



# NBA Draft Prediction

Leveraging college basketball statistics to predict the NBA draft pick

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## Introduction

### Problem to Address

How to predict NBA draft selections using college basketball player statistics

### Importance

Teams can develop more comprehensive strategies to acquire the best talent

### Background

**What:** Selection of players to join the NBA  
**When:** Annually every summer (June)  
**Who:** Individuals 19 or older  
**How:** Teams with worse records likely select first  
**Where:** Changes year to year

## Methods

### Exploratory Analysis

To Understand the Landscape

### Classification

To Predict the Lottery Selection

### Regression

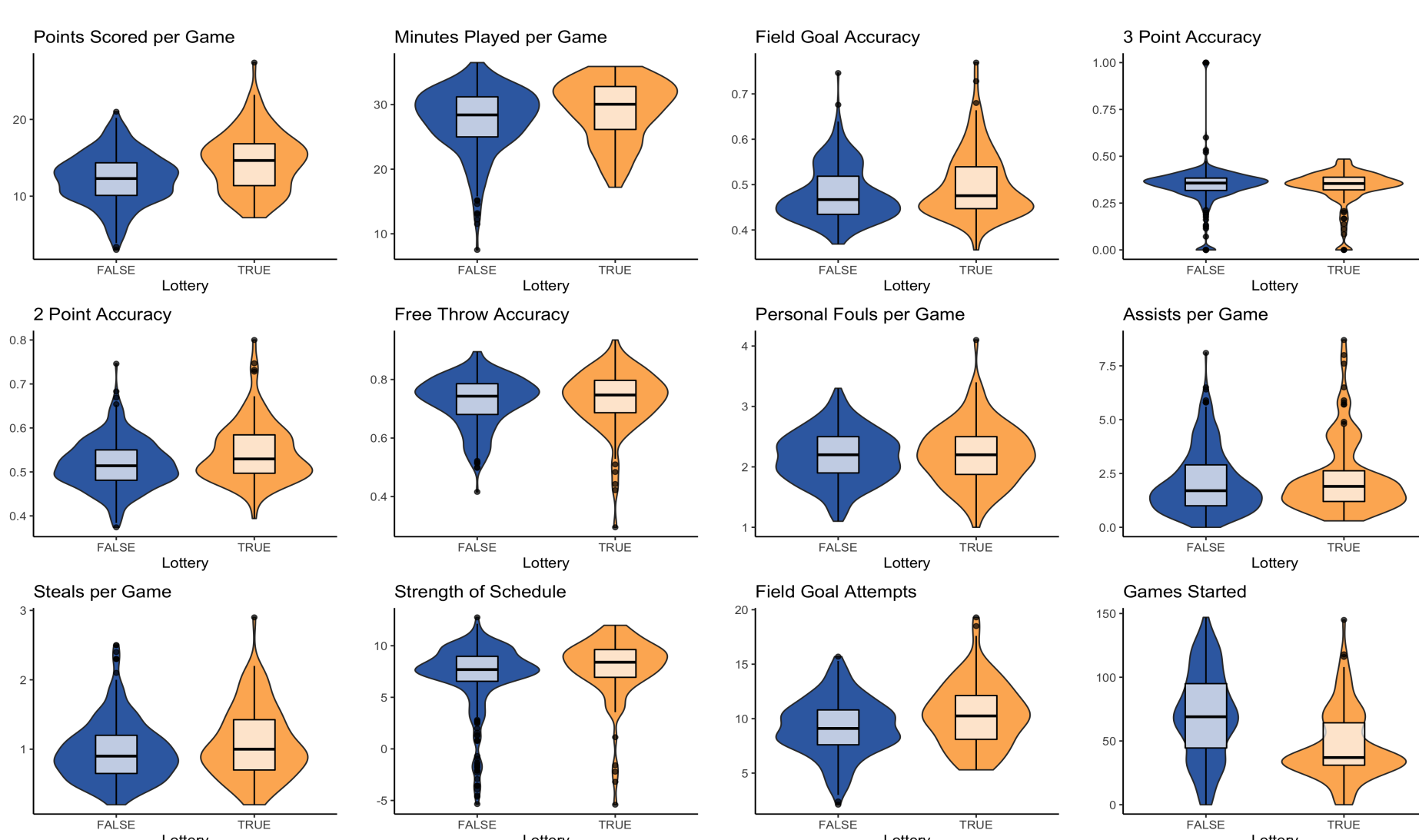
To Predict the Draft Pick Order

- Top Schoools
- Draft pick correlation with key statistics
- Key statistic distributions by lottery type

- LDA
- QDA
- Logistic
- Random Forest
- Adaboost
- Bagging
- Gradient Boost

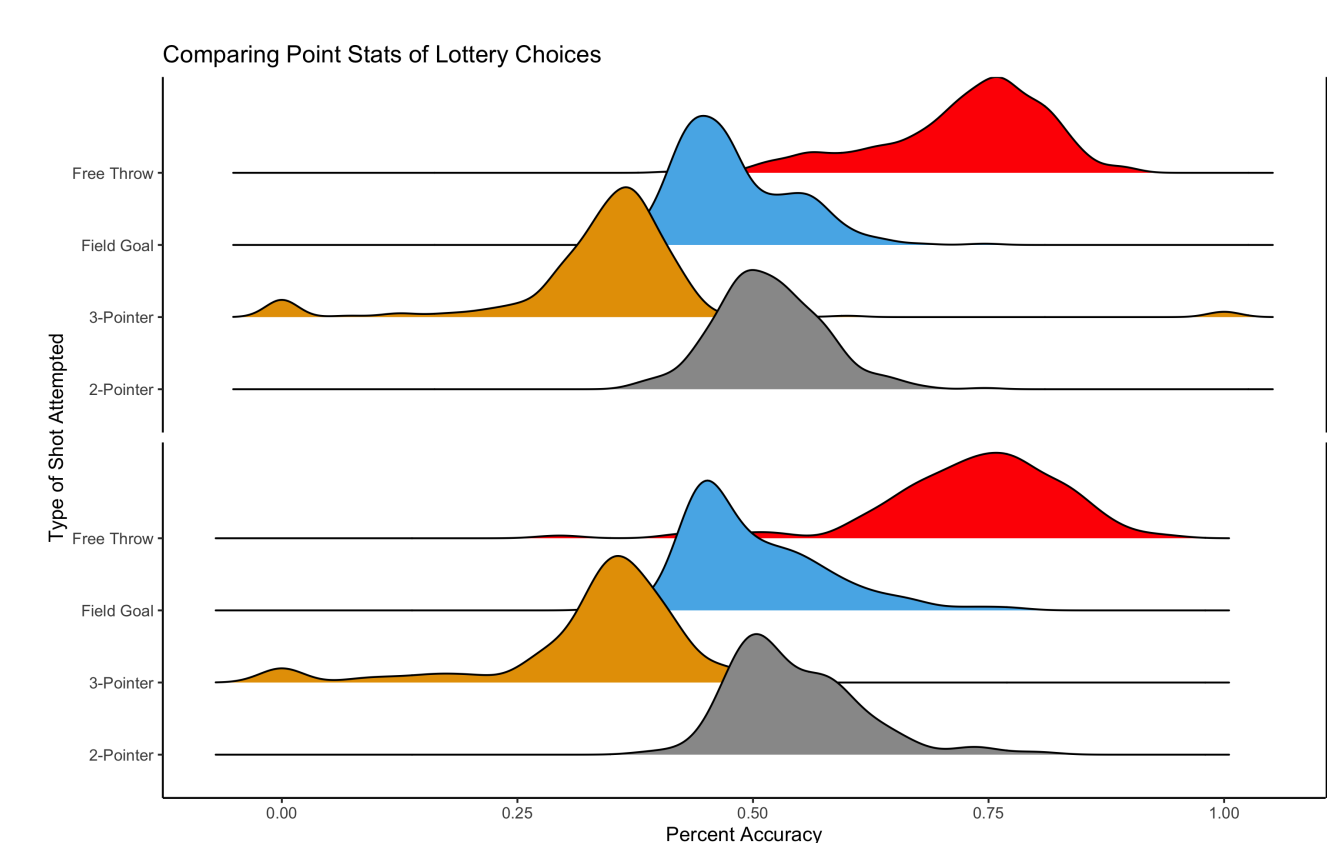
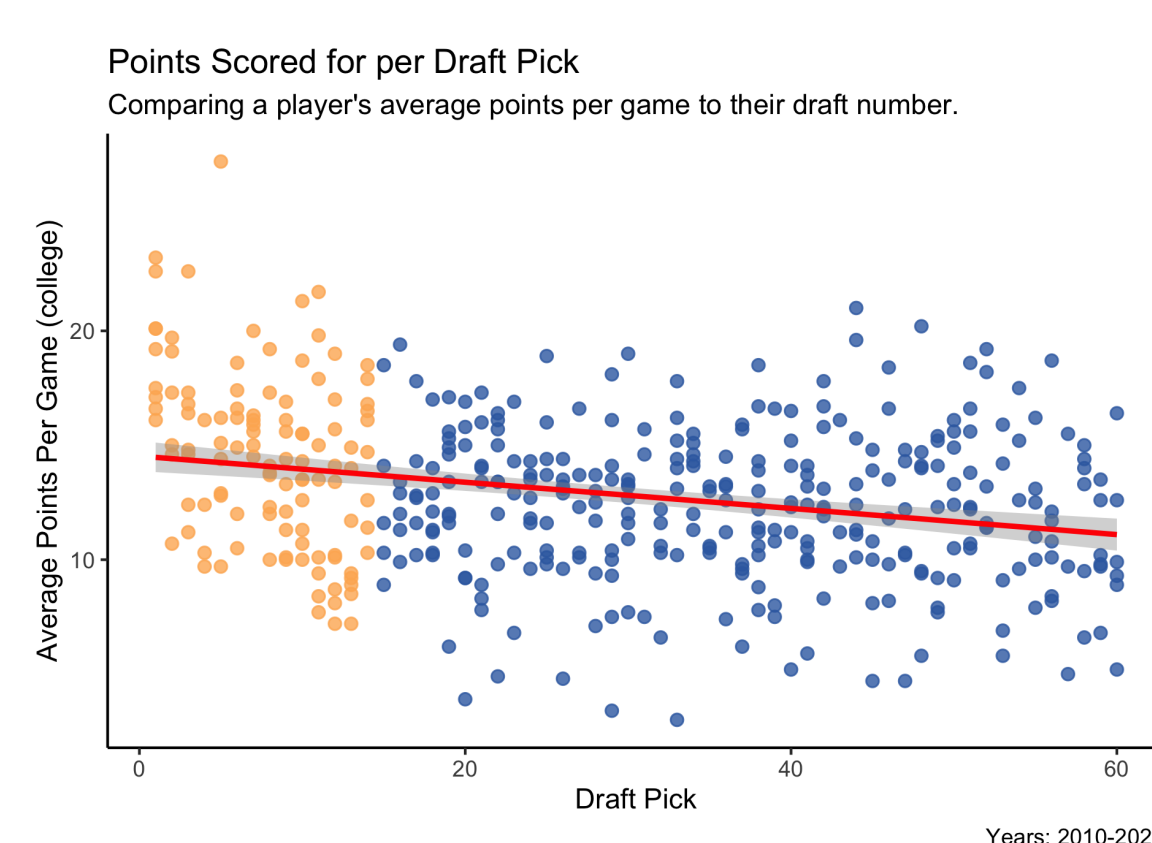
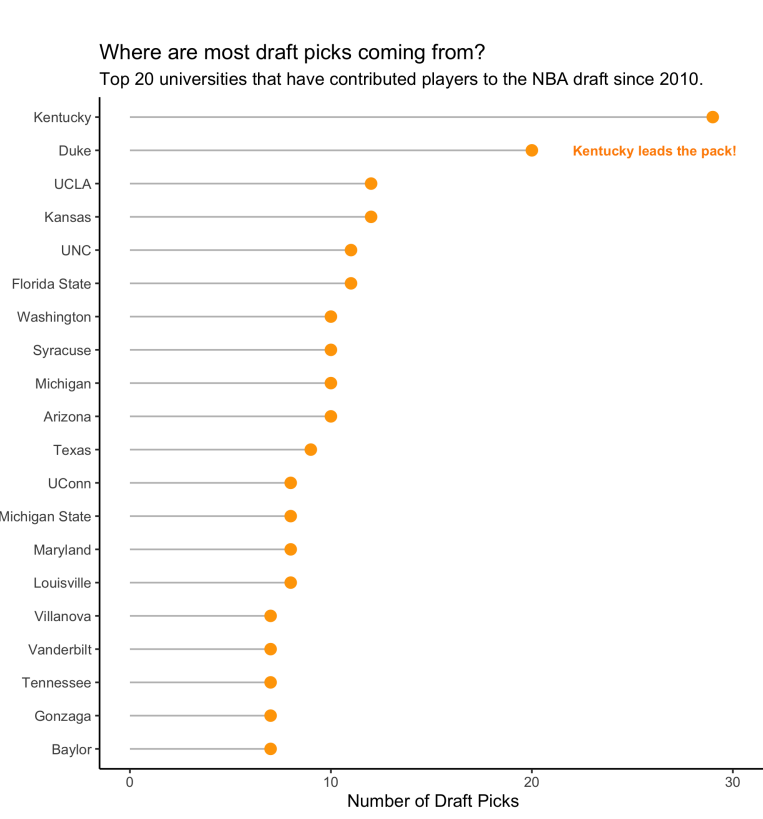
- Linear
- Polynomial
- Spline
- Random Forest
- Lasso
- Ridge I

## Dataset



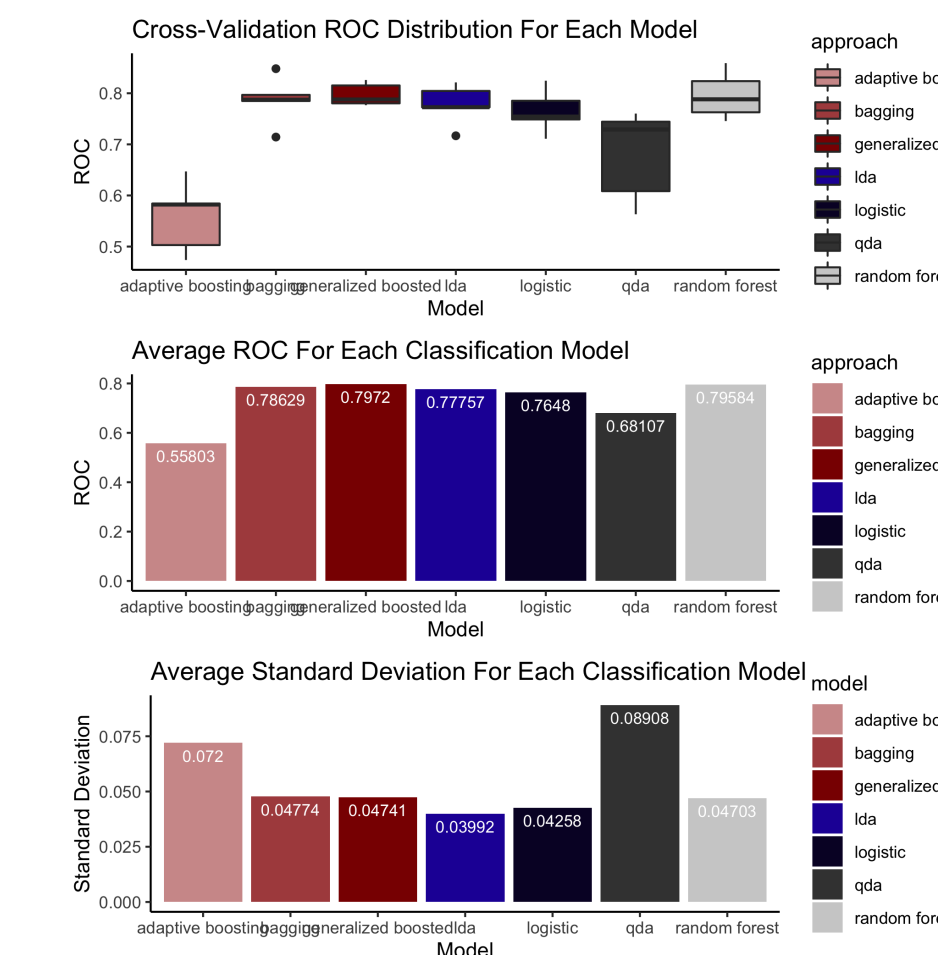
- College basketball statistics scraped from Basketball Reference
- Years: 2000-2014
- Dimensions: XX Rows, XX Columns

- Games played
- Minutes played
- Field goals
- Field goal attempts
- Free throws
- Free throw attempts
- Offensive rebounds
- Total rebounds
- Assists
- Steals
- Blocks
- Turnovers
- Personal fouls
- Points shooting
- Field goal percentage
- 3-Point accuracy
- Free throw accuracy
- Avg points scored
- Rebounds
- Assists per game
- Lottery

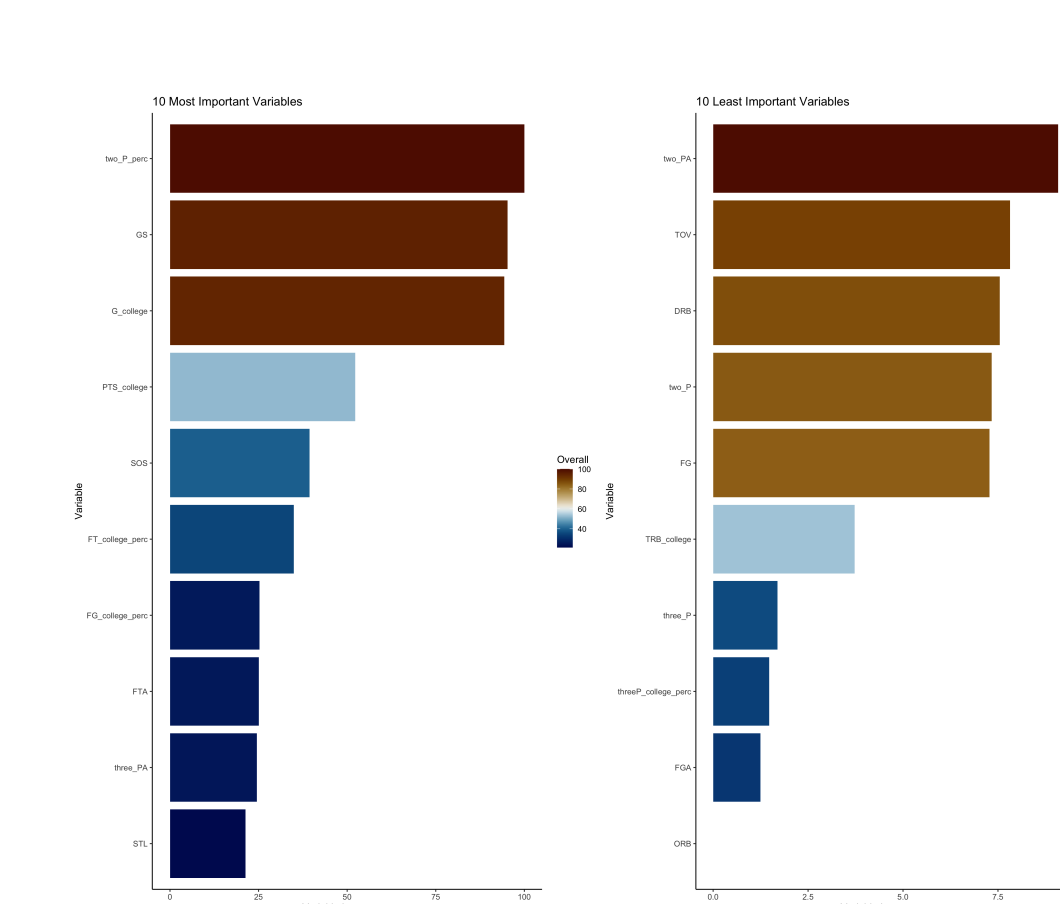


## Results

### Classification Model Comparison:



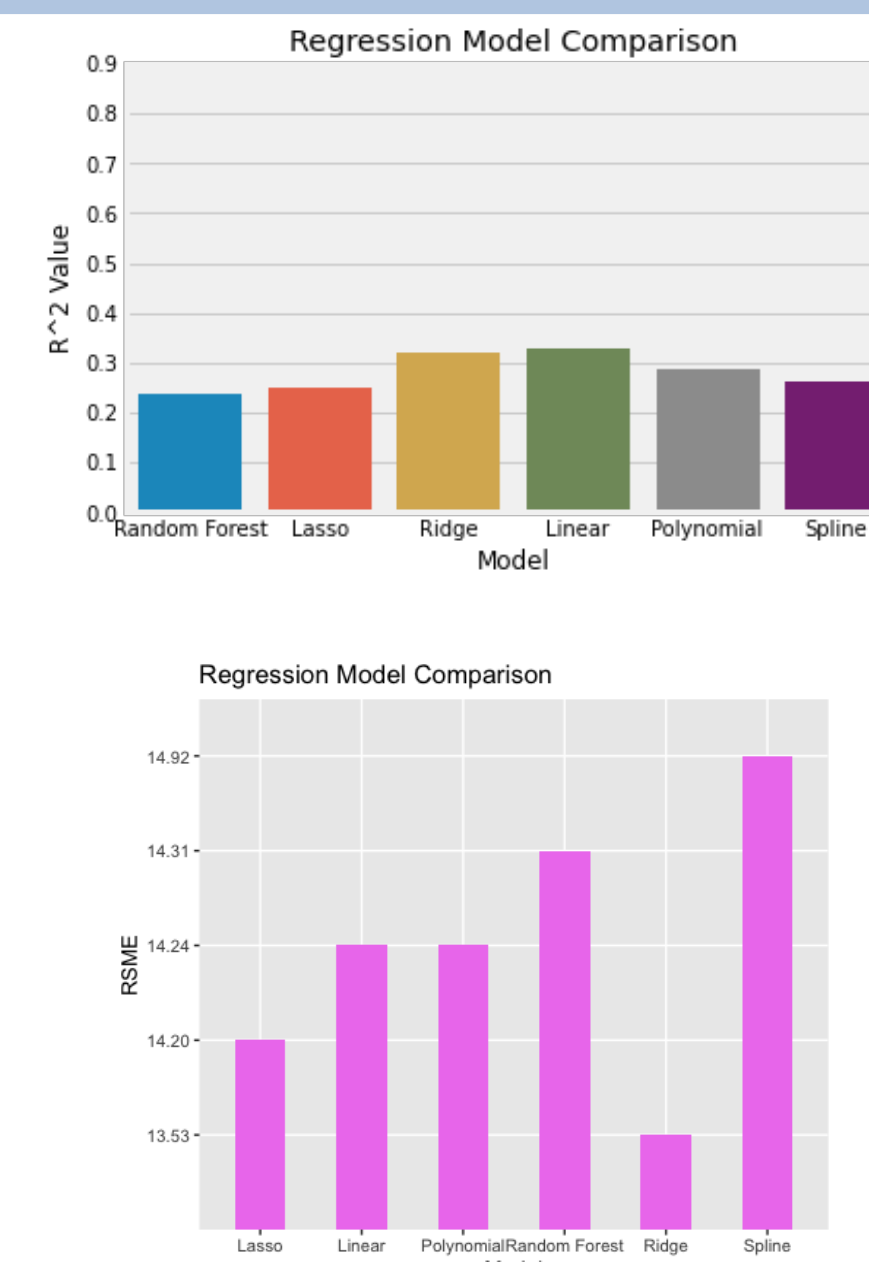
### Classification Interpretation:



### Extrapolation:

	Prospect	Lottery_Probability
54	keon-ellis	0.915393
0	chet-holmgren	0.863053
37	bryce-mcgowens	0.862580
10	nolan-hickman	0.852826
20	keegan-murray	0.837418
6	jaden-ivey	0.785196
40	kofi-cockburn	0.705536
2	jalen-duren	0.675730
70	jeremy-sochan	0.650321
1	paolo-banchero	0.641342
73	jabari-smith	0.638466
34	malaki-branham	0.532393
4	aj-griffin	0.516619
9	kennedy-chandler	0.504911

### Regression Model Comparison:



### Statistical Analysis Summary:

#### Regression

#### Classification

## Conclusions

1. Basketball statistics can accurately predict whether a player will be in the lottery
2. Games started, two point percentage, number of games are most important in lottery prediction
3. Basketball statistics cannot accurately predict draft pick order

## Future Considerations

1. Assess NBA performance post-draft
2. Collect additional demographic information
3. Evaluate prospect predictions to actuals
4. Segment analysis by position

## Literature Cited

Wikimedia Foundation. (2022, April 1). NBA draft. Wikipedia. Retrieved April 24, 2022, from [https://en.wikipedia.org/wiki/NBA\\_draft#:~:text=The%20NBA%20draft%20is%20an,also%20eligible%20to%20be%20drafted.](https://en.wikipedia.org/wiki/NBA_draft#:~:text=The%20NBA%20draft%20is%20an,also%20eligible%20to%20be%20drafted.)

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