Flip00 Mid-term Test Presentation

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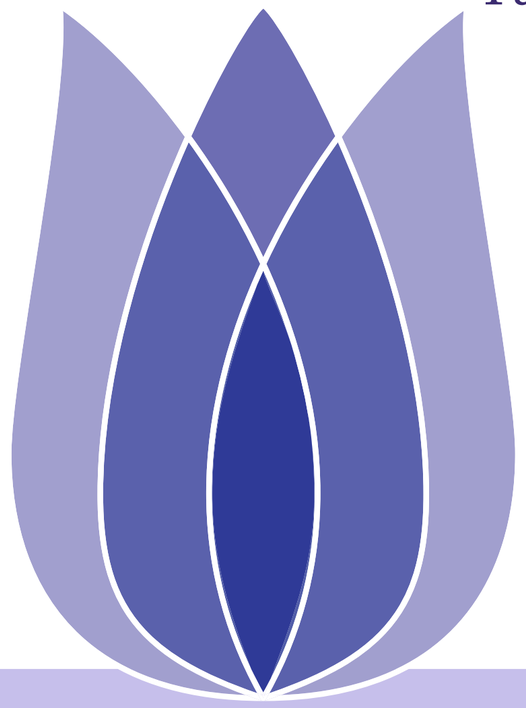

Outline

Introduction

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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

Data Description

Descriptive Statistics

AimUse descriptive statistics to get an overview of the data

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

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	lat	loc_x	loc_y	lon	minutes_remaining	seconds_remaining	shot_distance
count	30697.000000	30697.000000	30697.000000	30697.000000	30697.000000	30697.000000	30697.000000
mean	33.953192	7.110499	91.107535	-118.262690	4.885624	28.365085	13.437437
std	0.087791	110.124578	87.791361	0.110125	3.449897	17.478949	9.374189
min	33.253300	-250.000000	-44.000000	-118.519800	0.000000	0.000000	0.000000
25%	33.884300	-68.000000	4.000000	-118.337800	2.000000	13.000000	5.000000
50%	33.970300	0.000000	74.000000	-118.269800	5.000000	28.000000	15.000000
75%	34.040300	95.000000	160.000000	-118.174800	8.000000	43.000000	21.000000
max	34.088300	248.000000	791.000000	-118.021800	11.000000	59.000000	79.000000

Figure 1: the part description of the data

Descriptive Statistics

AimUse descriptive statistics to get an overview of the data

- And for part of *categorical* columns:

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- 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

Data Visualization

slide 1

To Count Kobe's total shots

- The hit distribution histogram of Kobe's shots

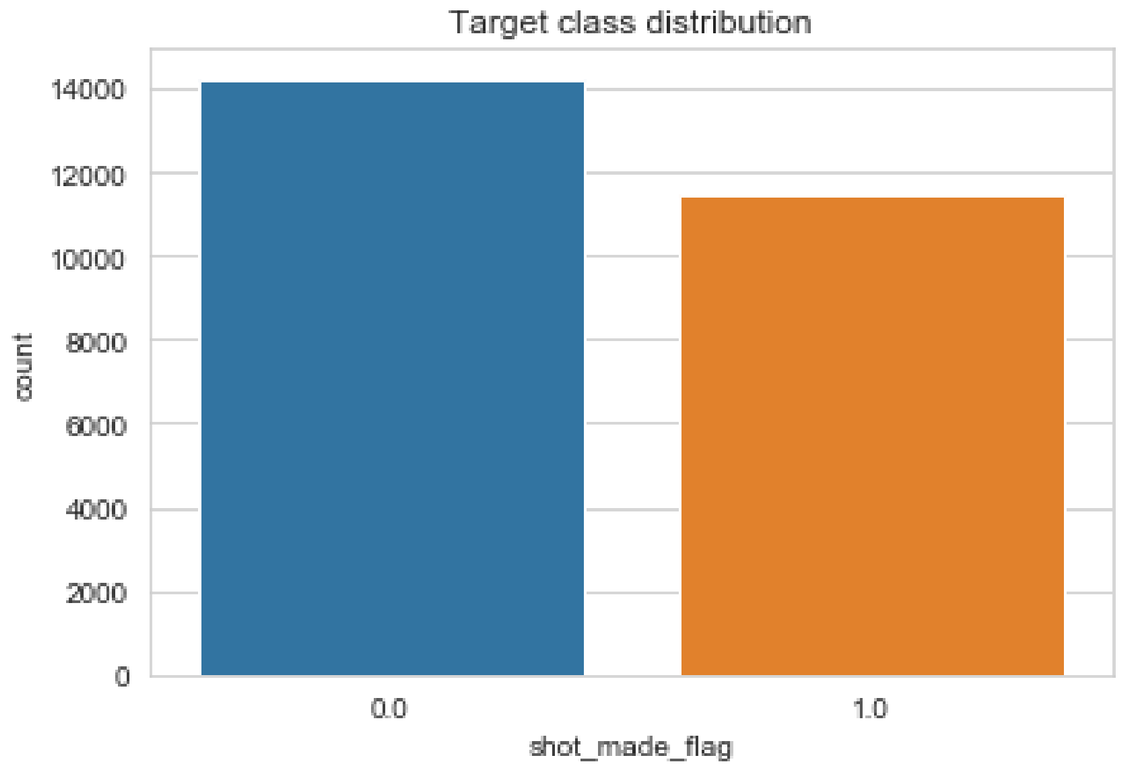

Figure 3: target class distribution

slide 2

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)

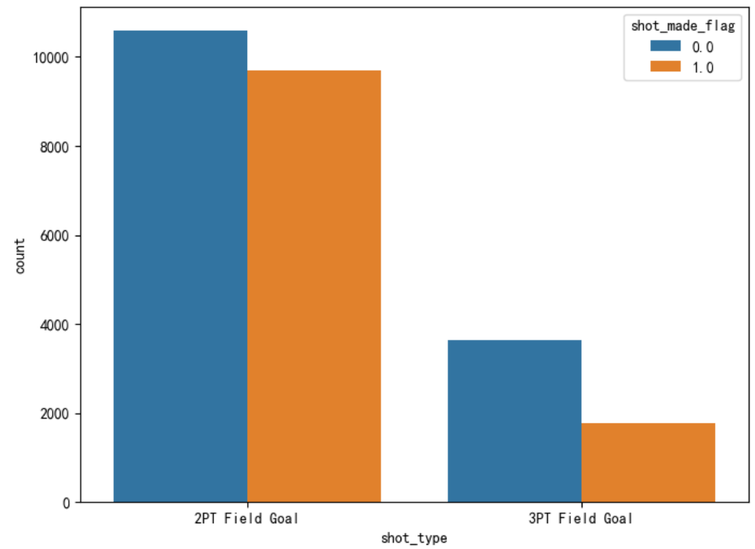

Figure 4: The hit distribution histogram of two shot types

slide 3

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

- the shot type and position of Kobe's shots

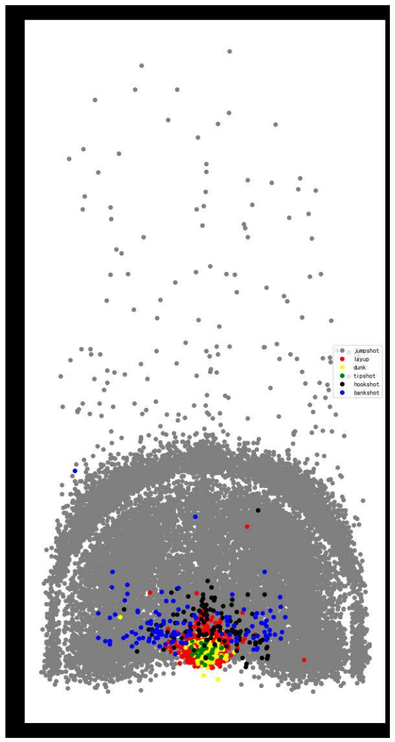

Figure 5: the shot type and position of Kobe's shots

V

isualizing the shot accuracy of various action type

- the shot accuracy of various action type

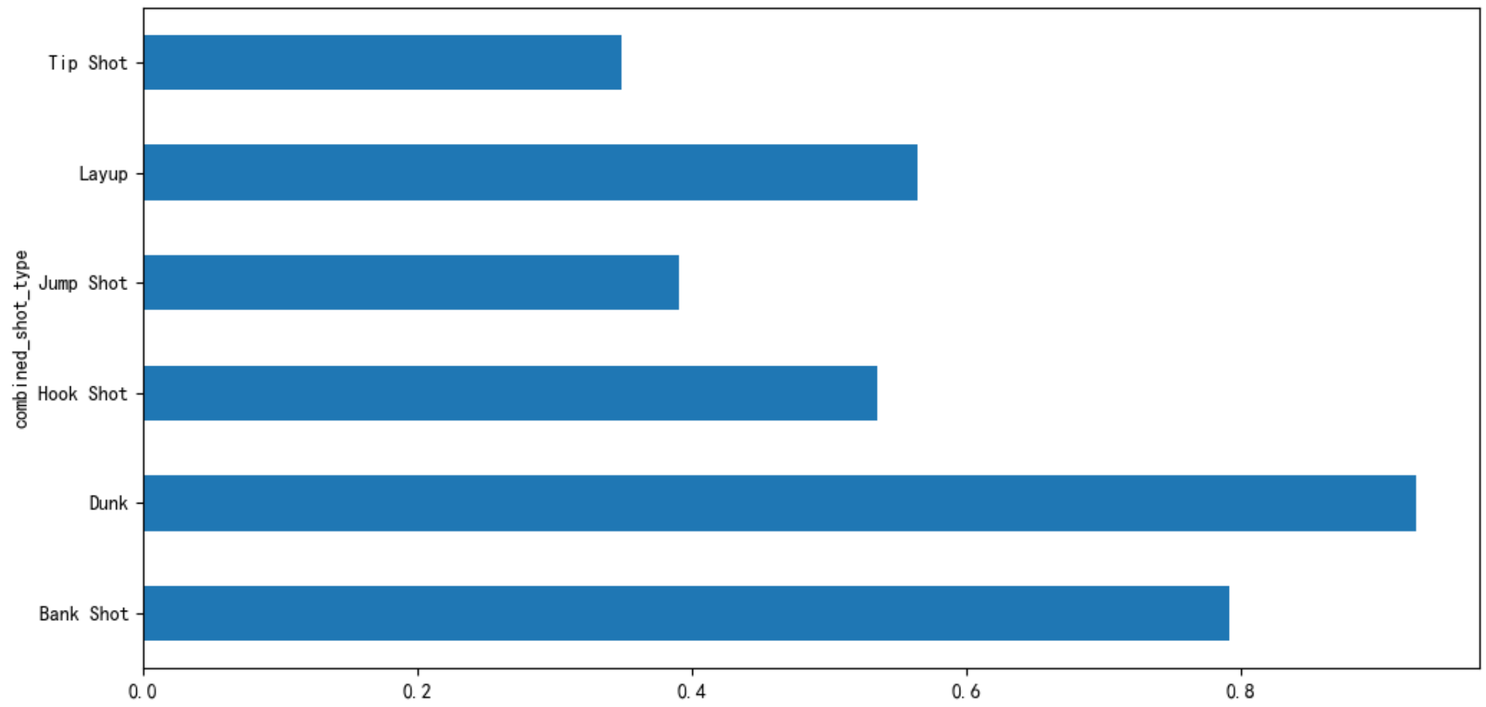

Figure 6: the shot accuracy of various action type

Visualization of shots position according to the given rectangular coordinates

- shots position in rectangular coordinate system

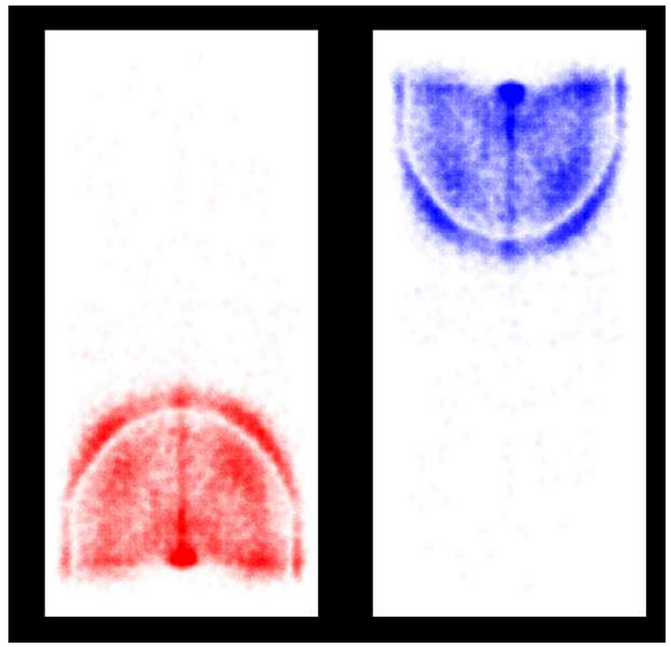

Figure 7: shots position in rectangular coordinate system

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

- Division of shooting area

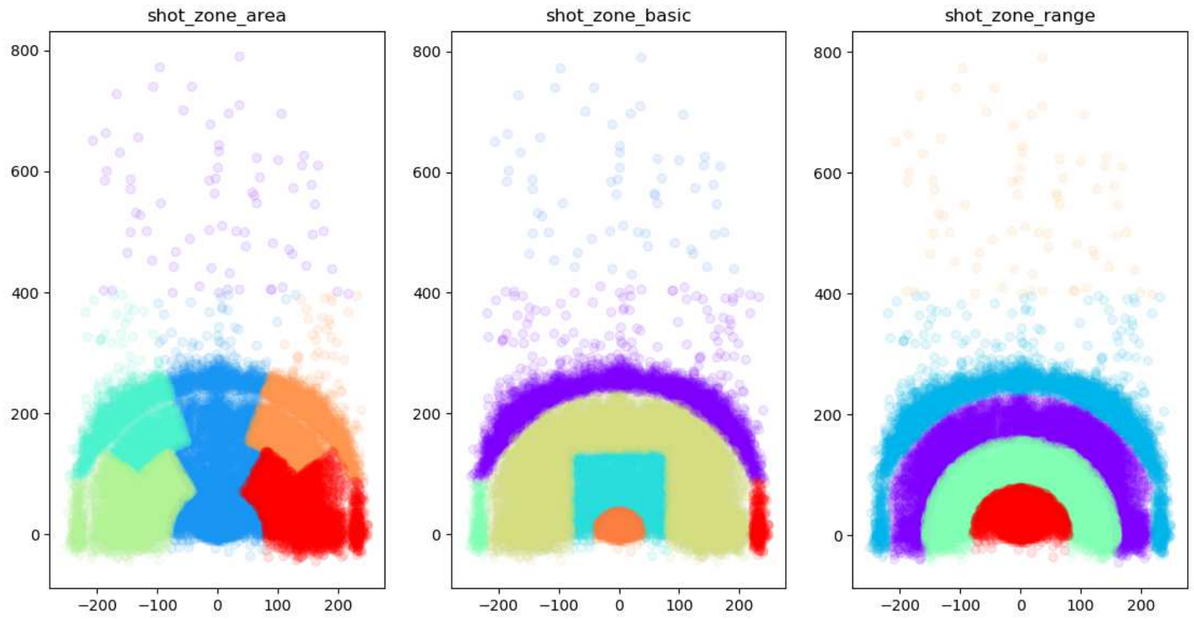

Figure 8: Division of shooting area

isualization of shot accuracy in shooting area divided by area

- shot accuracy in shooting area divided by area

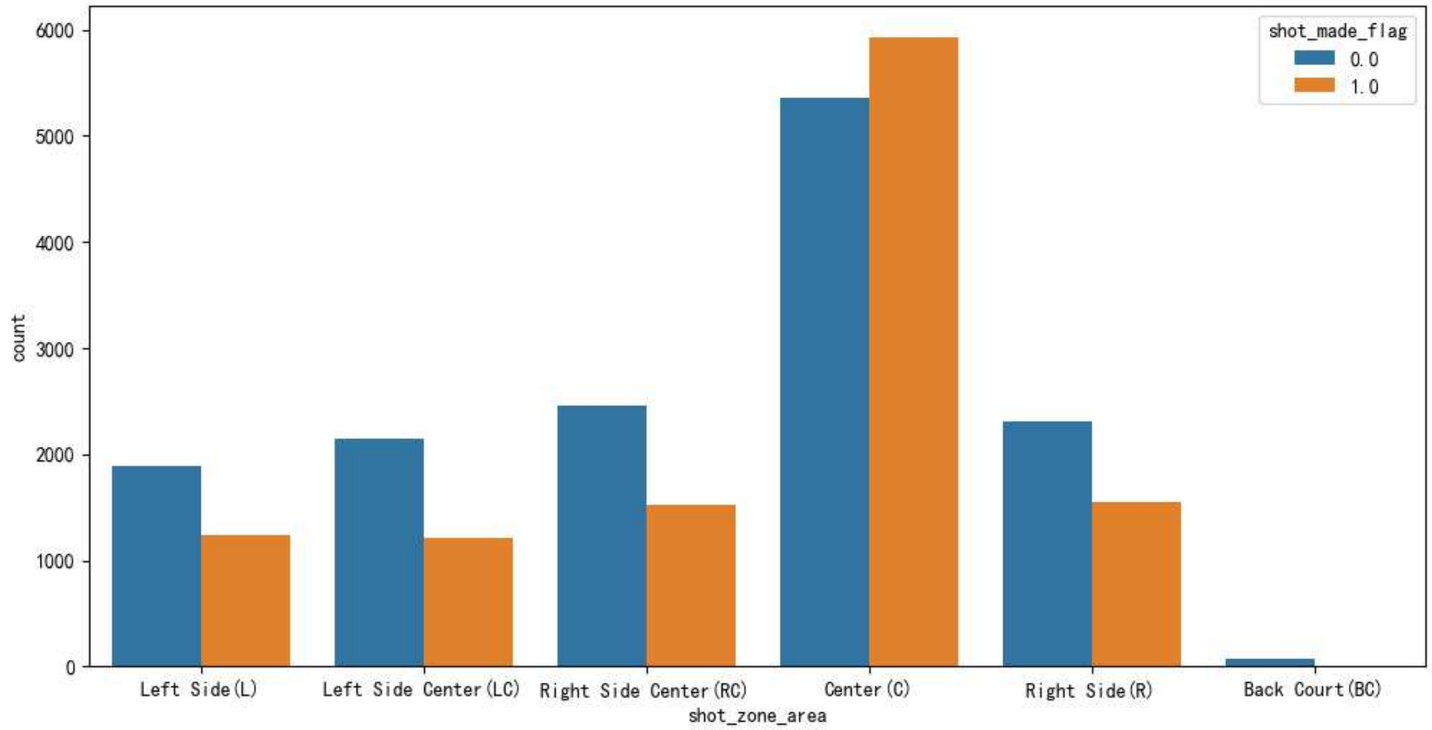

Figure 9: shot accuracy in shooting area divided by area

V

isualization of shot accuracy in shooting area divided by NBA rules

- shot accuracy in shooting area divided by NBA rules

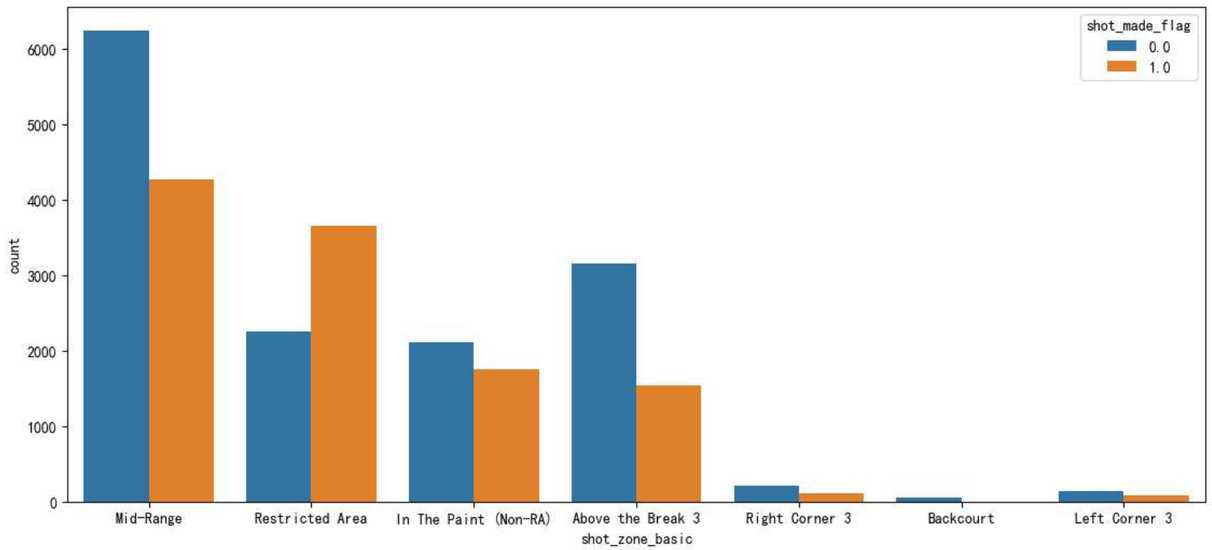

Figure 10: shot accuracy in shooting area divided by NBA rules

V

isualization of shot accuracy in shooting area divided by radius

- shot accuracy in shooting area divided by radius

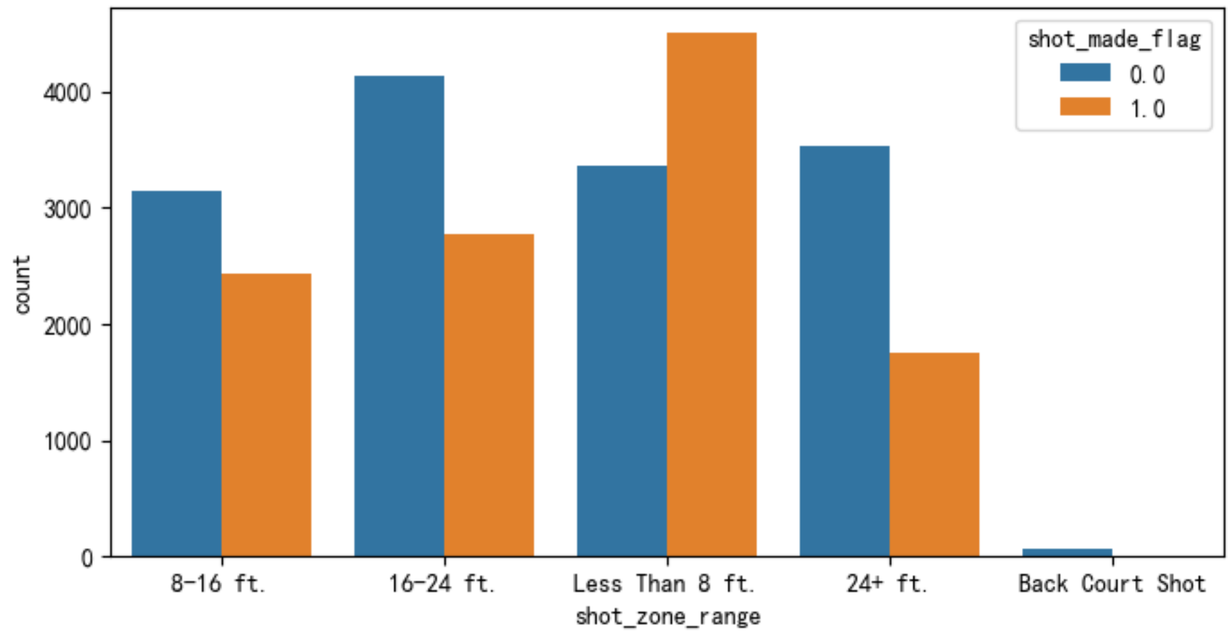

Figure 11: shot accuracy in shooting area divided by radius

isualize the shot accuracy of each seasons.

- shot accuracy of each seasons

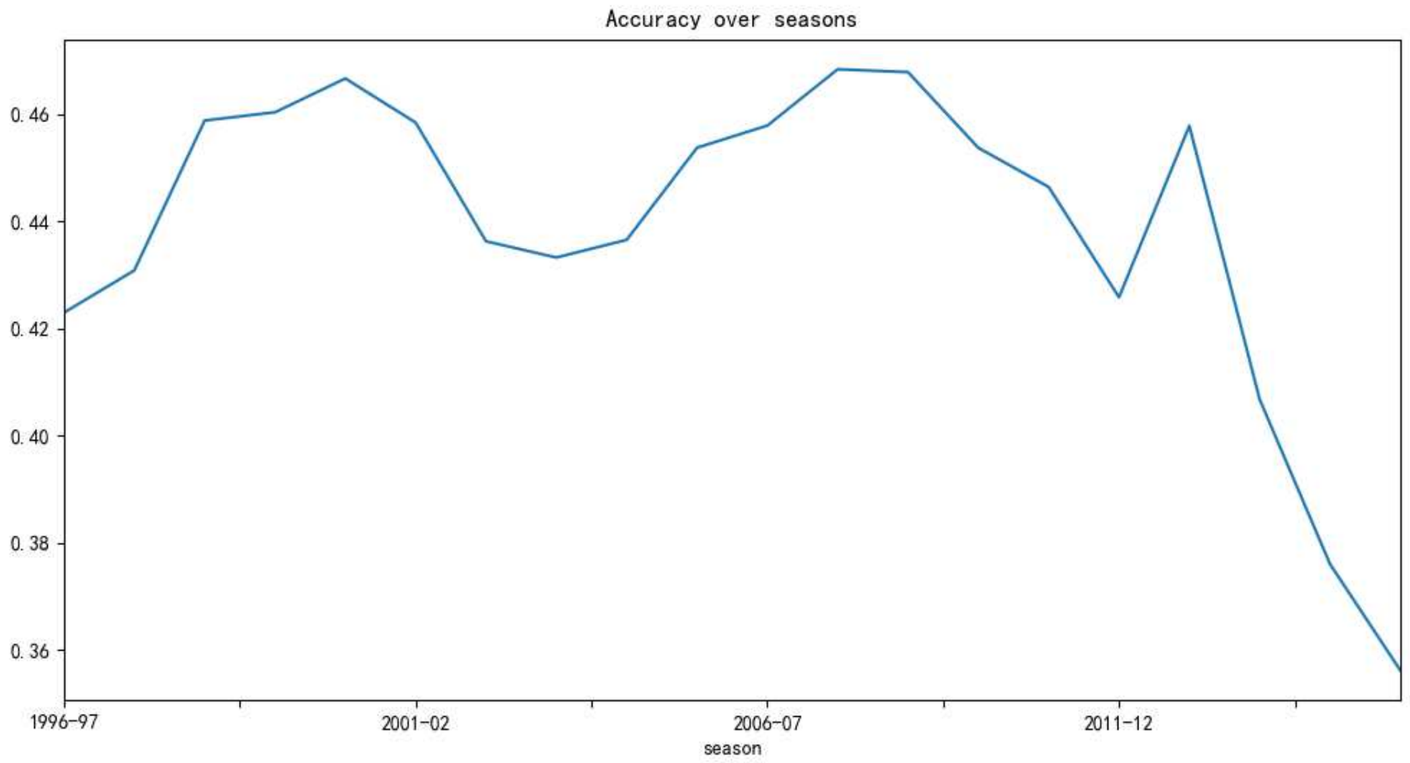

Figure 12: shot accuracy of each seasons

V

isualize the shot times and shot accuracy of each period.

- The shot times of each period

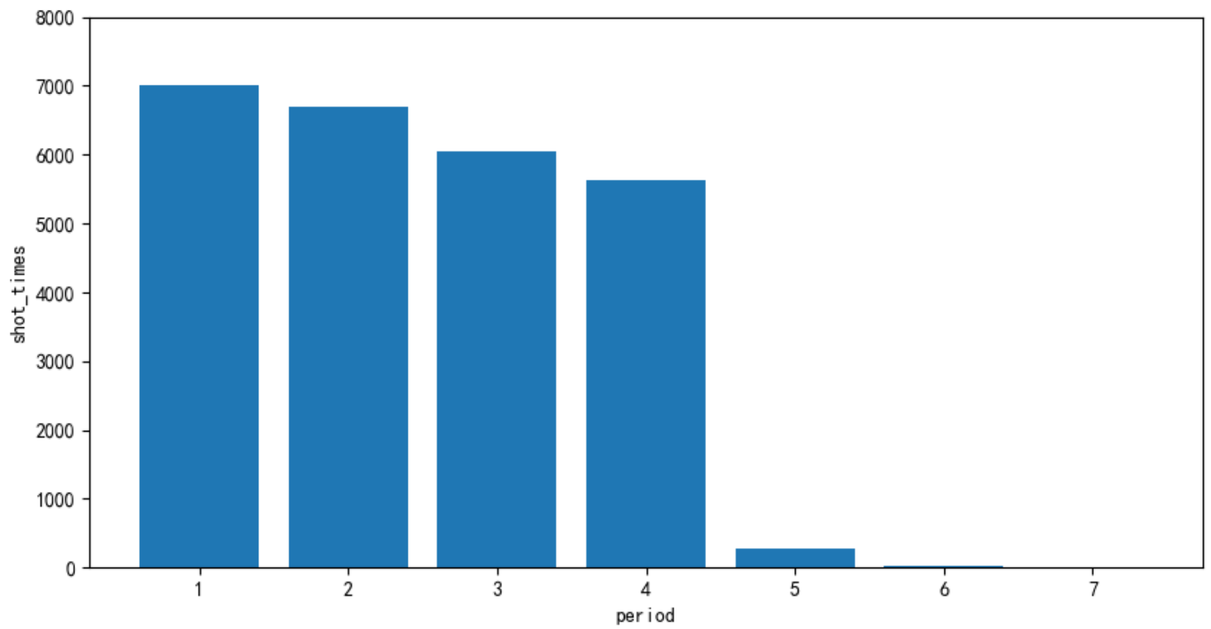

Figure 13: Shot times of each period

isualize the shot times and shot accuracy of each period.

- The shot accuracy of each period

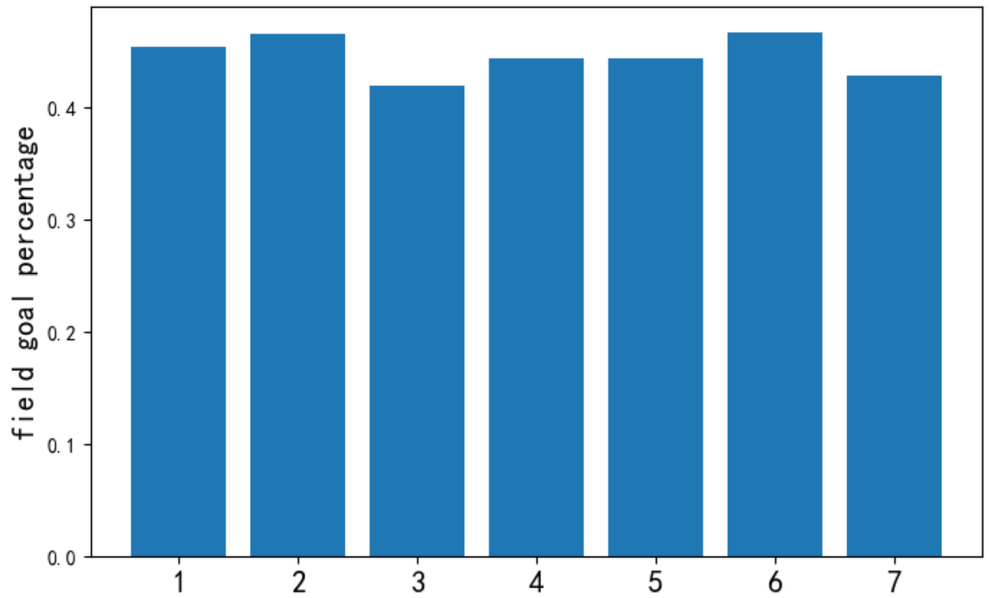

Figure 14: Shot accuracy of each period

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

- Histogram of shots and time

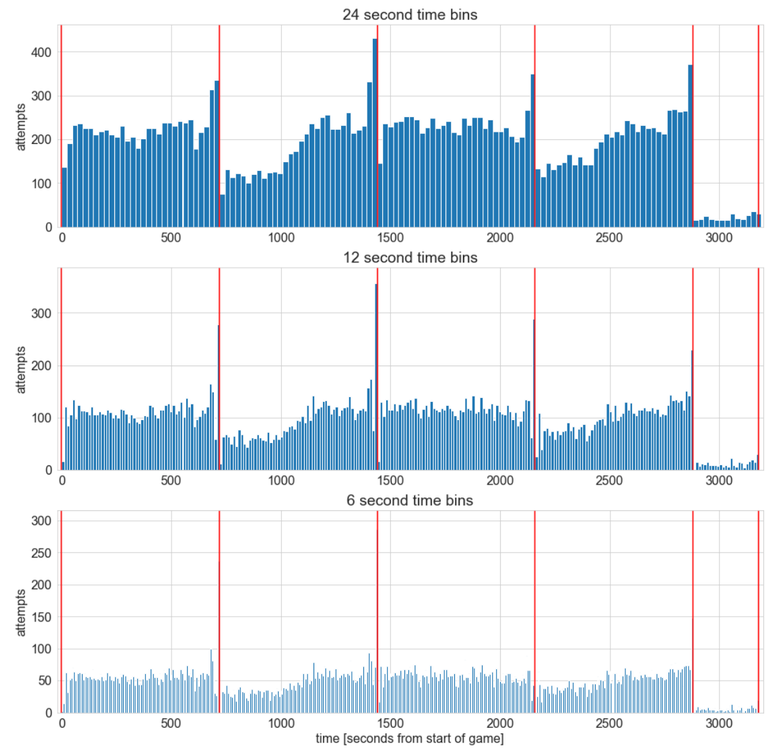

Figure 15: Histogram of shots and time

Data Visualization

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

- Histogram of shot accuracy and time

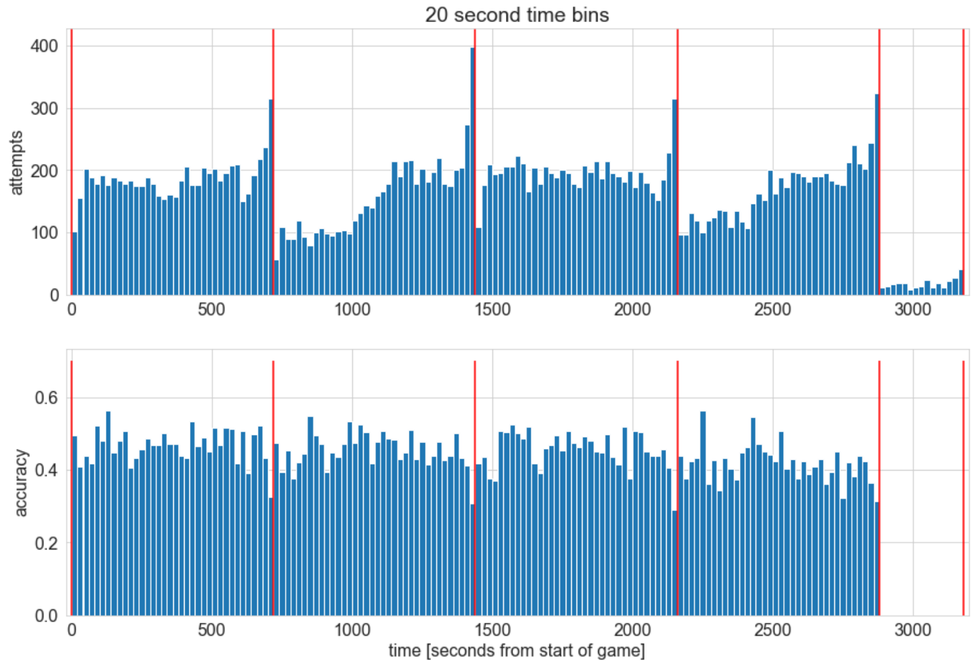

Figure 16: Histogram of shot accuracy and time

Conclusion