

Flip00 Mid-term Test Presentation

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Outline

Introduction

Data Description

Data Visualization

Conclusion

Introduction

Data Description

Data Visualization

Conclusion



Introduction

Introduction

Data Description

Data Visualization

Conclusion

Introduction



Introduction

Introduction
Introduction
Data Description
Data Visualization
Conclusion

Information about the data *This data contains the location and circumstances of every field goal attempted by Kobe Bryant took during his 20 years career.*

- There are 30697 lines of data in the training set.
- There are 24 attributes.

Attribute	Note
action_type	Jumpshot,Layup,Dunk,Tipshot,Hookshot,Bankshot
loc_x ,loc_y	shots point
shot_made_flag	1=Yes,0=No
shot_type	2PT Field Goal,2PT Field Goal
shot_zone_area	shots area by area
shot_zone_basic	shots area by NBA rules
shot_zone_range	shots area by radius

Table 1: Data Information



[Introduction](#)

[Data Description](#)

[Descriptive Statistics](#)

[Data Visualization](#)

[Conclusion](#)

Data Description



Descriptive Statistics

[Introduction](#)

[Data Description](#)

[Descriptive Statistics](#)

[Data Visualization](#)

[Conclusion](#)

Aim Use descriptive statistics to get an overview of the data

- Let's take a brief look at all *numerical* columns statistics:



Descriptive Statistics

[Introduction](#)

[Data Description](#)

[Descriptive Statistics](#)

[Data Visualization](#)

[Conclusion](#)

Aim Use descriptive statistics to get an overview of the data

- Let's take a brief look at all *numerical* columns statistics:

Figure 1: the part description of the data



Descriptive Statistics

Introduction

Data Description

Descriptive Statistics

Data Visualization

Conclusion

Aim Use descriptive statistics to get an overview of the data

- And for part of *categorical* columns:



Descriptive Statistics

- Introduction
- Data Description
- Descriptive Statistics
- Data Visualization
- Conclusion

Aim Use descriptive statistics to get an overview of the data

- And for part of *categorical* columns:

	action_type	combined_shot_type	game_event_id	game_id	period	playoffs	season	shot_made_flag	shot_type	shot_zone_area	shot_zone_basic
count	30697	30697	30697	30697	30697	30697	30697	25697.0	30697	30697	30697
unique	57	6	620	1559	7	2	20	2.0	2	6	7
top	Jump Shot	Jump Shot	2	21501228	3	0	2005-06	0.0	2PT Field Goal	Center(C)	Mid-Range
freq	18880	23485	132	50	8296	26198	2318	14232.0	24271	13455	12625

Figure 2: categorical columns statistcs



Introduction

Data Description

Data Visualization

slide 1

slide 2

slide 3

V
Visualization of shots position
according to the given rectangular
coordinates

A

V

V

V

v

V

V

A

Data Visualization

Conclusion

Data Visualization



slide 1

- Introduction
- Data Description
- Data Visualization
- slide 1**
- slide 2
- slide 3
- V
- Visualization of shots position according to the given rectangular coordinates
- A
- V
- V
- V
- v
- V
- V
- A
- Data Visualization
- Conclusion

To Count Kobe’s total shots

- The hit distribution histogram of Kobe’s shots

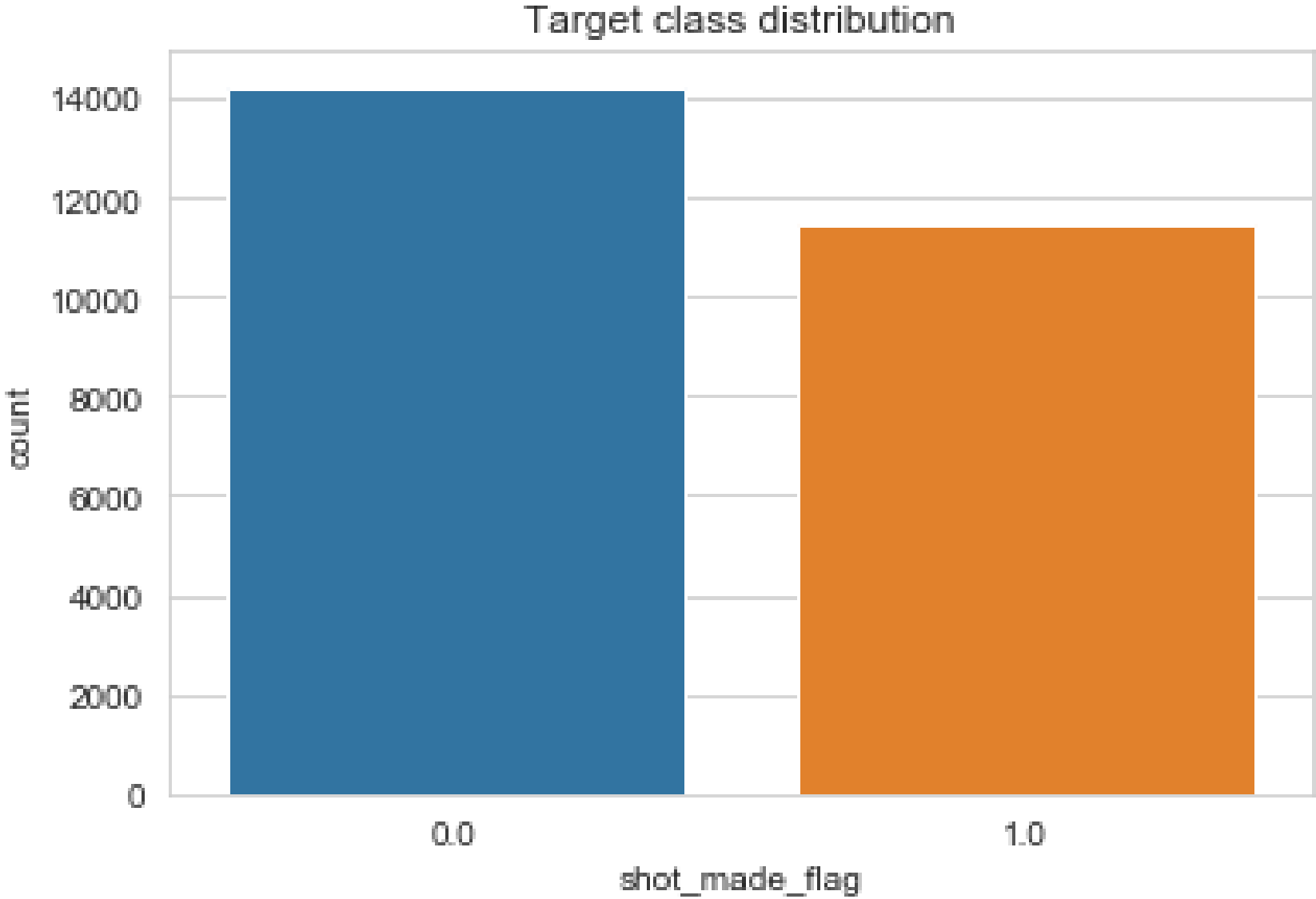


Figure 3: target class distribution



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Visualization of two kinds of shots (two-point shot and three-point shot)

- The hit distribution histogram of Kobe’s shots(two-point shot and three-point shot)

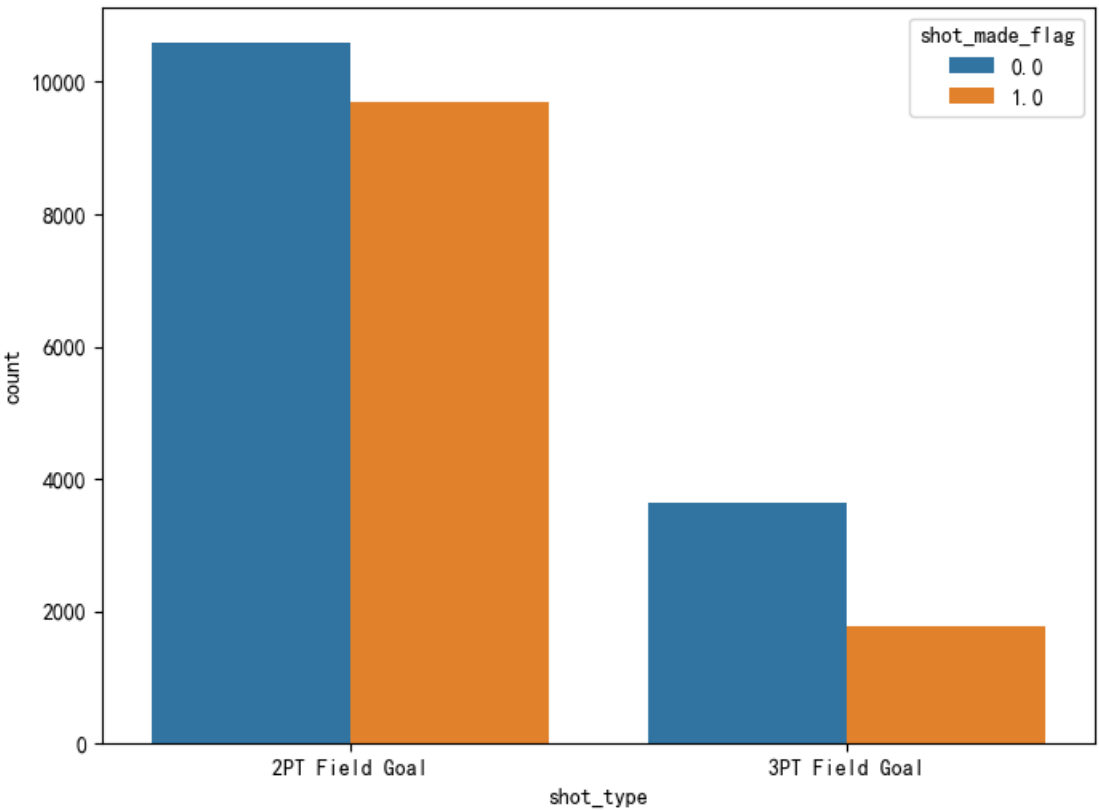


Figure 4: The hit distribution histogram of two shot types



slide 3

- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Visualizing the shot type and position of Kobe’s shots every time

- the shot type and position of Kobe’s shots

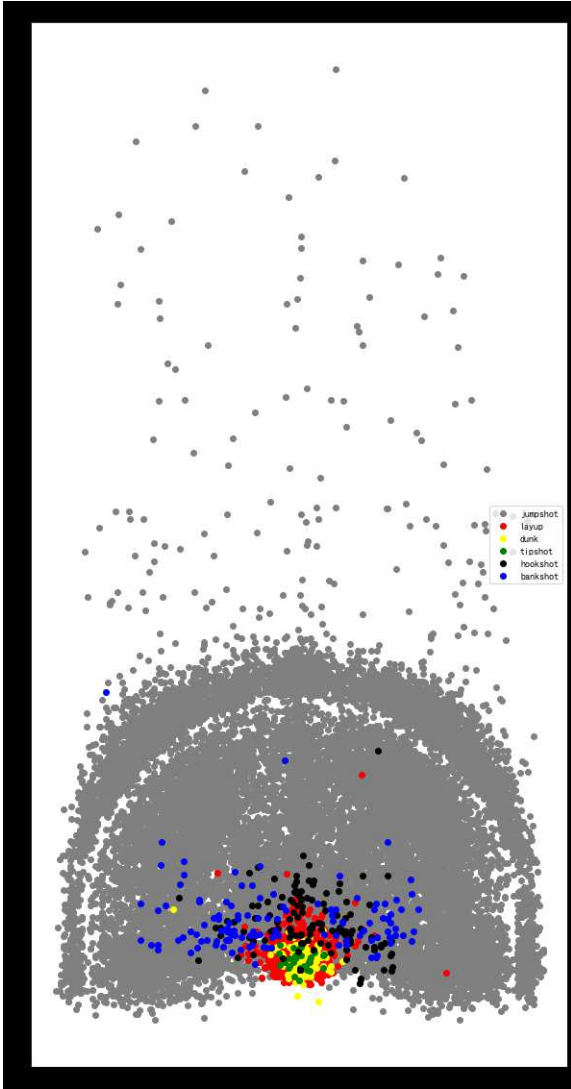


Figure 5: the shot type and position of Kobe’s shots



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V**
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Visualizing the shot accuracy of various action type

■ the shot accuracy of various action type

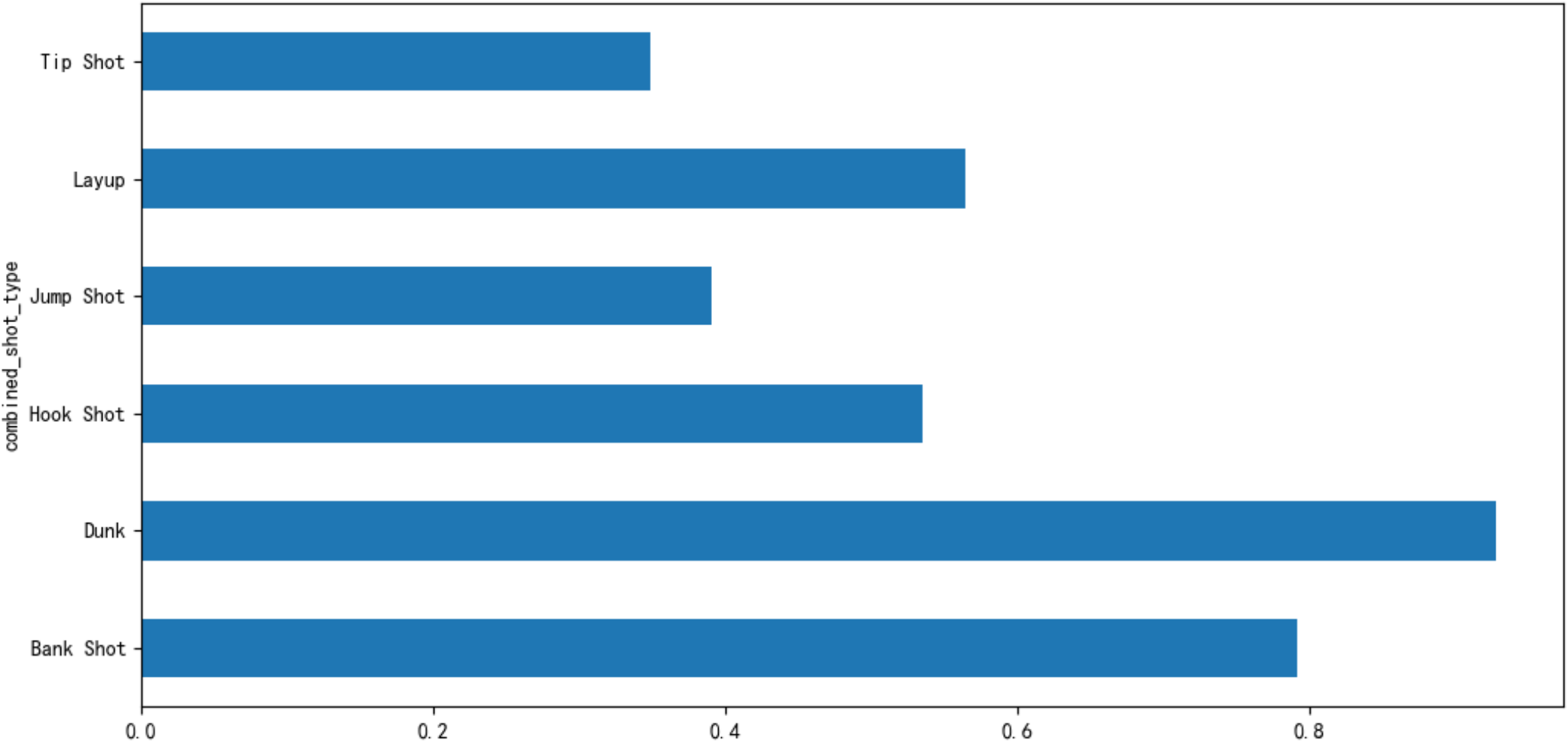


Figure 6: the shot accuracy of various action type

- Introduction
- Data Description
- Data Visualization
- slide 1
- slide 2
- slide 3
- V
- Visualization of shots position according to the given rectangular coordinates
- A
- V
- V
- V
- v
- V
- V
- A
- Data Visualization
- Conclusion

Visualization of shots position according to the given rectangular coordinates

- shots position in rectangular coordinate system

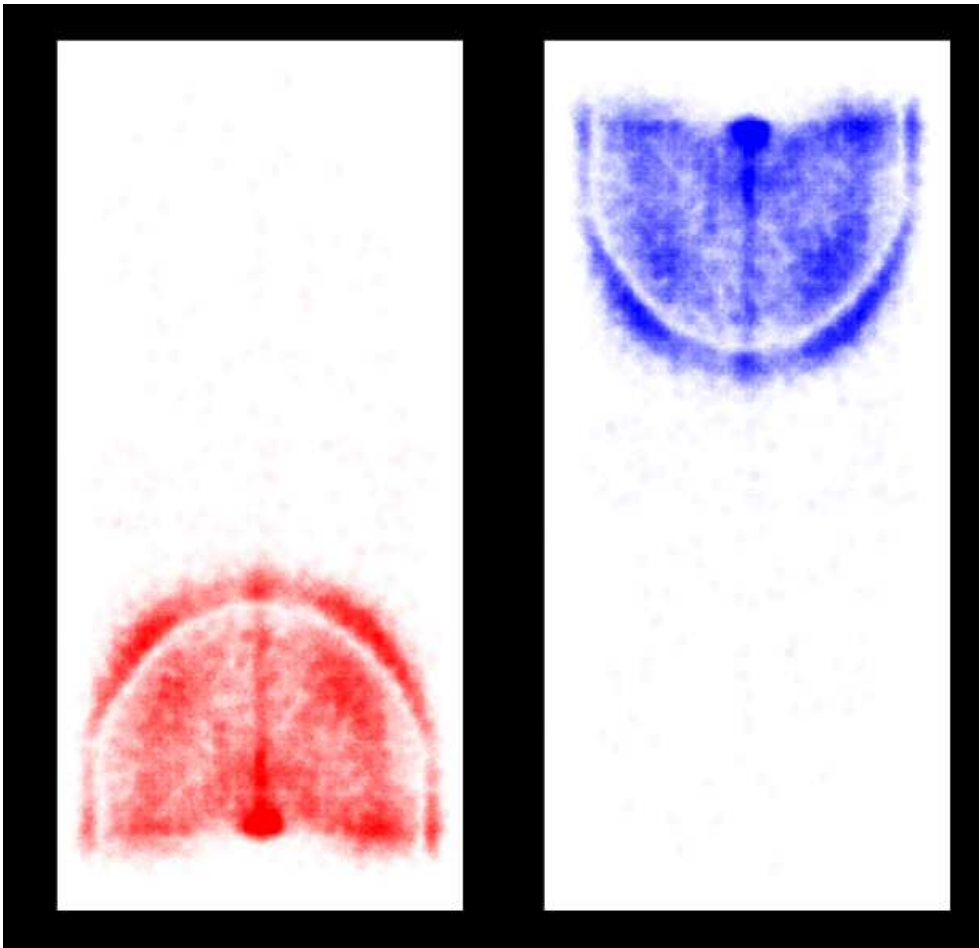


Figure 7: shots position in rectangular coordinate system

- Introduction
- Data Description
- Data Visualization
- slide 1
- slide 2
- slide 3
- V
- Visualization of shots position according to the given rectangular coordinates
- A
- V
- V
- V
- v
- V
- V
- A
- Data Visualization
- Conclusion

According to the three different ways to divide the field area, respectively visualizing the shooting area

■ Division of shooting area

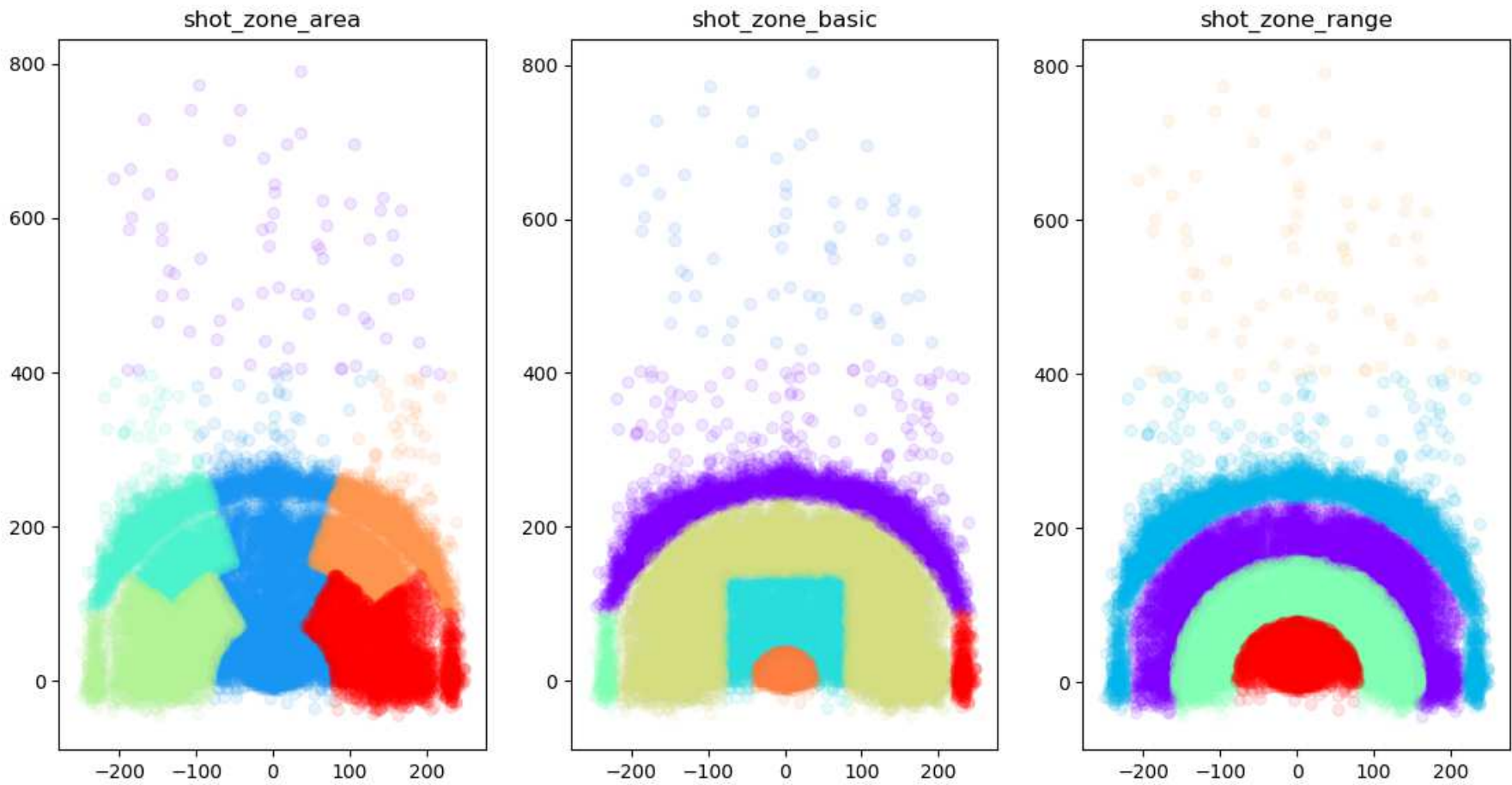


Figure 8: Division of shooting area



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V**
 - V
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Visualization of shot accuracy in shooting area divided by area

■ shot accuracy in shooting area divided by area

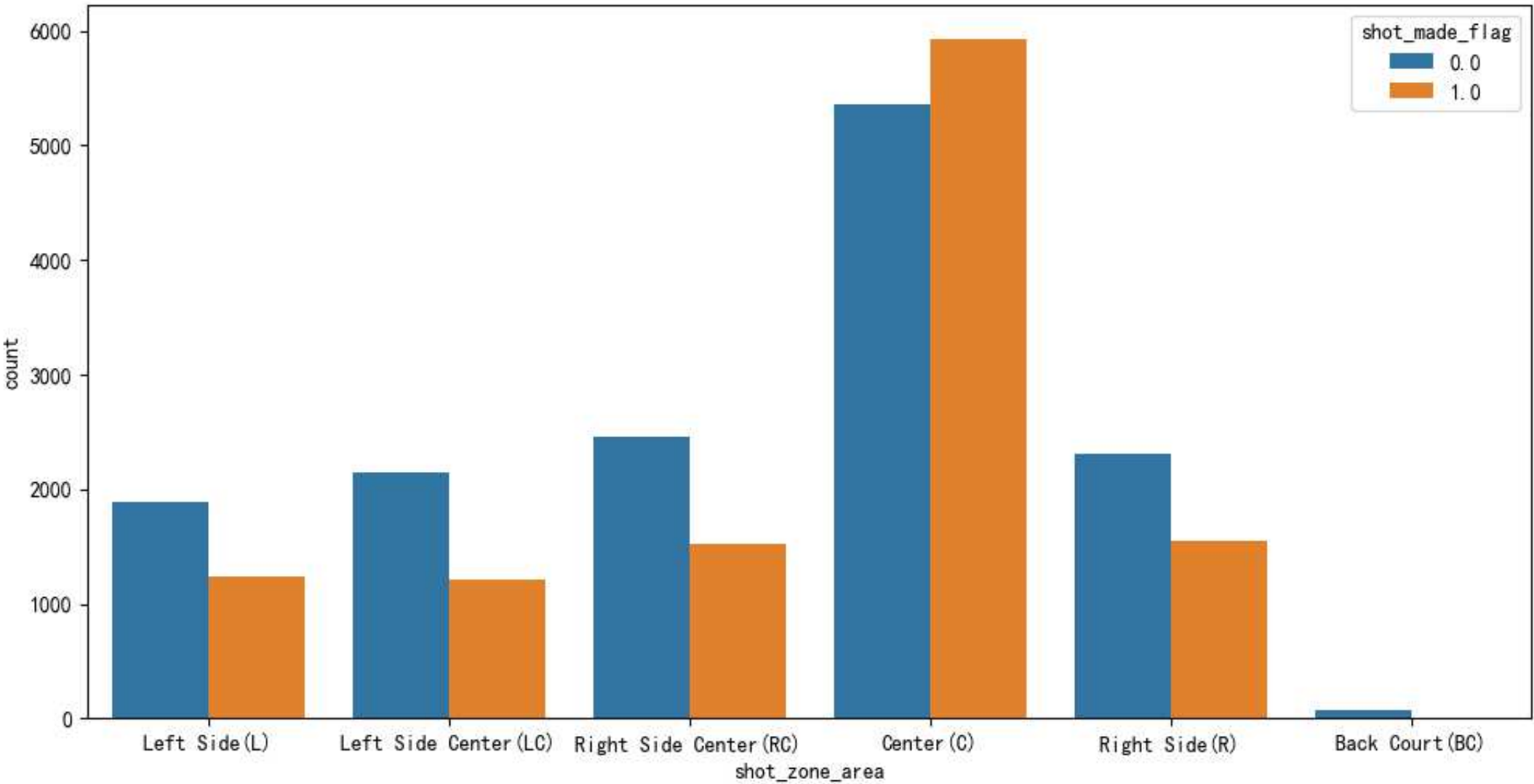


Figure 9: shot accuracy in shooting area divided by area



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V**
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Visualization of shot accuracy in shooting area divided by NBA rules

■ shot accuracy in shooting area divided by NBA rules

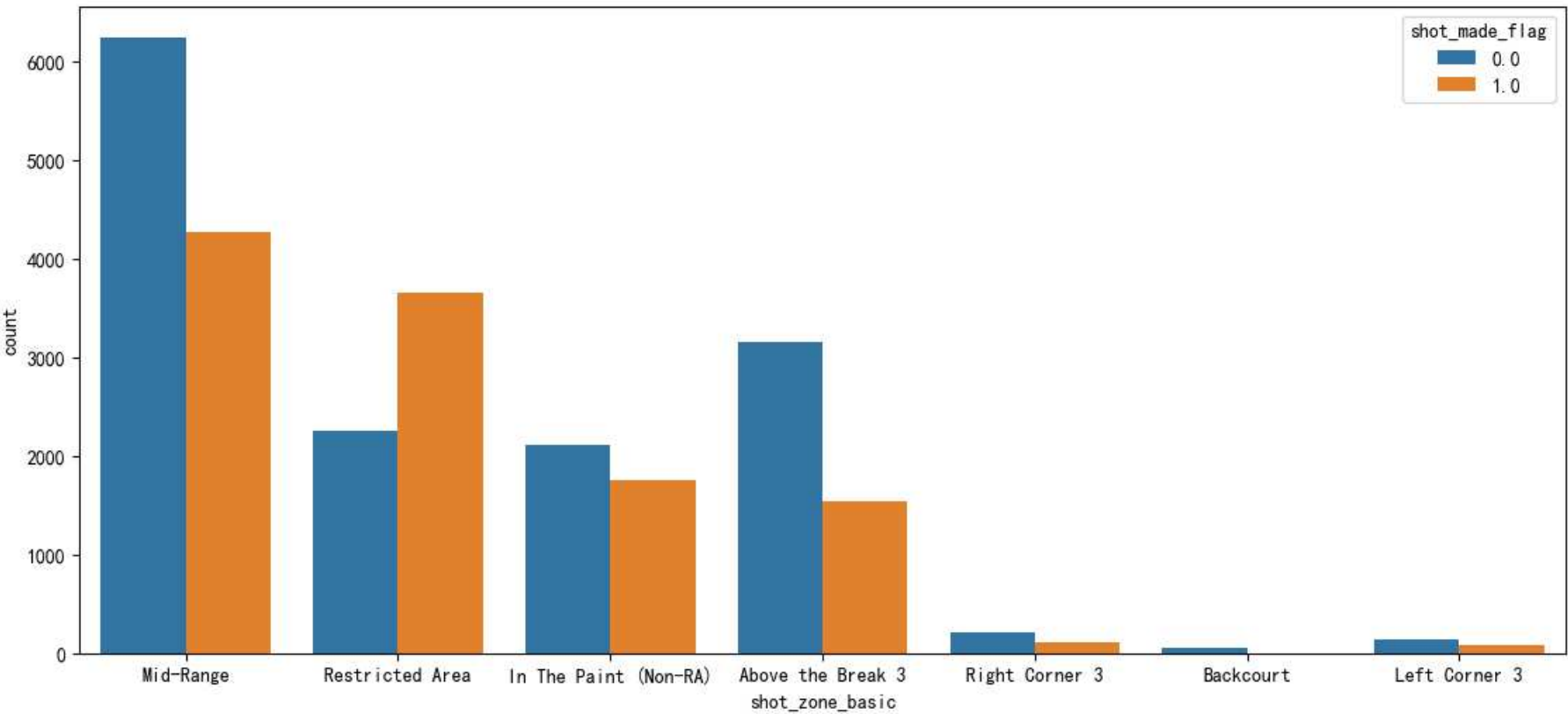


Figure 10: shot accuracy in shooting area divided by NBA rules



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V**
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Visualization of shot accuracy in shooting area divided by radius

■ shot accuracy in shooting area divided by radius

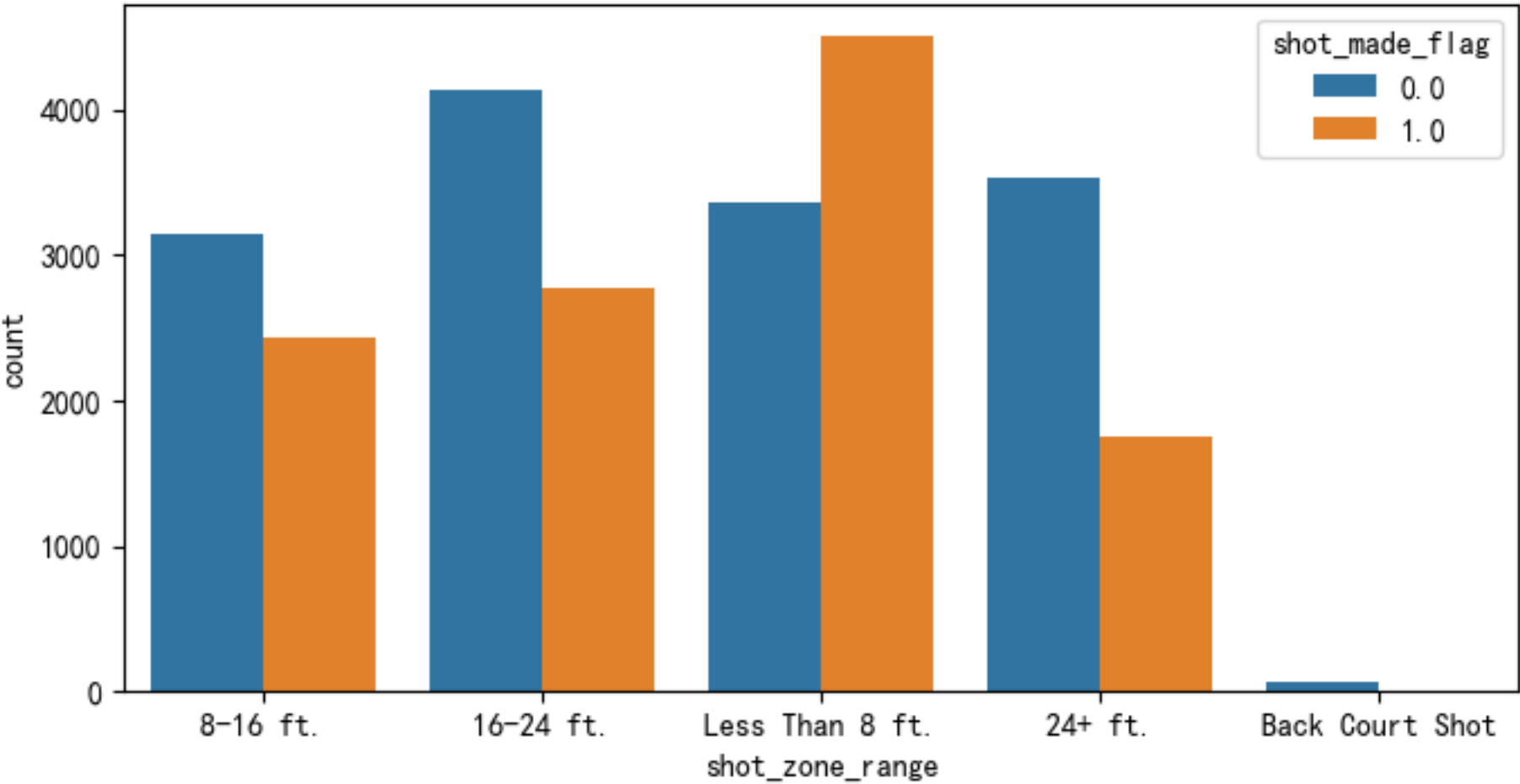


Figure 11: shot accuracy in shooting area divided by radius



slide 10

- Introduction
- Data Description
- Data Visualization
- slide 1
- slide 2
- slide 3
- V
- Visualization of shots position according to the given rectangular coordinates
- A
- V
- V
- V
- v**
- V
- V
- A
- Data Visualization
- Conclusion

visualize the shot accuracy of each seasons.

■ shot accuracy of each seasons

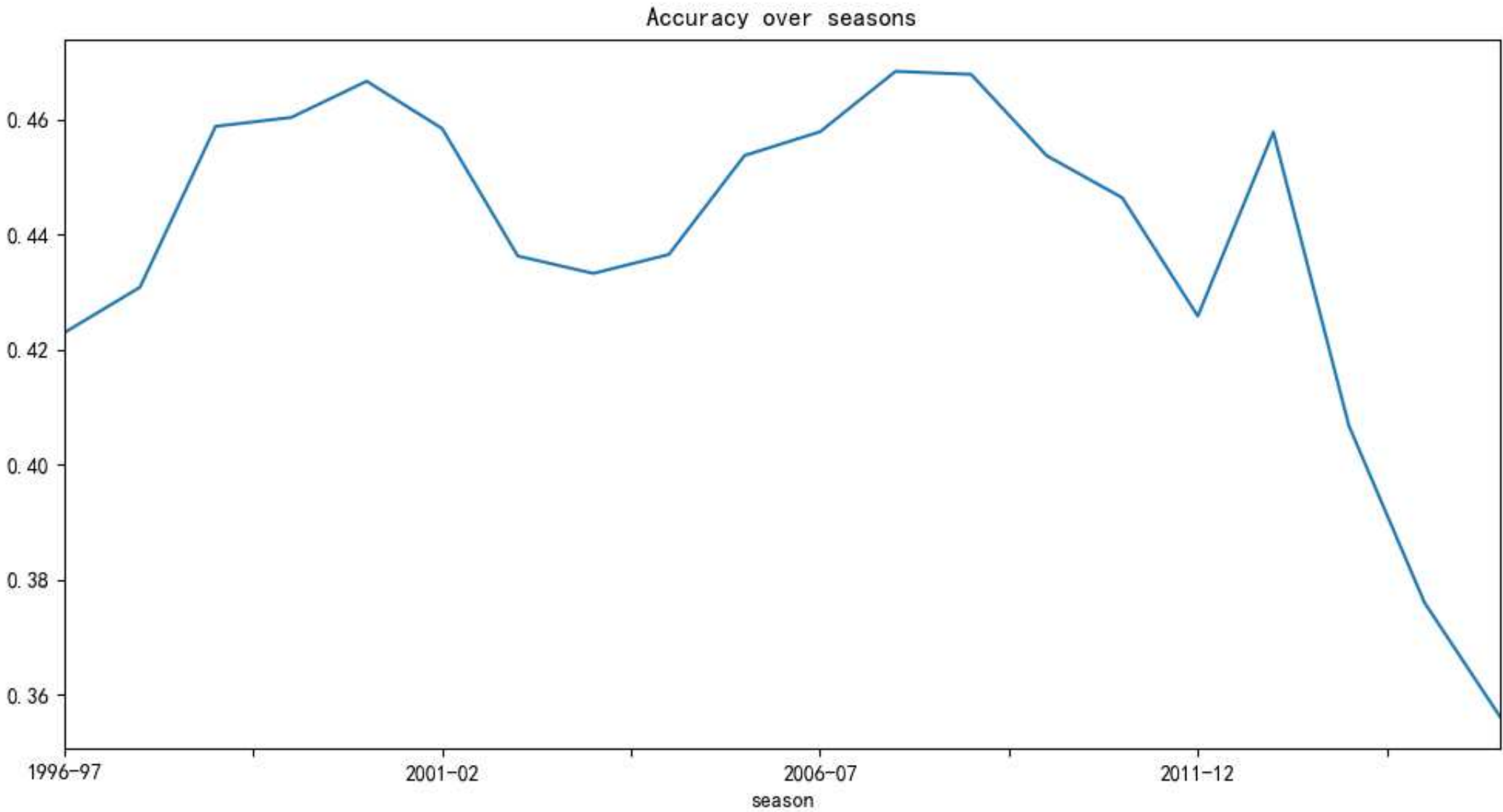


Figure 12: shot accuracy of each seasons



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V**
 - V
 - A
- Data Visualization
- Conclusion

Visualize the shot times and shot accuracy of each period.

■ The shot times of each period

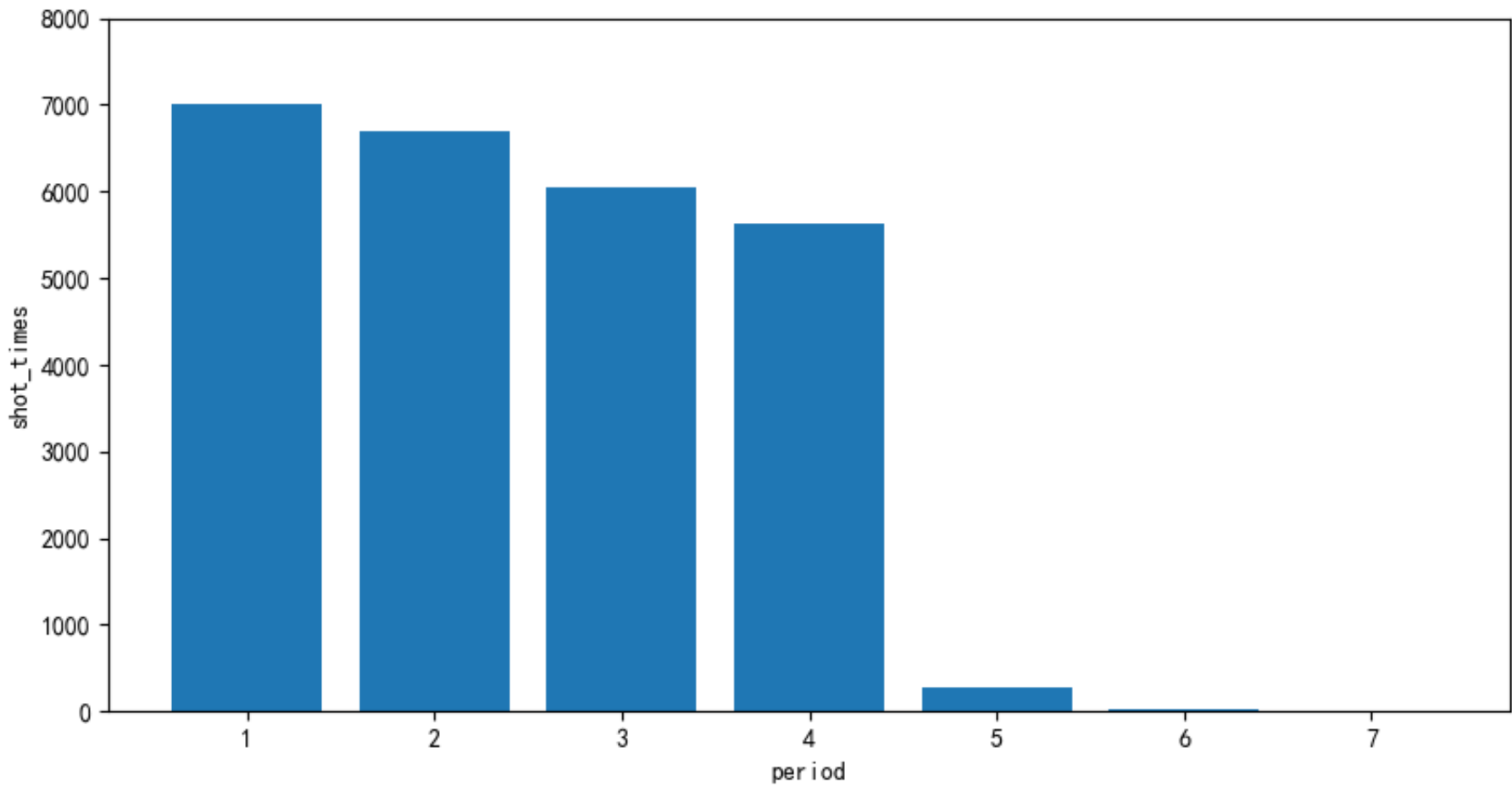


Figure 13: Shot times of each period



slide 12

- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V
 - V**
 - A
- Data Visualization
- Conclusion

Visualize the shot times and shot accuracy of each period.

■ The shot accuracy of each period

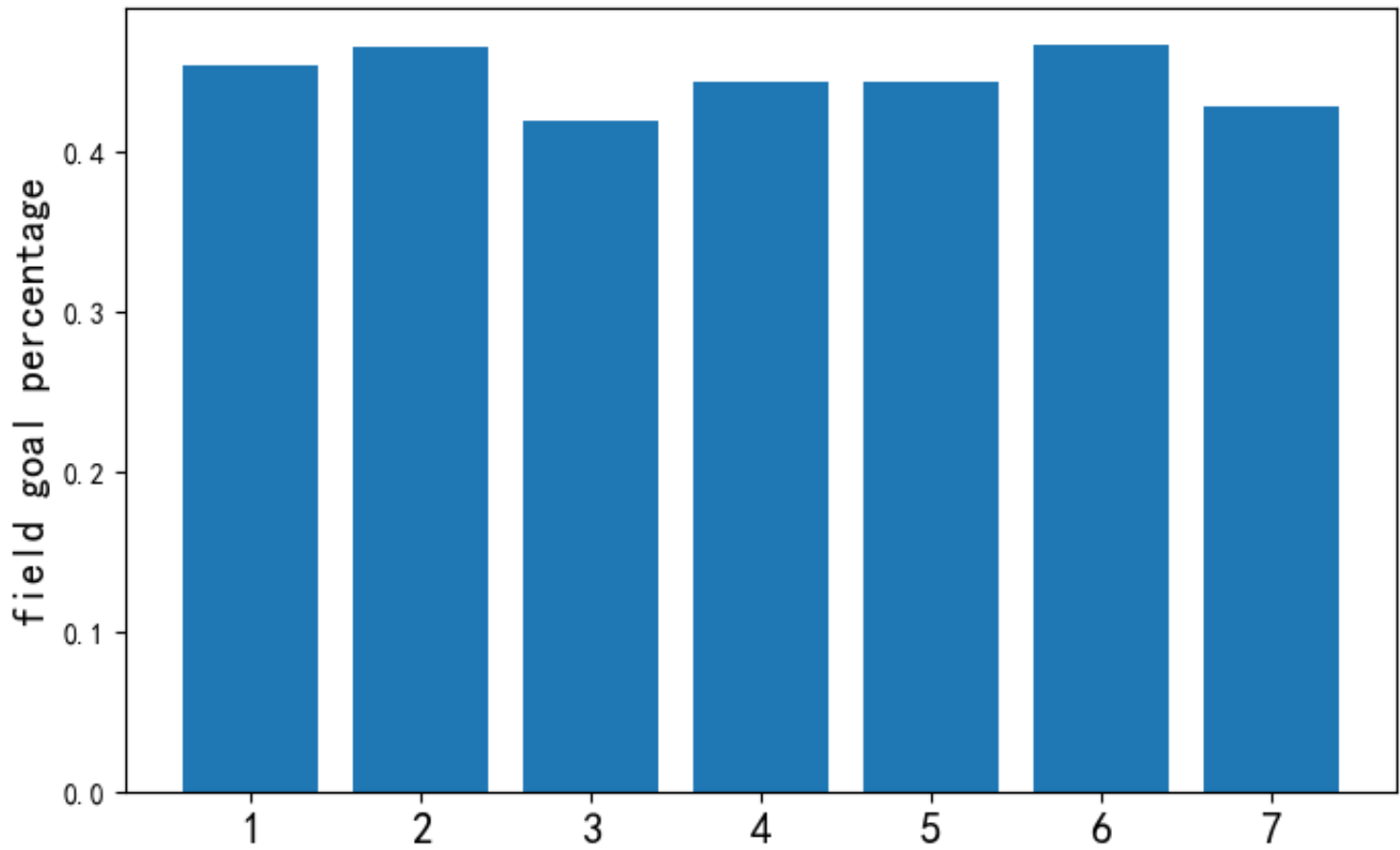
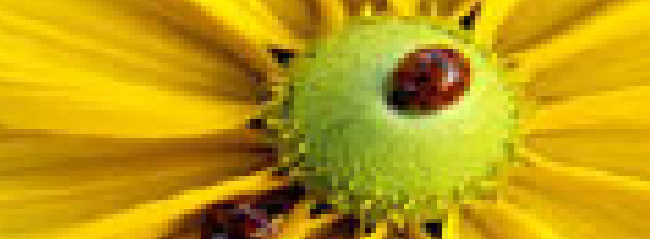


Figure 14: Shot accuracy of each period



- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Apply 3 different binnings of time and show the attempts as function from game start

■ Histogram of shots and time

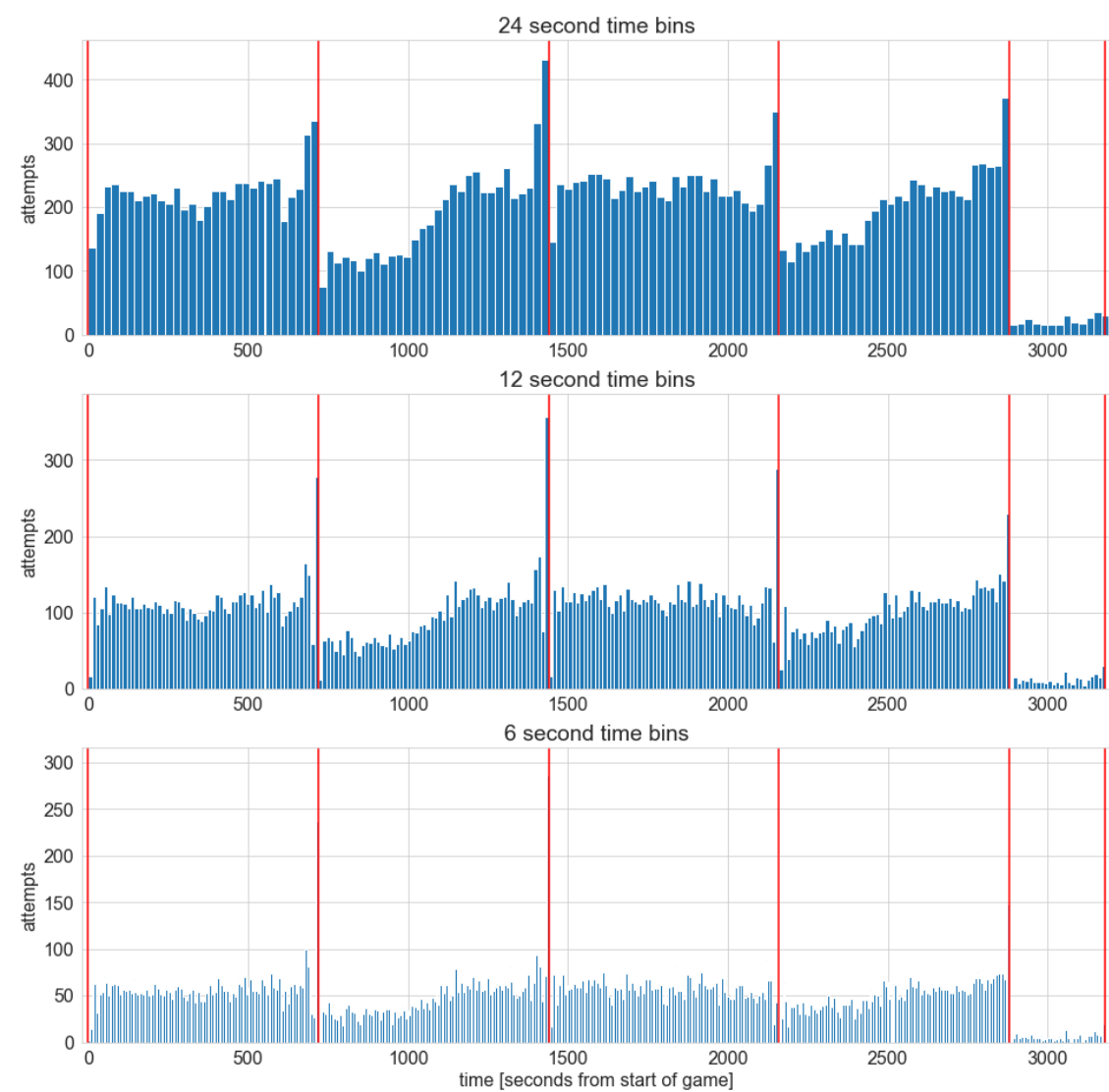


Figure 15: Histogram of shots and time

- Introduction
- Data Description
- Data Visualization
 - slide 1
 - slide 2
 - slide 3
 - V
 - Visualization of shots position according to the given rectangular coordinates
 - A
 - V
 - V
 - V
 - v
 - V
 - V
 - A
- Data Visualization
- Conclusion

Plot shot accuracy as function of time during the game.(20 second time bins)

■ Histogram of shot accuracy and time

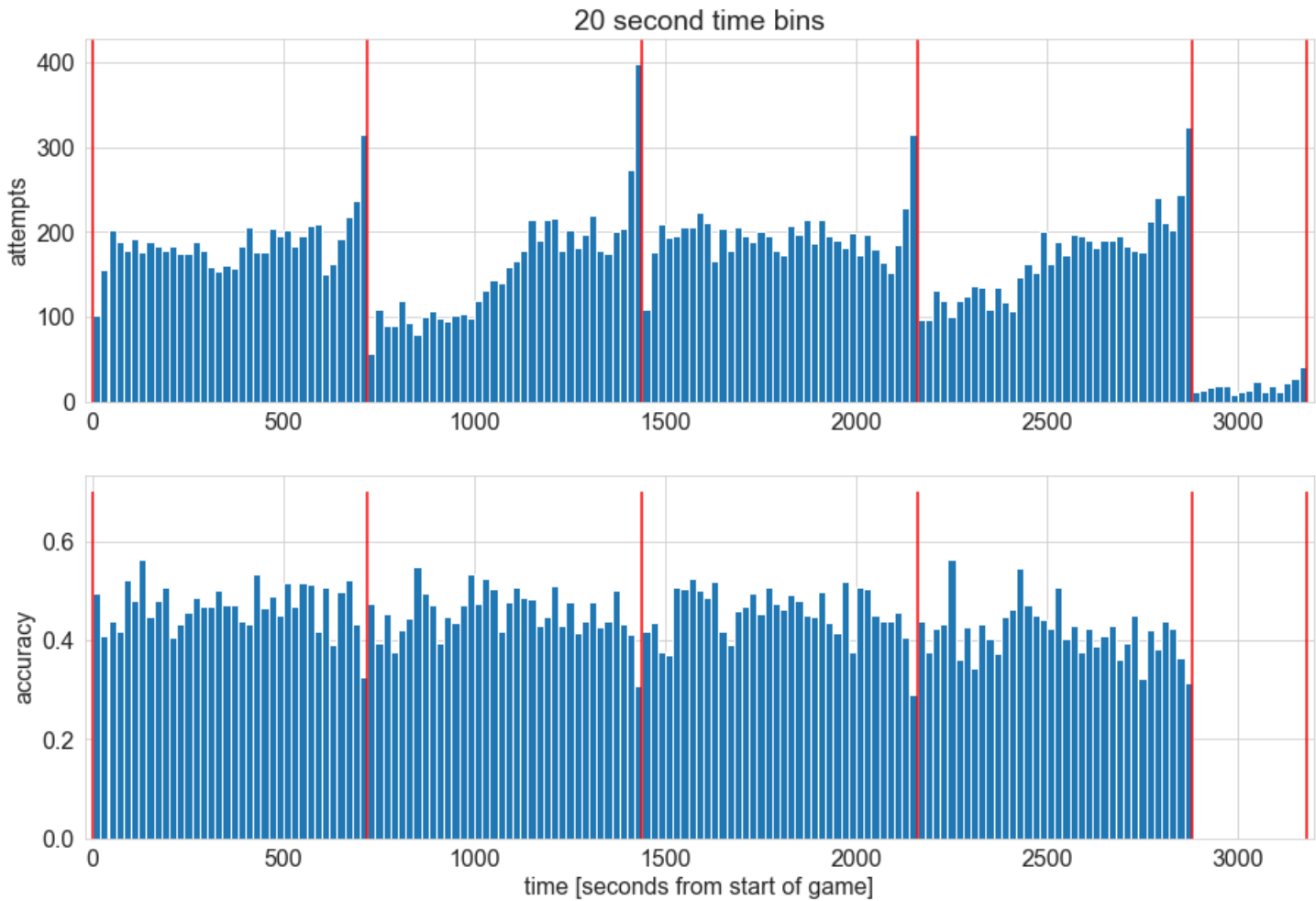


Figure 16: Histogram of shot accuracy and time



[Introduction](#)

[Data Description](#)

[Data Visualization](#)

Conclusion

Model performance and Feature importance.

Conclusion