NBA DATA ANALYSIS

By Khalid Gharib & Marc Inizan

Getting Data & Exploratory Data Analysis

- We used datasets coming from Kaggle containing data of the past 18 NBA seasons
- Data cleaning
- Merging datasets
- Setting up our questions and hypotheses
- Instead of using plus/minus or other performances indicators we decided to build our own performance indicator score based on Draft Kings NBA's scoring

Question 1

Is there a significant difference in player performance when playing Home vs Away ?

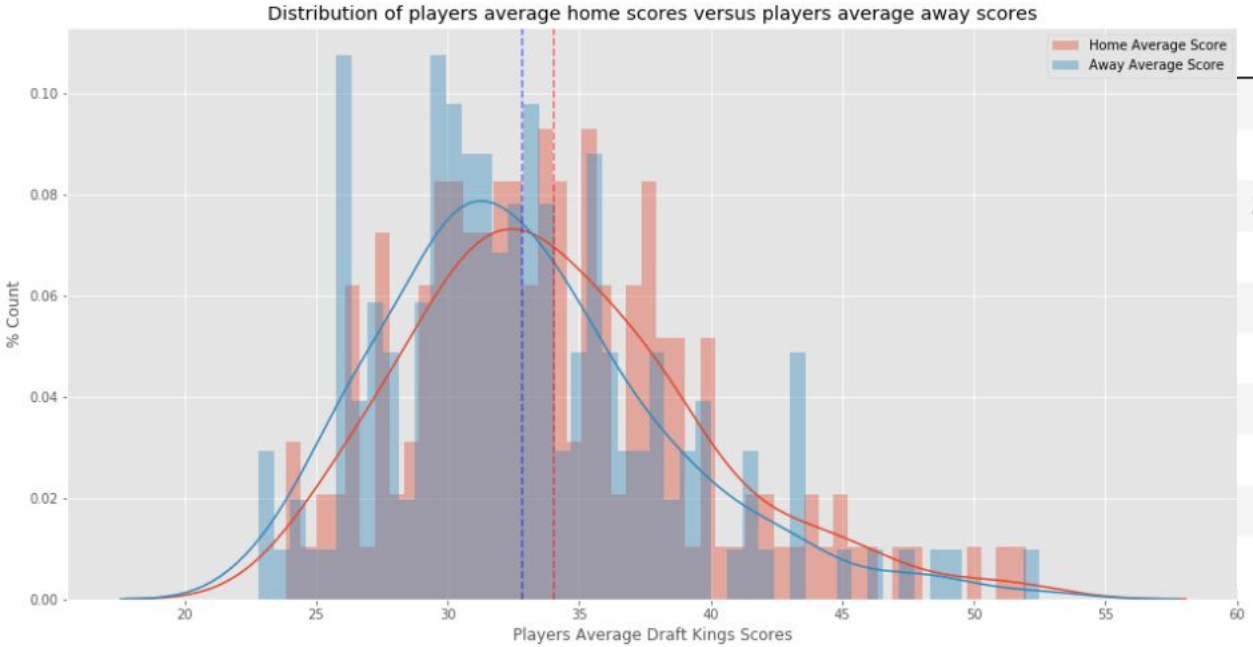
H_o: There is no differences between players performances when they play at home or when they play away.

H_a: Players performances are different when they play home vs when they are away

Test used: Two sample T-Test

Question 1

Is there a significant difference in player performance when playing Home vs Away ?



PLAYER_NAME	home_avg	away_avg	home_edge
Chris Andersen	28.062500	22.805556	5.256944
Ben Wallace	35.767202	30.534264	5.232938
Zydrunas Ilgauskas	37.286000	32.755474	4.530526
Gerald Wallace	37.741259	33.423640	4.317619
Channing Frye	31.111570	27.058252	4.053318
Roy Hibbert	35.149590	31.235537	3.914053
Nicolas Batum	33.708182	30.088561	3.619621
Blake Griffin	44.692440	41.358182	3.334258
Randy Foye	30.753597	27.490385	3.263213
Chris Kaman	35.924716	32.845745	3.078971

Question 1 Bis

Is there a significant difference in Gerald Wallace performances when he plays at Home versus when he plays Away ?

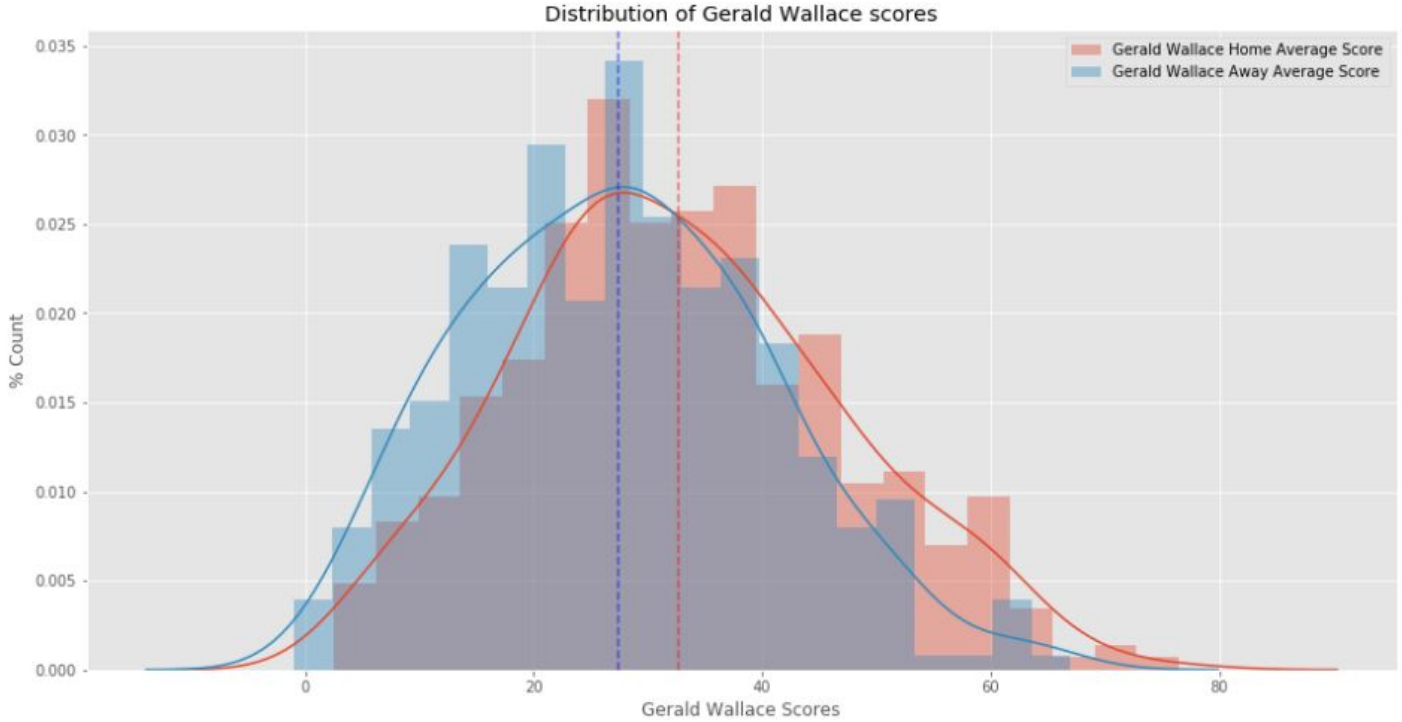
H_o: There is no differences between Gerald Wallace performances when he play at home or when he play away.

H_a: Gerald Wallace performances are impacted by whether he is playing home or away

Test used: Two sample T-Test

Question 1 Bis

Is there a significant difference in Gerald Wallace performances when he plays at Home vs Away ?



Question 1 & 1 Bis be like:

We cannot reject the null hypothesis that players are more efficient when they play home compared to when they play away.

BUT

We can reject the null hypothesis that a specific player can play significantly better when he is playing at home.

Question 2

Is it significantly easier for teams playing in the Eastern Conference to make the playoffs?

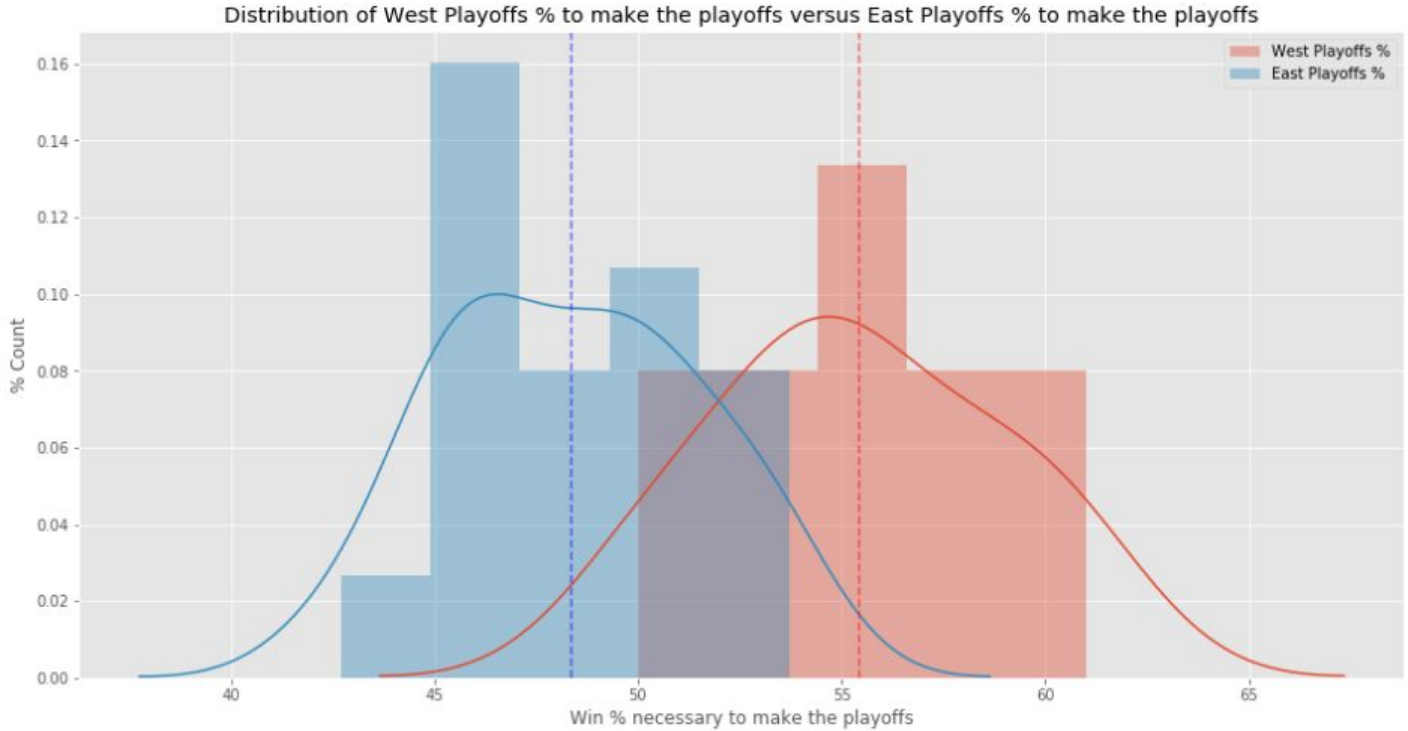
H_o: It is significantly easier for teams to make the Playoffs in the East versus the West from the last 16 seasons.

H_a: There is no significant difference in ease for teams to make the Playoffs in the East versus the West from the last 16 Seasons

Test used: Two sample T-Test

Question 2

Is it significantly easier for teams playing in the Eastern Conference to make the playoffs?



Question 3

Do teams with one superstar caliber player win more games on average ?

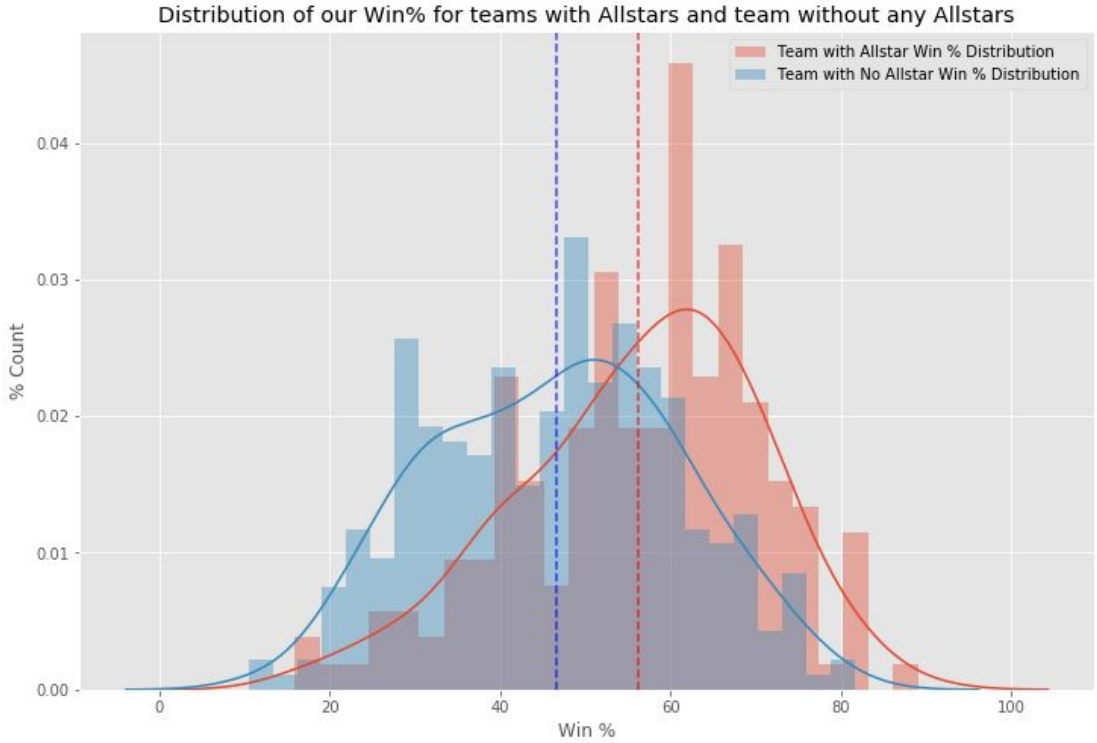
H_o: There is a significant difference in teams winning who have at least one or more players who are all stars(with a DF_SCORE > 40 in their team)

H_a: There is no significant difference in teams winning who have at least one or more players who are all stars(with a DF_SCORE > 40 in their team)

Test used: Cohen's d

Question 3

Do teams with one superstar caliber player win more games on average ?



Questions and Answers