Fantasy Lord

(1st January 2018 - 24th August 2018)

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Note: The Project has been sold to “Dream11Masters” - > a site which provides teams for NBA on Dream11 on 24th August, 2018 .

The success rate has been very good in NBA for the channel and I requested them to allow me to upload the docs for the project so that others can come up with better model .

Overview

Goals

1. To make 8 membered team for **Dream11** fantasy site such that it gets maximum points .

Specifications

Predict player’s point for a Given Match using Dream11 point system (not NBA) and using past history and then choose the players with highest point satisfying the constraint .

Constraints :

0. A total of 8 players have to be selected from the two teams.

1 . A minimum of 3 players and and maximum of 5 players from a team .

2 . The two team players are divided in 5 categories - >

a) Point Guard (min 1 max 4 selection)

b) Shooting Guard (min 1 max 4 selection)

c) Small Forward (min 1 max 4 selection)

d) Power Forward (min 1 max 4 selection)

e) Center (min 1 max 4 selection)

(Total possibility can be thought of as -> x+y+z+u+v=8 such that x,y,z,u,v>=1)

3 .Each player comes with a cost (between 1 to 10) and selected player sum of cost should not go beyond 100 . Sum of Cost<=100 .

4. A player has to be selected as captain and his points are doubled .

Dream11 Point System :

Type	Score
Points	1
Assist	1.5
Rebound	1.2
Block	3
Steal	3
Turnover	-1

Score of each player is calculated for real game according to the table .

Objective Function :

The score for each player according to the table above should be summed together and following should be maximised -

Teams_score = Captain's_score *2 + SUM(other 7 players score) .

Prediction Of Points scored by a Player:

Points of the player depend on following :

1. Avg_ Minutes : (Average minutes per match)

2. Starting : (1 – starting , 0 - not starting)

3 . Defence Rate of the team (This is marked on scale of 1-10 and is subjected to change – Fed manually for each team)

4. Avg_points of player (Average points scored by player in the season)

Prediction Of Rebounds scored by a Player:

Rebounds of a player depend in the following :

1 . Avg_Minutes

2 . Avg_Rebounds per match

3 . ***Defensive Duty (1 – if player is on Defensive Duty 0 – if no info) -> This feature proved to be very useful in predicting Blocks , Steal , Rebounds during last year playoffs (2018)

Note: This information is available for high profile matches and a lot of info can be found on this during playoffs .

4. **Avg_Rebounds_given_by_opponent : This feature list average rebounds the opponents give per match . This feature is also useful in identifying teams like GSW who attack more and hence give away lot of rebounds .

Prediction Of Assists scored by a Player:

Assist of a player depend in the following :

1. Avg_ Minutes : (Average minutes per match)

2. Starting : (1 – starting , 0 - not starting)

3 . Defence Rate of the team (This is marked on scale of 1-10 and is subjected to change – Fed manually for each team)

4. Avg_assists of player (Average assists scored by player in the season)

Prediction Of Blocks scored by a Player:

Blocks of a player depend in the following :

1 . Avg_Minutes

2 . Avg_Blocks per match

3 . ***Defensive Duty (1 – if player is on Defensive Duty 0 – if no info) -> This feature proved to be very useful in predicting Blocks , Steal , Rebounds during last year playoffs (2018)

Note: This information is available for high profile matches and a lot of info can be found on this during playoffs .

Prediction Of Steals scored by a Player:

Blocks of a player depend in the following :

1 . Avg_Minutes

2 . Avg_steals per match

3 . ***Defensive Duty (1 – if player is on Defensive Duty 0 – if no info) -> This feature proved to be very useful in predicting Blocks , Steal , Rebounds during last year playoffs (2018)

Note: This information is available for high profile matches and a lot of info can be found on this during playoffs .

Prediction Of Turnovers scored by a Player:

I personally feel that there is no need of predicting turnovers for Dream11 point system as there are very less number of turnovers in a match and even lesser number of turnover associated with each player .

Model:

1.Model used was Multiple LInear regression from Statsmodel API .

2.Got a Adjusted R-square as 0.68 .

Multiple Linear Regression serves the purpose as it doesn't complicate the model-prediction and leaves room for tweaking and adding personal intuition for a game.

Workflow of the Python Application:

1. The script was written in Python 2.7 .

2. The first module of the Fantasy Lord was to get following Match info :

   a) Teams involved
   b) Status of each player - Playing or Injured
   c) Credits and Category of each Player (Dream11 may change the category and credits of a player before match)

3. After getting info the selected player's performance is predicted and stored .

4. Now test all the combination possible . The combinations can vary in following ways -

a) Selecting / dropping a player due to credit issue
b) Picking a player as captain
c) Maximise the team score .

5. Since the combination are not very large , store all the team combination and display top 10 teams points wise .

6 . Now , to include a fantasy gamer's intuition , provide a drop box such that he can remove a player from teams or forcefully pick someone as captain .

7. The application can output any number of teams but it gives top 6 teams indicating the players and their past and predicted performance and Captain .

8 . Due to presence of star players in every team in NBA , most fantasy gamer's can't look beyond them as captain and hence the application provides series of captain choices and plotting their past and predicted performance and comparing them with other choices .

Success Story :

1 .The success rate of the model has been very good as I , personally achieved -

a) 95% win ratio in 2 membered league
b) 80% win in 3-4 membered league .
c) 75% win in 10 membered leagues.

2 .The teams generated from the application perform very well in Grand Leagues but fail to breach the top 3 . Guess , huge luck is needed for that .

3 . The teams work very well in very high profile , superstar's matches where credit issue dictates selection . The Application comes up with very different but unique combination which we humans miss out due to bias towards our favourite player or team .

Flaws in the application :

1 . It became very clear after playing the regular season games with the application's team that some player's had their points and scored inflated by playing against weaker opposition .

a) Remedy : During Playoffs I dropped stats associated with low ranked team in each conference and recomputed the stats . Also , later I added emphasises a little more about history of the players against opponents .
b) I suggest not to play Strong vs Weak Team's match using the application generated team . Instead , some personal intuition can be very fruitful .

2 . 3 pointers should be considered separately as some teams have specialist shooters and teams with weak defence end up giving a lot of points to such players .

eg - Steph Curry .

3 . Consistent performers may fail in very odd matches (Just bad luck)

4 . Need to take Team's Defence rating and Offence Rating into account .

5 .Teams with strong defence and high profile matches end up with a little less points scored .

6. Weak teams should be identified and their data should be separated .

7. Need to regularly follow news to update team position in their defence ranking and attack ranking .

8. "Defensive duty" may seem very useful but it is very hard to find the data regarding this .

9 . The dataset has to be manually maintained and it is very tough to do as lot of games are played in NBA in a week .

Please feel free to contact via mail - pramod.y15@iiits.in for clarification/suggestion regarding the project .