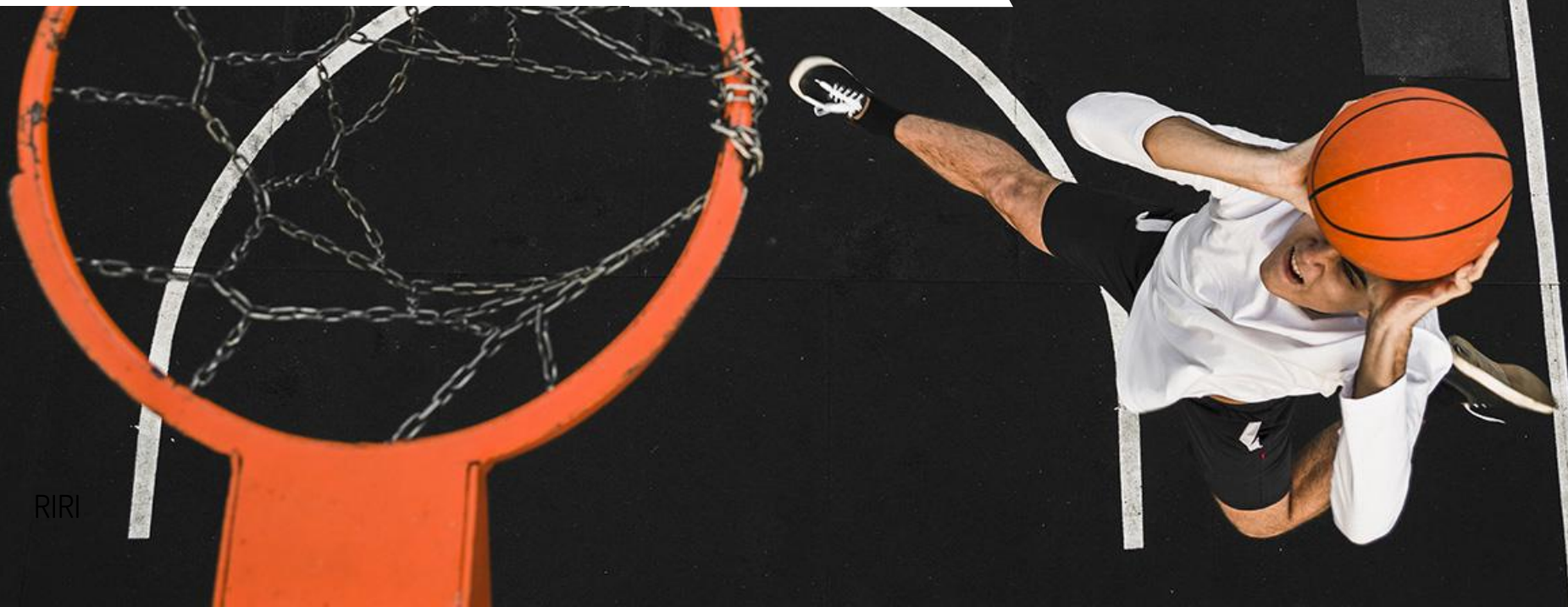


SCOUTING THE SUMMER LEAGUE



RIRI

Executive Summary

01

PURPOSE

Looking to help NBA managers decide how to allocate payroll

02

METHODS

Collected data from NBA summer league and NBA regular season

03

RESULTS

Ran Multivariable Logistic Regression and Created Decision tree

04

INSIGHTS

Found Key Metrics for NBA personnel to use and applied them to 2022 drafted/undrafted rookies



01

Purpose

Can we predict NBA busts and stars based on their performance in the summer league?

After players are drafted



NBA teams can extend their rookie players and pay a premium



Can release, trade, or decline a contract extension



Management decides how to allocate funds based on these decisions



Business Problem

NBA managers would be interested in knowing if their rookie talents are **worth the initial investment**, or if they should allocate their roster and funds elsewhere to **avoid exceeding financial restrictions**

What is the Summer League



Brief Showcase

Each NBA team plays 5-8 games with modified rosters



Rookies

First chance for recently drafted NBA players to face real NBA talent



Undrafted/Unsigned

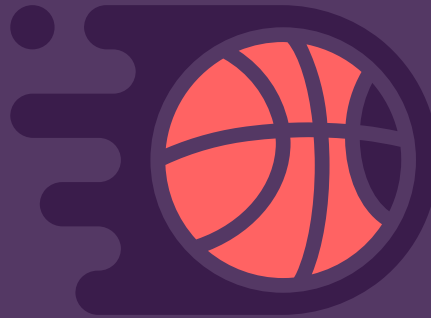
Chance for many Free Agents to impress scouts and make a roster

UNDERSTANDING RELATIONSHIP

Logistic Regression of
Summer League Stats on
NBA League Success



Which Stats should
Scouts/Coaches/Management
Focus on when deciding to keep
or drop rookies ?



PREDICTING FUTURE STARS (AND BUSTS)

Classification Tree
Applied to Rookies 2022
and beyond

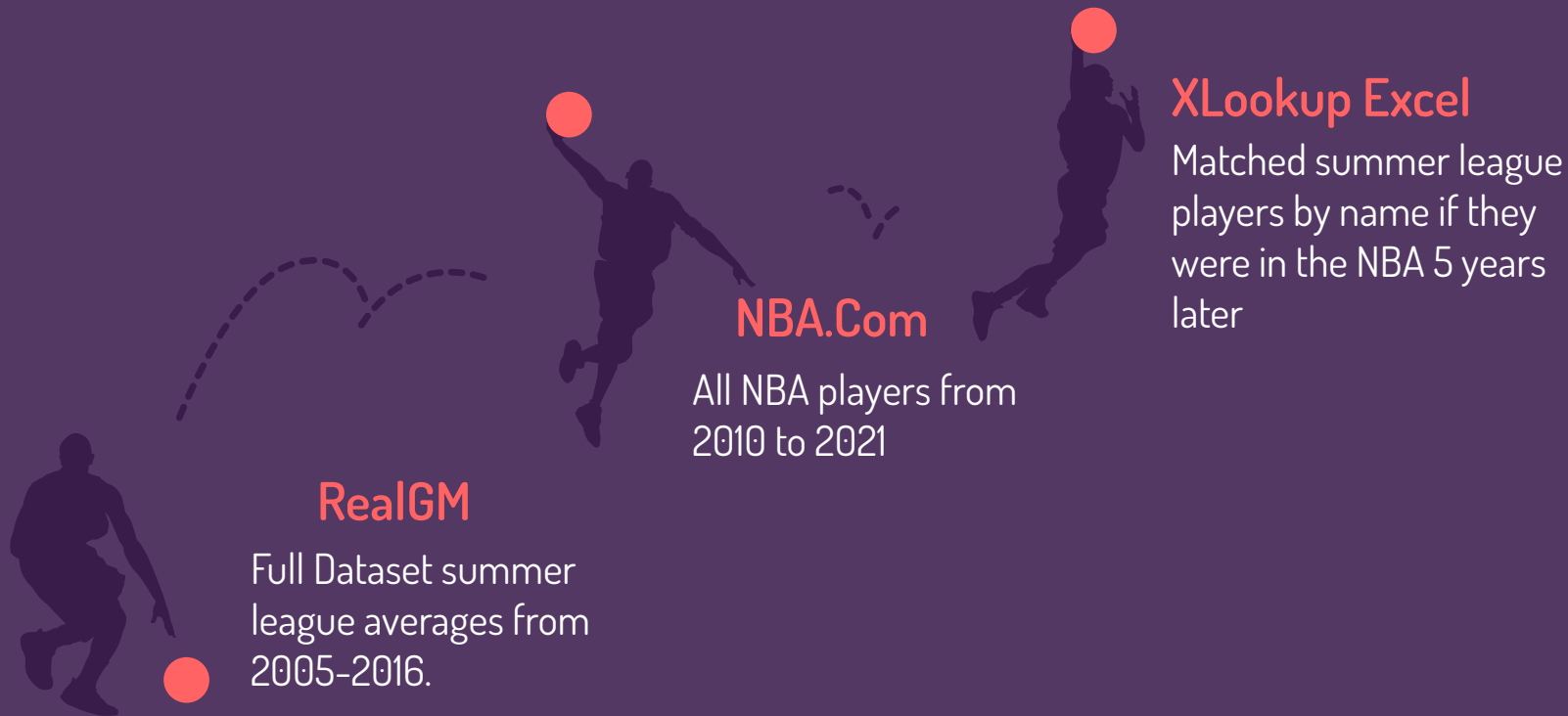


Which Rookies are Worth Holding Onto for
the next five years? Which Rookies are
worth Trading For

02

Methods

How did we assemble the data set

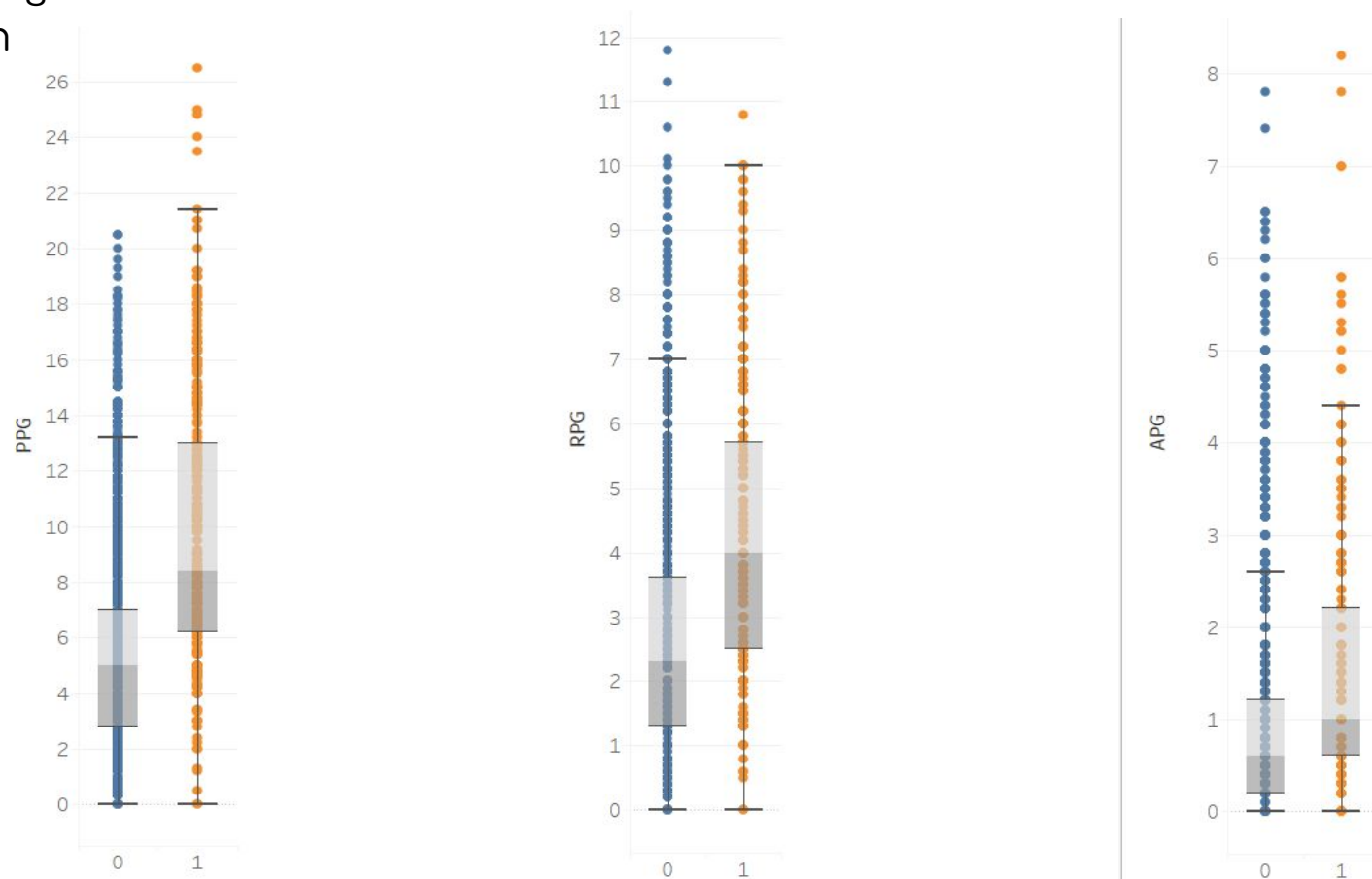


Data Set

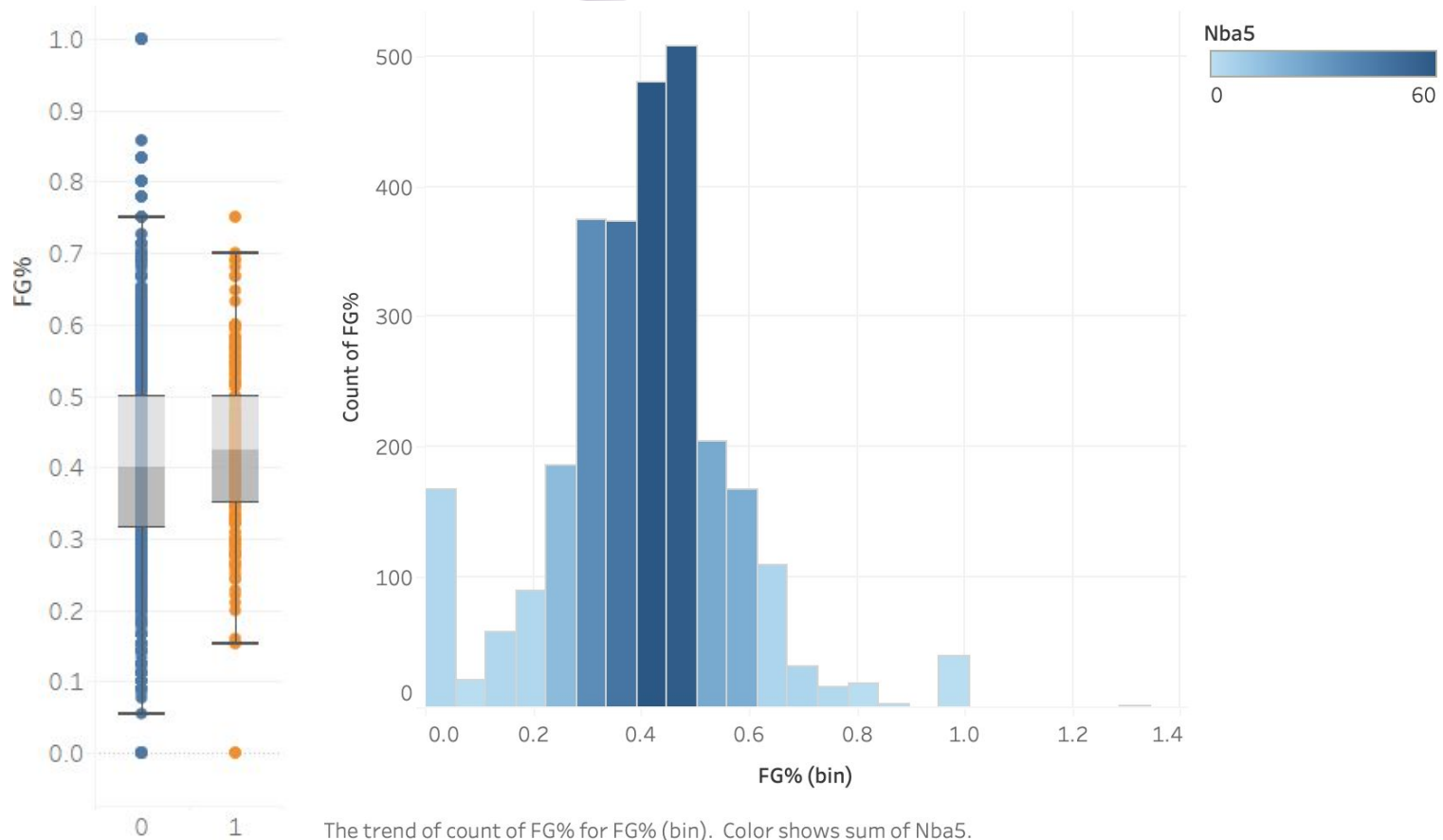
There are 2848 observations of 24 variables.

	PPG SL	RPG SL	FG% SL	In NBA 5 Years Later
Damian Lillard	24	06	18	YES/1
Josh Akognon	09	21	98	NO/0

Summer League Performance Comparison



1: Players who were still in league after 5 years



Players who lasted in the NBA scored higher in these categories in the summer league

02

Regression Model

Dependent Variable: Is the player still in the league after 5 years?

Coefficients:

	Estimate	Std. Error	z value	Pr(> z)	
(Intercept)	-4.67726	0.19166	-24.404	< 2e-16	***
PPG	0.18917	0.02262	8.362	< 2e-16	***
RPG	0.11853	0.04214	2.812	0.00492	**
APG	0.06629	0.06620	1.001	0.31669	
SPG	0.37713	0.13160	2.866	0.00416	**
TOV	0.18305	0.08698	2.104	0.03534	*
BPG	0.26745	0.13502	1.981	0.04760	*
TPM	-0.13158	0.13365	-0.985	0.32487	

Final Model

Coefficients:

	Estimate	Std. Error	z value	Pr(> z)
(Intercept)	-4.69384	0.18892	-24.846	< 2e-16 ***
PPG	0.17896	0.01870	9.568	< 2e-16 ***
RPG	0.12469	0.03958	3.150	0.001631 **
SPG	0.41275	0.12464	3.312	0.000928 ***
TOV	0.22696	0.07838	2.896	0.003785 **
BPG	0.25893	0.13220	1.959	0.050161 .

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

PER GAME

51%

Increase in Odds for Each Additional **Steal**

20%

Increase in Odds for Each Additional **Point**

13%

Increase in Odds for Each Additional **Rebound**



For every additional steal a rookie records per game in the summer league, on average there is an estimated increase in the odds that they will remain in the NBA for at least 5 years by 51.1%

$$=e^{(0.41275)}$$

$$1.5109672369$$

For every additional point a rookie scores per game in the summer league, the odds that they will remain in the NBA for at least 5 years increases by an estimated 19.6%.

$$\text{A multiple of } e^{(0.17896)}$$

$$=e^{(0.17896)}$$

$$1.19597290429$$

For every additional rebound a rookie grabs per game in the summer league, on average there is an estimated increase in the odds that they will remain in the NBA for at least 5 years by an estimated 13.3%

$$= e^{(0.12469)}$$

$$1.13279723149$$

PER GAME

25%

Increase in Odds for Each Additional **Turnover**

30%

Increase in Odds for Each Additional **Block**



For every additional turnover a rookie records per game in the summer league, on average there is an estimated increase in the odds that they will remain in the NBA for at least 5 years by 25.5%

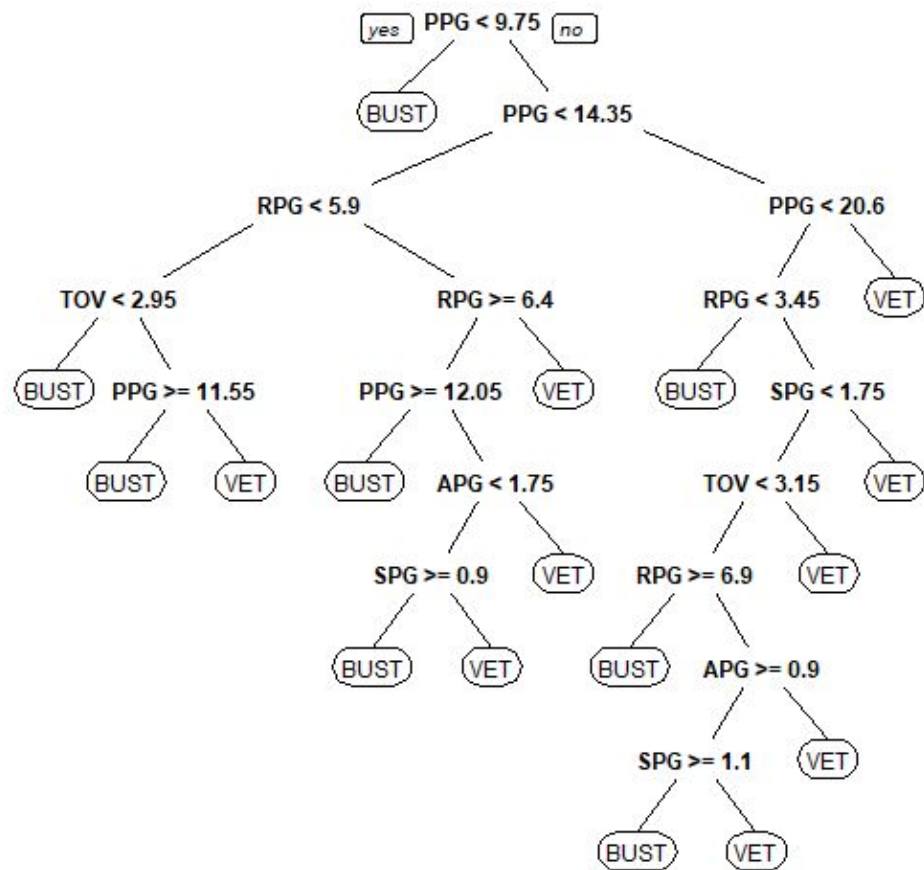
$$=e^{(0.22696)}$$
$$1.25477967575$$

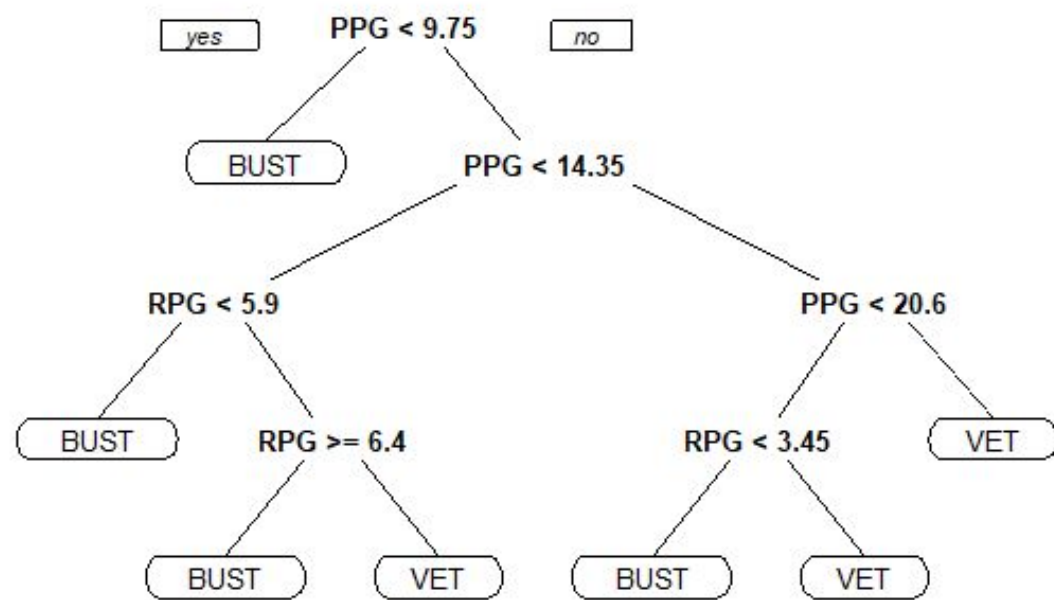
For every additional block a rookie records per game in the summer league, on average there is an estimated increase in the odds that they will remain in the NBA for at least 5 years by 29.6%

$$=e^{(0.25893)}$$
$$1.29554311364$$

02

Classification Tree





```
> NBASL.prune$variable.importance
```

PPG

RPG

SPG

TOV

69.64

5.70

0.81

3.49

APG

BPG

1.32

2.09

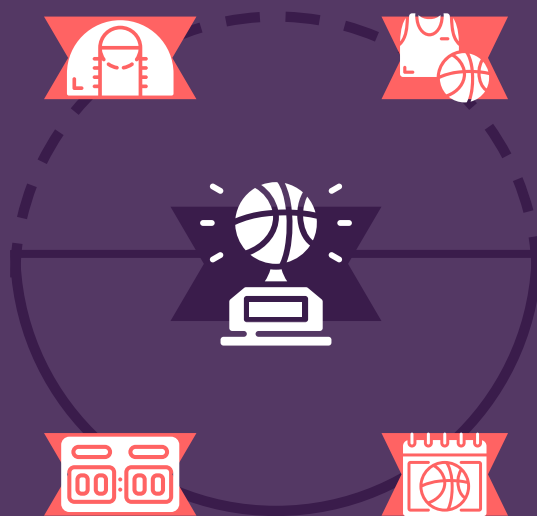
INSIGHTS FOR BUSINESS ENTITIES

GENERAL MANAGERS

Can allocate more funds to players who match specific cutoffs

COMPETING SCOUTS

Can find players to make offers during free agency/trade targets



AGENTS

Can generate a higher markup or more hype for hidden gems in the Summer League

PLAYERS

Can focus on rebounding and stealing to boost their chance of getting picked up by a roster



Keegan Murray

GP:4

MPG:31.9

PPG:23.3

RPG:7.0

APG:2.0

SPG:1.3

BPG:0.3

FG: .500

TOV:2.5

STAR



Jabari Smith Jr.

GP: 5

MPG: 29.7

PPG: 14.4

RPG: 9.4

APG: 1.8

SPG: 1.6

BPG: 1.4

FG: .377

TOV: 2.2

STAR



Jabari Walker

GP: 5

MPG: 22.0

PPG: 12.4

RPG: 9.0

APG: 1.4

SPG: 1.0

BPG: 1.0

FG: .629

TOV: 0.8

STAR



Kevon Harris

GP: 5

MPG: 27.1

PPG: 15.8

RPG: 2.8

APG: 2.0

SPG: 1.0

BPG: 0.4

FG: .577

TOV: 2.6

BUST



Max Christie

GP: 5

MPG: 24.4

PPG: 8.2

RPG: 4.4

APG: 1.2

SPG: 0.8

BPG: 0.0

FG: .286

TOV: 1.0

BUST



MarJon Beauchamp

GP: 5

MPG: 26.5

PPG: 12.8

RPG: 3.2

APG: 1.6

SPG: 0.8

BPG: 1.0

FG: .426

TOV: 2.0

BUST

References

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- <https://www.nba.com/stats/players/traditional?PerMode=PerGame&sort=PTS&dir=-1&Season=2021-22>
- https://www.researchgate.net/publication/334206944_Is_the_NBA_Summer_League_predictive_of_performance_for_NBA_rookies
- <https://bleacherreport.com/articles/424615-is-the-nba-summer-league-a-good-indicator-the-answer-may-surprise>
- <https://www.celticsblog.com/2022/7/11/23198343/summer-league-success-translate-nba-analysis-boston-celtics-basketball>