**SportVU Data Explanation**

**Touches/Possession:**

[http://stats.nba.com/playerTrackingTouches.html?pageNo=1&rowsPerPage=25&SeasonType=Regular%20Season](http://stats.nba.com/playerTrackingTouches.html?pageNo=1&rowsPerPage=25&SeasonType=Regular Season)

**Javascript: http://stats.nba.com/js/data/sportvu/touchesData.js**

The number of times a player touches and possesses the ball, where those touches occur on the court, how long the player possessed the ball and the number of points, assists and turnovers that occur with the ball in his possession.

Available Stats:

*Front Court Touches per game: FCTpg* ***(Data key: FC\_TCH)***

**Passing:** [http://stats.nba.com/playerTrackingPassing.html?pageNo=1&rowsPerPage=25&SeasonType=Regular%20Season](http://stats.nba.com/playerTrackingPassing.html?pageNo=1&rowsPerPage=25&SeasonType=Regular Season)

**Javascript: http://stats.nba.com/js/data/sportvu/passingData.js**

Available stats:

*Assists per Game: ASTpg* ***AST***

*Passes per Game: PASSESpg* ***PASS***

*Free Throw Assists per Game: FTASTpg* ***AS\_TFT***

(recipient of foul must make 1 free throw, be fouled within 2 seconds/1 dribble)

*Secondary Assists per Game: SASTpg* ***AST\_SEC***

(primary assister must make pass within 2 seconds/1 dribble)

*Assist Opportunities per Game : ASSISTOPPpg* ***AST\_POT***

**Drives:** [http://stats.nba.com/playerTrackingDrives.html?pageNo=1&rowsPerPage=25&SeasonType=Regular%20Season](http://stats.nba.com/playerTrackingDrives.html?pageNo=1&rowsPerPage=25&SeasonType=Regular Season)

**Javascript:** **http://stats.nba.com/js/data/sportvu/drivesData.js**

Any touch that starts at least 20 feet of the hoop and is dribbled within 10 feet of the hoop and excludes fast breaks. Measures the total number of drives as well as the points, assists and shooting percentages on drives to the basket.

Available Stats:

*Drives per Game: DRIVESpg* ***DVS***

*Player PPG on Drives: PPpG* ***DPP***

*Team PPG on Drives: TPpG* ***DTP***

*FG% on Drives: DFG%pg* ***DFG\_PCT***

**Catch and Shoot:** [http://stats.nba.com/playerTrackingCatchShoot.html?pageNo=1&rowsPerPage=25&SeasonType=Regular%20Season](http://stats.nba.com/playerTrackingCatchShoot.html?pageNo=1&rowsPerPage=25&SeasonType=Regular Season)

**Javascript: http://stats.nba.com/js/data/sportvu/catchShootData.js**

Any jump shot outside of 10 feet where a player possessed the ball for 2 seconds or less and took no dribbles.

Available Stats:

*CS2FGApg* ***CSFGA***

*CS2FGMpg* ***CSFGM***

*CS3FGApg* ***CSFG3A***

*CS3FGMpg* ***CSFG3M***

*CSeFG%pg* ***CSEFG\_PCT***

**Pull Up:** [http://stats.nba.com/playerTrackingPullUp.html?pageNo=1&rowsPerPage=25&SeasonType=Regular%20Season](http://stats.nba.com/playerTrackingPullUp.html?pageNo=1&rowsPerPage=25&SeasonType=Regular Season)

**Javascript: http://stats.nba.com/js/data/sportvu/pullUpShootData.js**

Any jump shot outside 10 feet where a player took 1 or more dribbles before shooting.

Available Stats:

*PU2FGApg* ***PUFGA***

*PU2FGMpg* ***PUFGM***

*PU3FGApg* ***PUFG3A***

*PU3FGMpg* ***PUFG3M***

*PUeFG%pg* ***PUEFG\_PCT***

**Based on this data, we have a question: How many front-court possessions does an NBA player get, and how many points does that player generate from those possessions based on what they do with the ball?**

**A player can do one of FOUR things:**

1. Pass

a. Make a tertiary or greater pass

b. Attempt Assist

c. Attempt Secondary Assist

2. Shoot away from Basket (>10ft)

a. Catch and Shoot

b. Pull-Up

3. Shoot close to Basket (<10ft)

a. Drive and Pass

b. Drive and Shoot

Or, 4. Turn the ball over.

[Note:

This model will not account for turnovers, a ***horrendously***bad assumption, but the given Player Tracking Data on NBA does not have a TO stat. Thus, in order to append turnovers to each player’s statistics, a separate parsing of this data and merging into the python dictionary with each player’s stats is necessary. Given the time constraint of this project, I will overlook this for now.]

Thus, pgp (points generated per possession) will make a weighted calculation based on how often a player *attempts* each of the above things every game, and how often that player *succeeds* in doing these things every game, given how many possessions said player gets every game.

Here is the breakdown of the formula:

***Attempts at Points*** *= (pot. ast + shots att – to) [all stats pg]*

*Based on the four possibilities:*

*potential assists + (shot attempts away from basket) + shot attempts close to basket - to*

*=potential assists + (catch and shoot attempts + pull up attempts) + drive attempts*

*since drive attempts = drives made \* (100/fg%), and all drives are 2pts:*

*=potential assists + catch and shoot attempts + pull up attempts + [(drive points/2)\*(100/dfg%)]*

*In keys:*

***AP =*** *AST\_POT + (CSFGA + CSFG3A) + (PUFGA + PUFG3A) + (DPP/2)\*(100/DFG\_PCT)*

***Successful Attempts at Points*** *= (completed ast + shots made) [pg]*

*Based on the four possibilities:*

*assists + free throw assists + secondary assists(.5) + shots made away from basket + shots made close to basket*

*=assists + free throw assists + secondary assists(.5) + catch and shoot makes + pull up makes + drive points/2*

*In keys:*

***SAP =*** *AST + AS\_TFT + (AST\_SEC/2) + (CSFGM + CSFG3M) + (PUFGM + PUFG3M) + (DPP/2)*

***Points from Successful Attempts****= (points off assists + points off shots)/touches [pg]*

*assists\*2 + free throw assists\*1 + secondary assists(1/2)\*2 + catch and shoot makes\*2 + pull up makes\*2 + drive points*

*In keys:*

***PSA =*** *(AST\*2) + AS\_TFT + AST\_SEC + (CSFGM\*2 + CSFG3M\*3) + (PUFGM\*2 + PUFG3M\*3) + DPP*

Thus,

*ppg: Points from Successful Attempts \* (Successful Attempts at Points/Attempts at Points)*

***PGP = (PSA/FC\_TCH) \* (SAP/AP)*** [pts/touch]