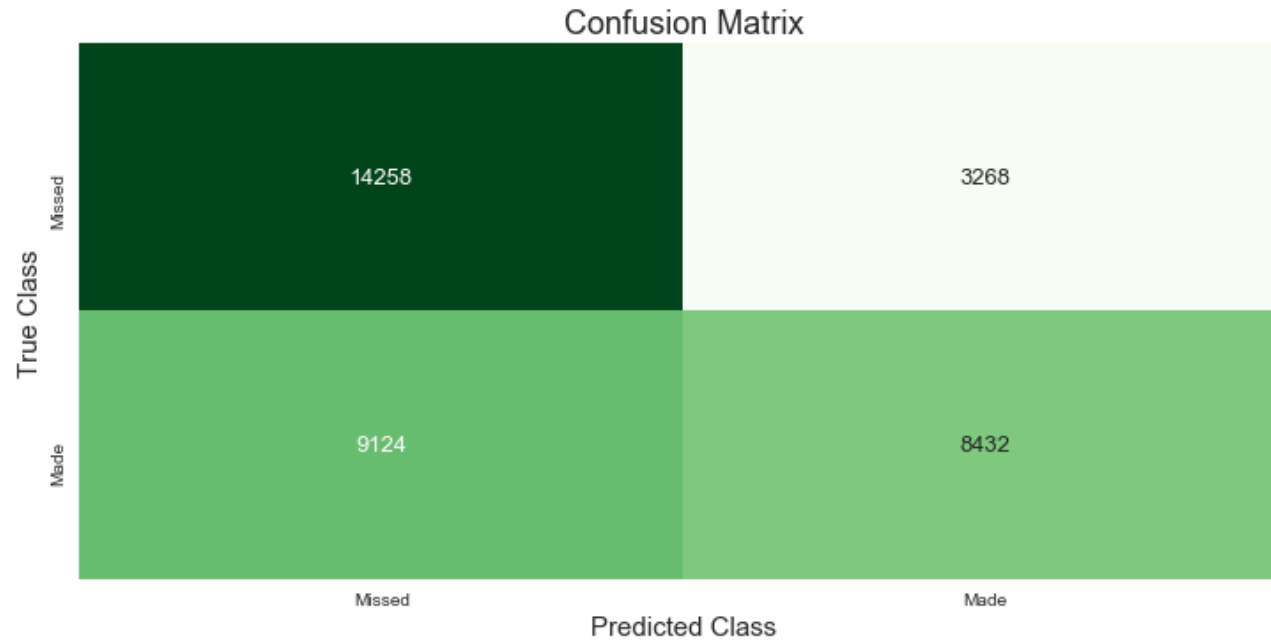


Gradient Boosting Classifier Classifying Made And Missed Shots

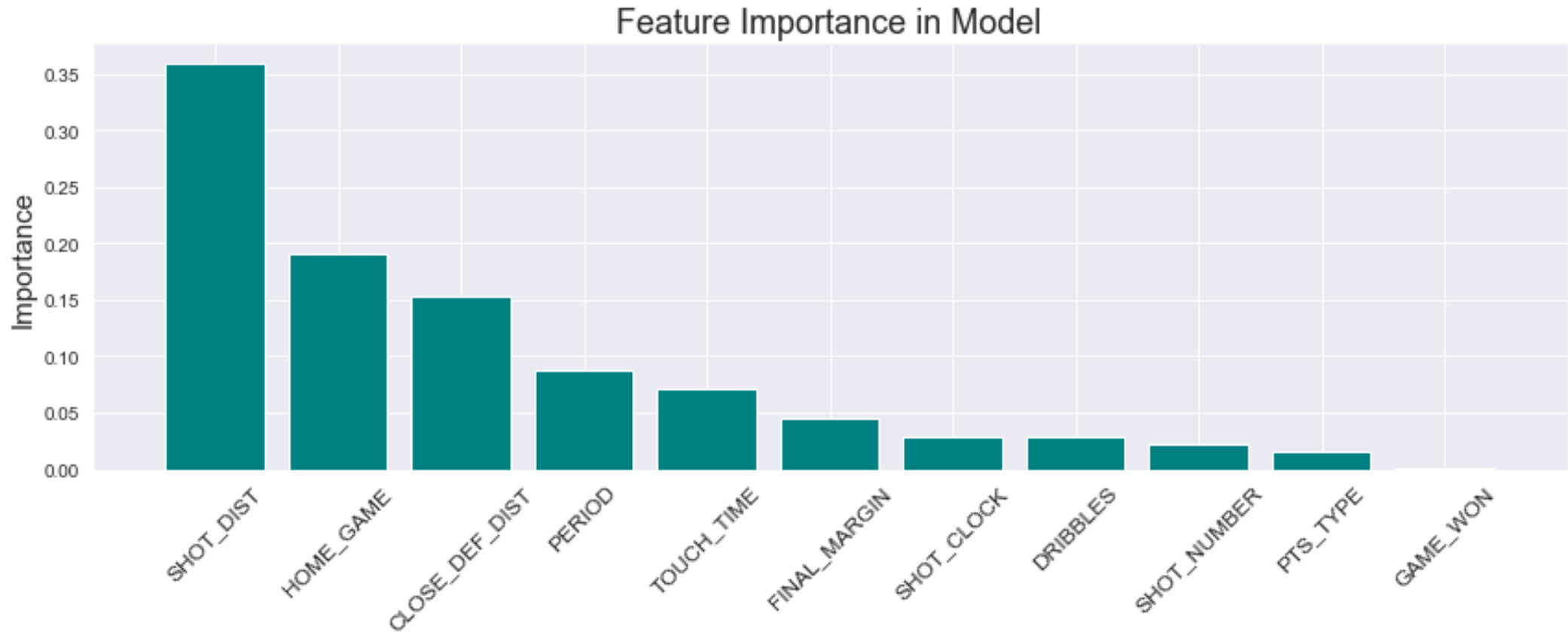
GB Baseline Model All Features

	precision	recall	f1-score	support
0	0.61	0.81	0.70	17526
1	0.72	0.48	0.58	17556
accuracy			0.65	35082
macro avg	0.67	0.65	0.64	35082
weighted avg	0.67	0.65	0.64	35082

```
conf_matrix(y_test, gb_pred, cmap='Greens')
```



Most Important Features Gradient Boosting Model

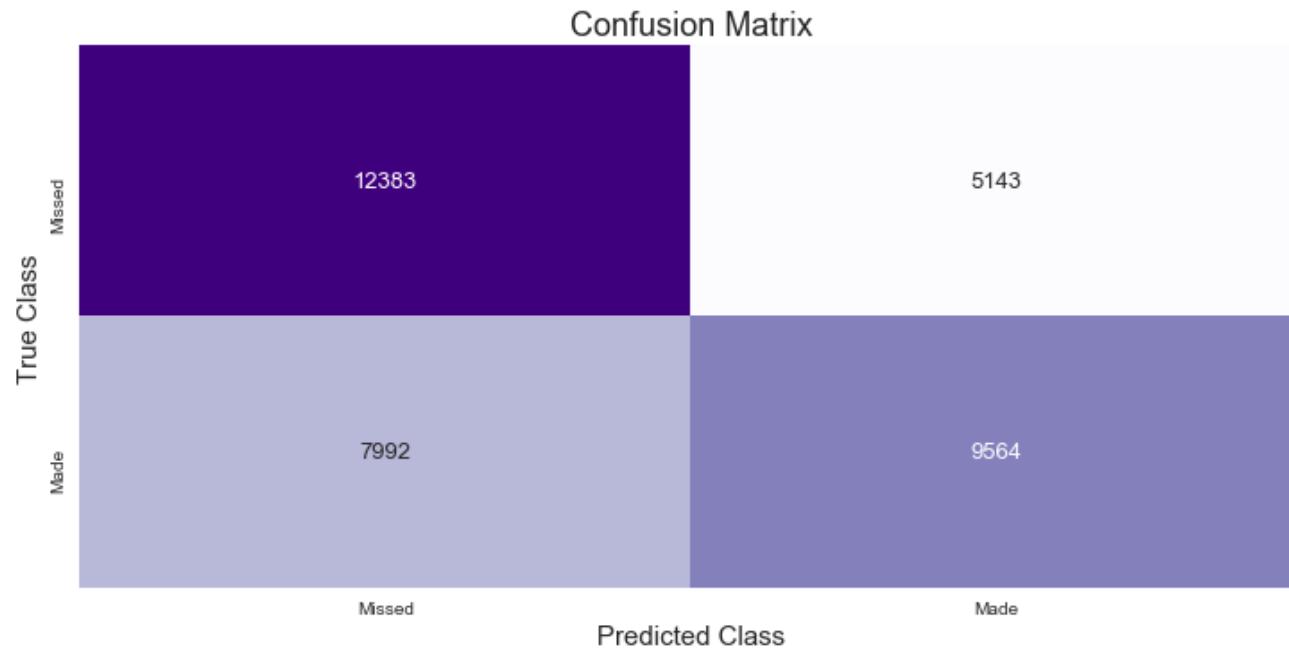


AdaBoost Classifier Classifying Shots Made And Missed

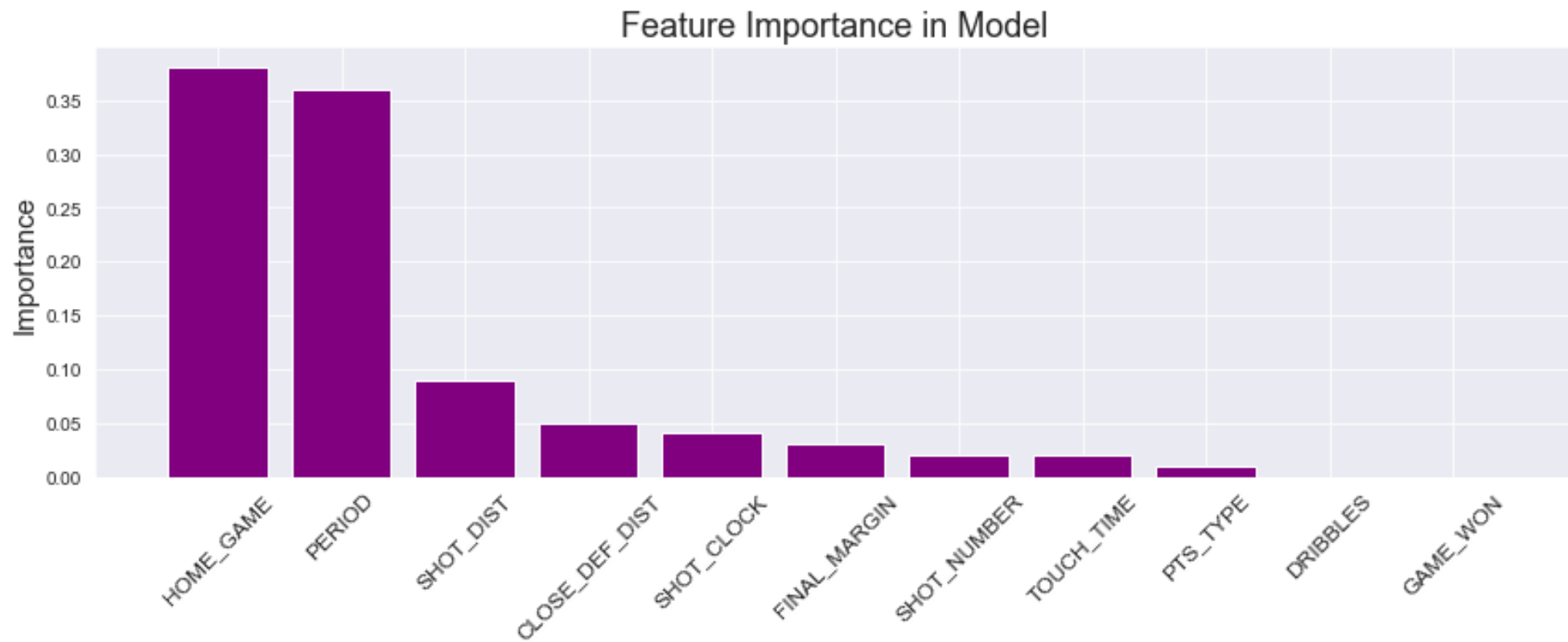
AB Baseline Model All Features

	precision	recall	f1-score	support
0	0.61	0.71	0.65	17526
1	0.65	0.54	0.59	17556
accuracy			0.63	35082
macro avg	0.63	0.63	0.62	35082
weighted avg	0.63	0.63	0.62	35082

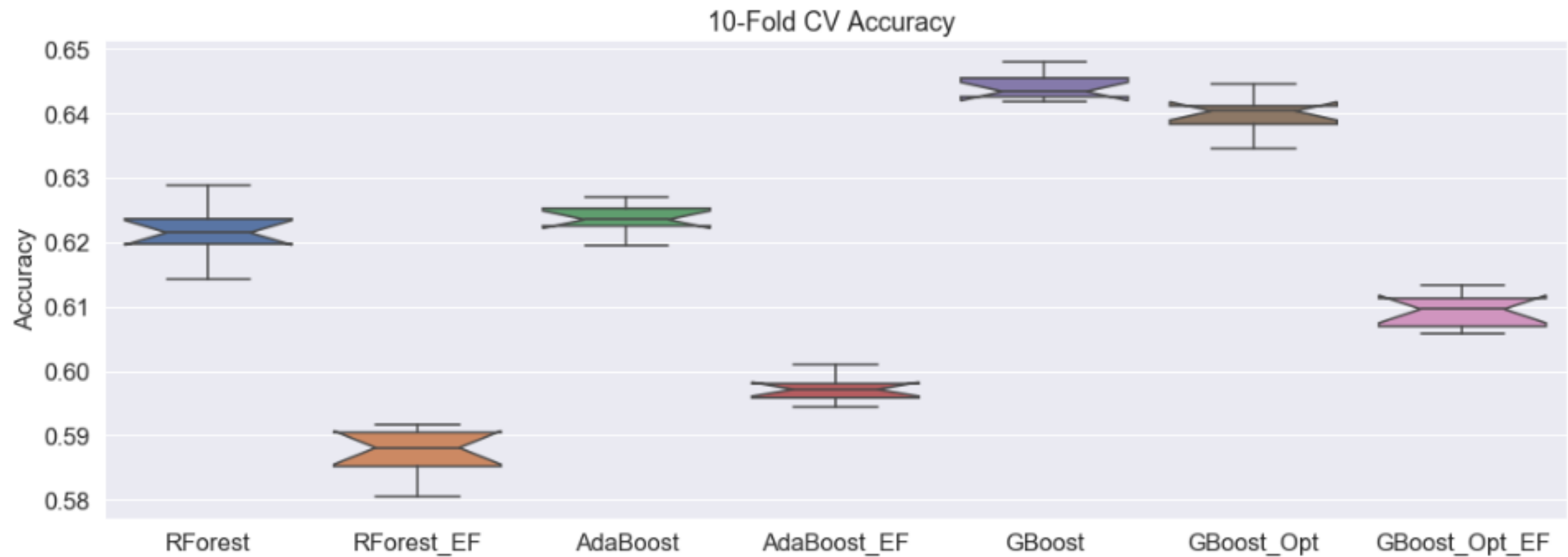
```
conf_matrix(y_test, ab_pred, cmap="Purples")
```



Most Important Features AdaBoost Model



10-Fold Cross Validated Accuracy All Models



CONCLUSIONS AND FUTURE DIRECTIONS



CONCLUSIONS ON SHOT
SELECTION



DATA TO IMPROVE GAME
WON CLASSIFICATION



WHAT IS OUR BEST MODEL

thank
you