Career Longevity for NBA Rookies

By Isaac, Seraj, and Chris

The Team

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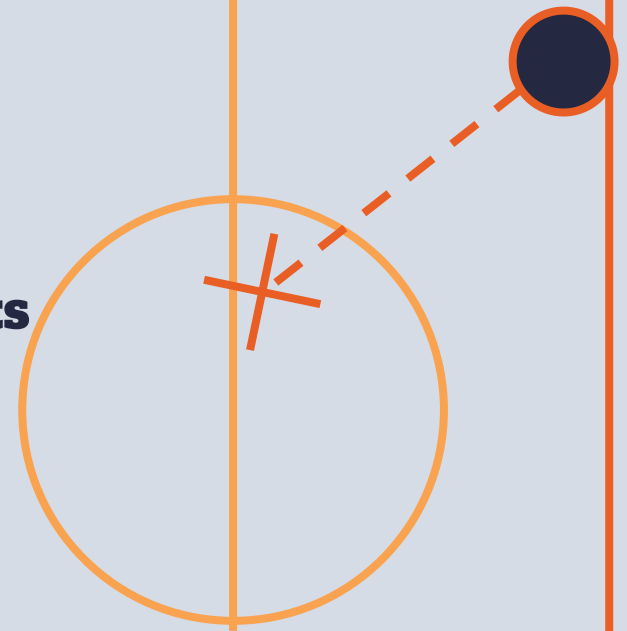
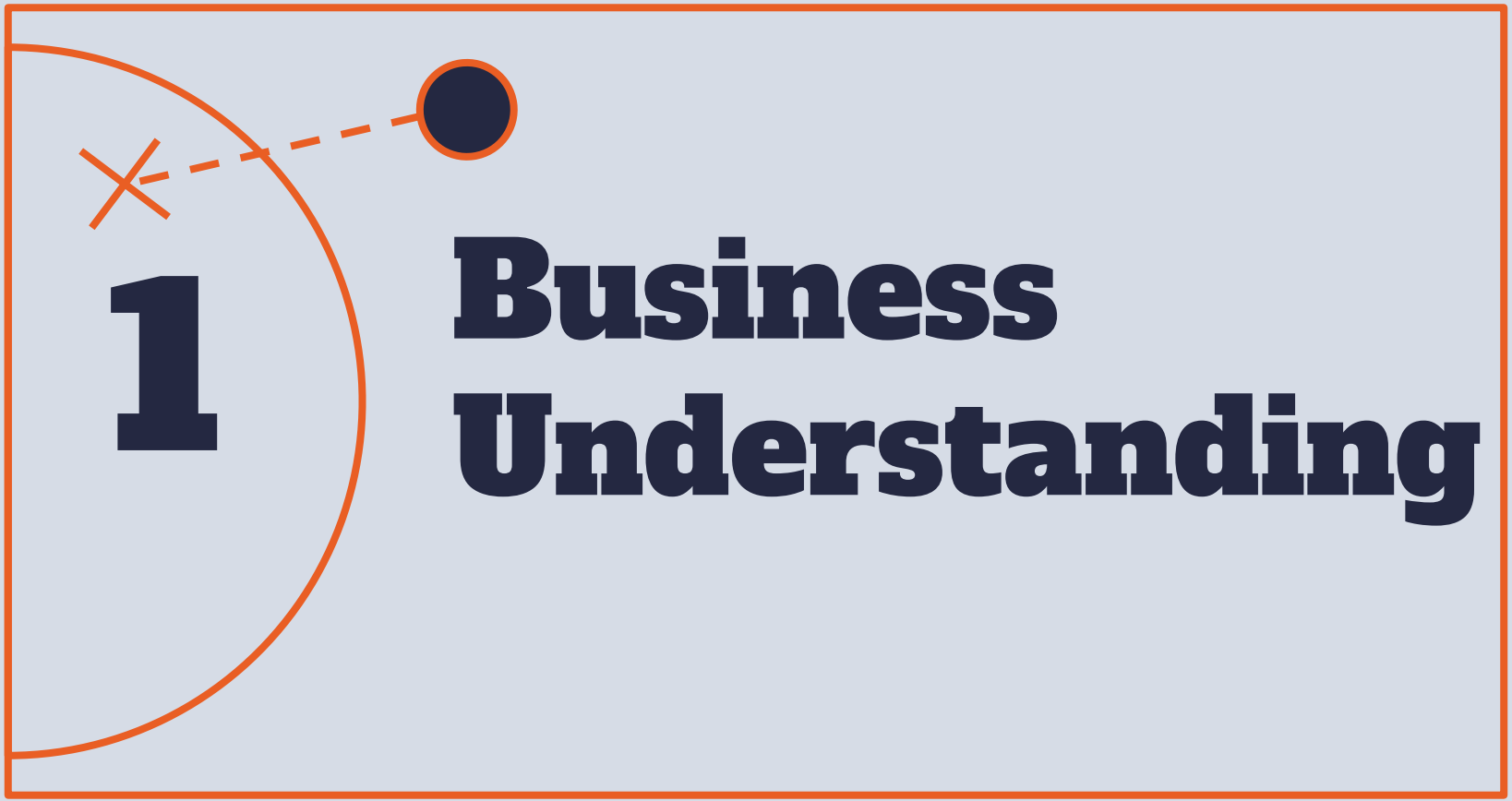
Agenda

1. Business Understanding
2. Data
3. Methods
4. Findings
5. Recommendations
6. Future Research

Predicting +5 Years with Player Stats

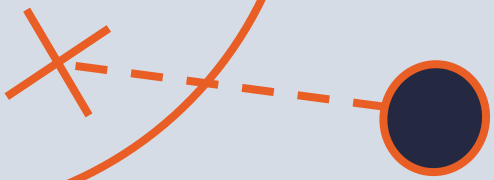
+70% Accuracy




1
Business
Understanding

The Problem	The Goal
• Foresee rookies long term success	• Identify key features that lead to a longer career

2 Data



NBA Rookie Stats 1st Season 1980 - 2012

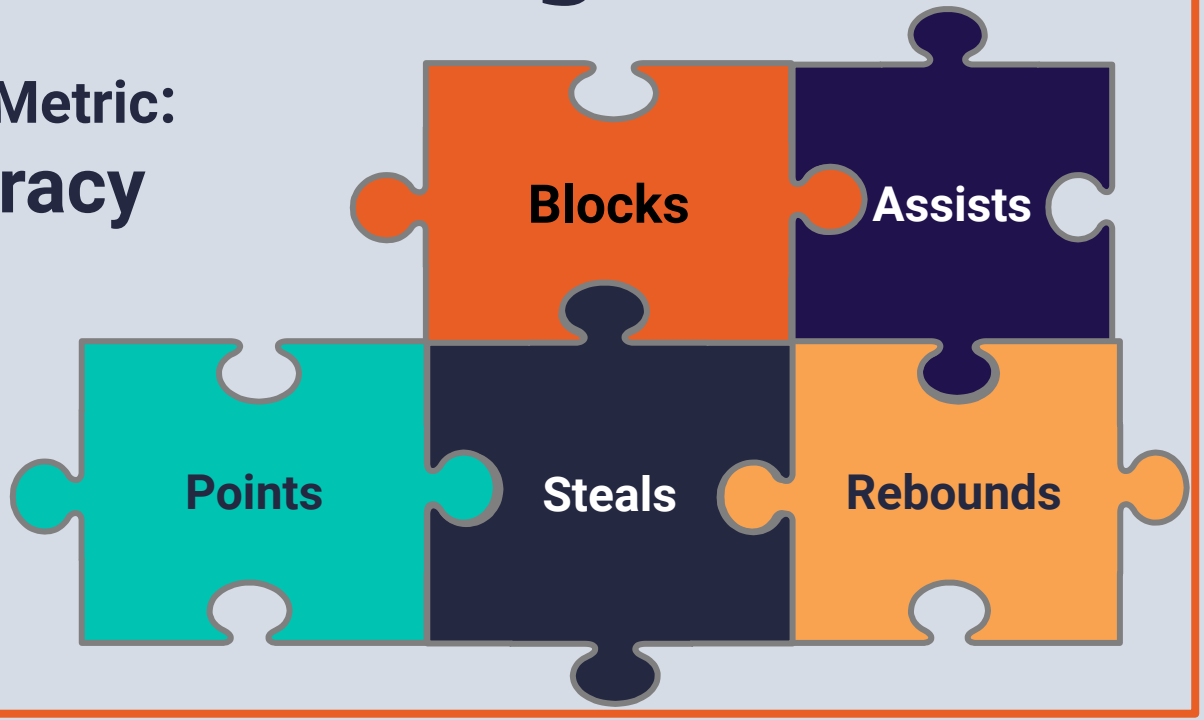
- Blocks Per Game
- Steals Per Game
- Rebounds Per Game
- Assist Per Game
- Points Per Game

3
Methods

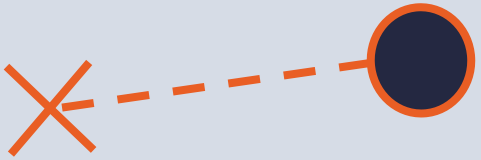
Machine Learning

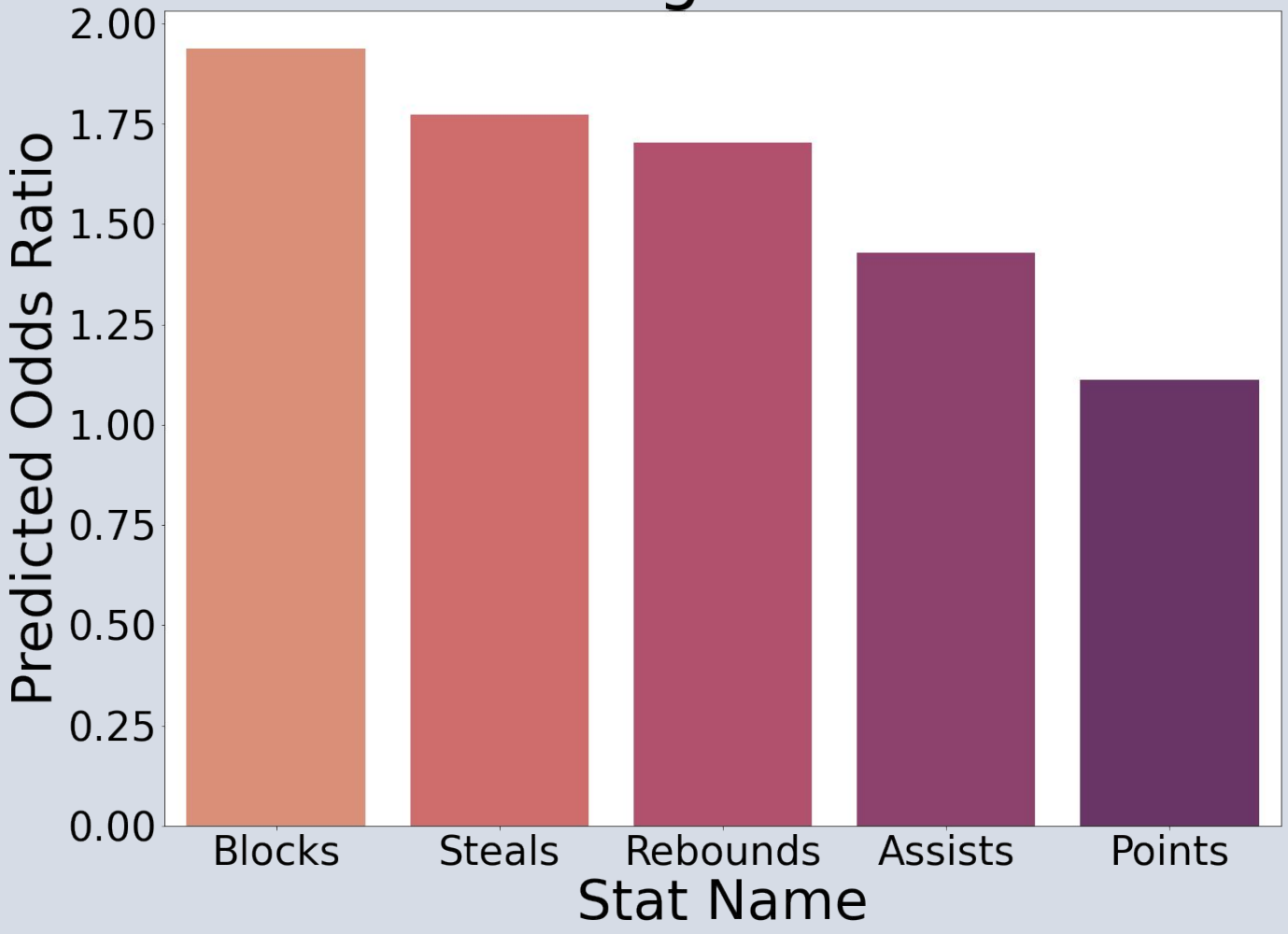
Chosen Metric:

Accuracy



4 Findings

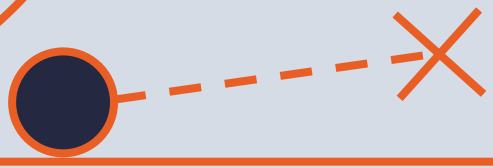



Stat Significance
Predicted Odds Ratio
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
Blocks
Steals
Rebounds
Assists
Points
Stat Name

Final Model

74% Accuracy

5 Recommendations



Recommendations

- Key attributes (per game)
  - Blocks
  - Steals
  - Rebounds
  - Assists
  - Points
- Focus on defense

6 Future Research

Possible research in the future

- Draft pick
- Financial impact
- Injuries
- Evolution of the game

Thank You!

Questions?

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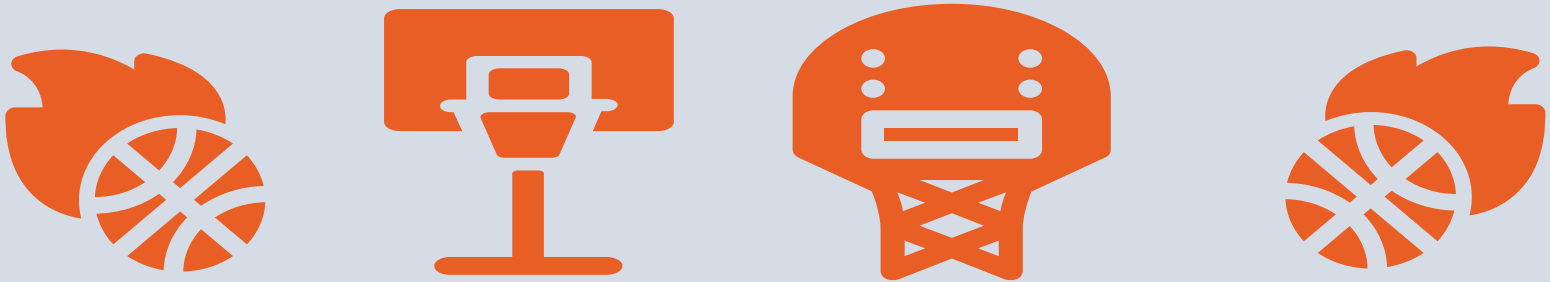

Appendix

Sources

Datasets:

- Nba-players.csv
  - https://www.kaggle.com/sveneschlbeck/nba-players-career-duration
- NBA Rookies by Year.xlsx
  - https://data.world/gmoney/nba-rookies-by-min-1980-2016

Original Source

- Web-Scraped from https://www.nba.com/stats/

Accuracy Equation

$$Accuracy = \frac{CorrectPrediction}{CorrectPrediction + IncorrectPrediction}$$

Accuracy Formula

$$Accuracy = \frac{TruePositive + TrueNegative}{TruePositive + FalsePositive + TrueNegative + FalseNegative}$$

Field Goal Equation

$$\text{FG\%} = \frac{Baskets Made}{Baskets Attempted}$$

Feature Importance

$$\hat{I}_j^2(T) = \sum_{t=1}^{J-1} \hat{i}_t^2 1(v_t = j)$$

Odds

$$\text{ODDS} = \frac{\text{Probability of winning}}{\text{Probability of losing}} = \frac{p}{1-p}$$

Where p = probability of winning (event occurring)