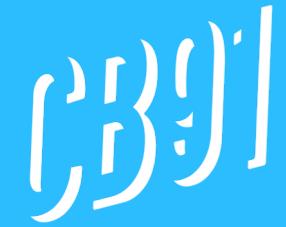


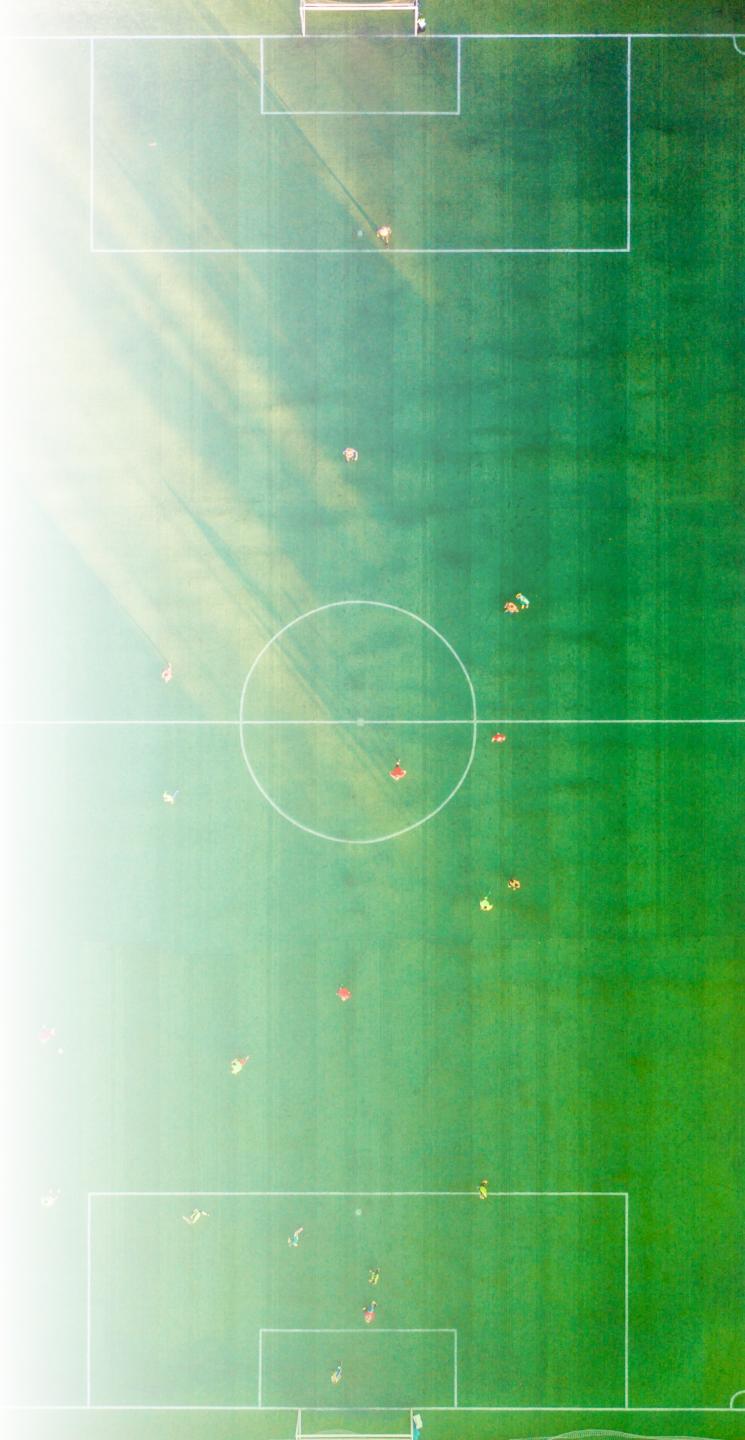
# Capstone Project

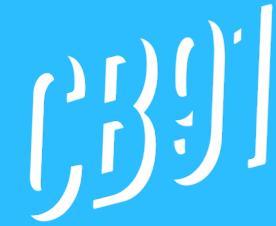
Analysing Fantasy  
Premier League  
Football



## Executive summary

- An introduction to FPL
- How can Data Science help?
- Where do FPL points come from?
- Differential players
- What can we do with the data?
  - Player 'importance'
  - Network analysis
  - Expected goals
  - Tableau dashboards
- Possible next steps





# An introduction to Fantasy Premier League

- Given a virtual budget of £100m, each 'manager' has to assemble a team of players, who score FPL points based on their performance in real life games
- Famous players who scored highly in previous seasons are more expensive
- Therefore, good FPL managers are those able to spot cheap, unknown players with the potential to score big





# What can data science do for FPL?

- Every football match generates a lot of data - both in terms of player performance and FPL manager decisions
- Managers can swap one player from their team every week to bring in a replacement (who may be in better form, or have an easier run of fixtures)
- The aim is to create a suite of tools that help managers make better picks throughout the season, based on the data

**Data Sources**

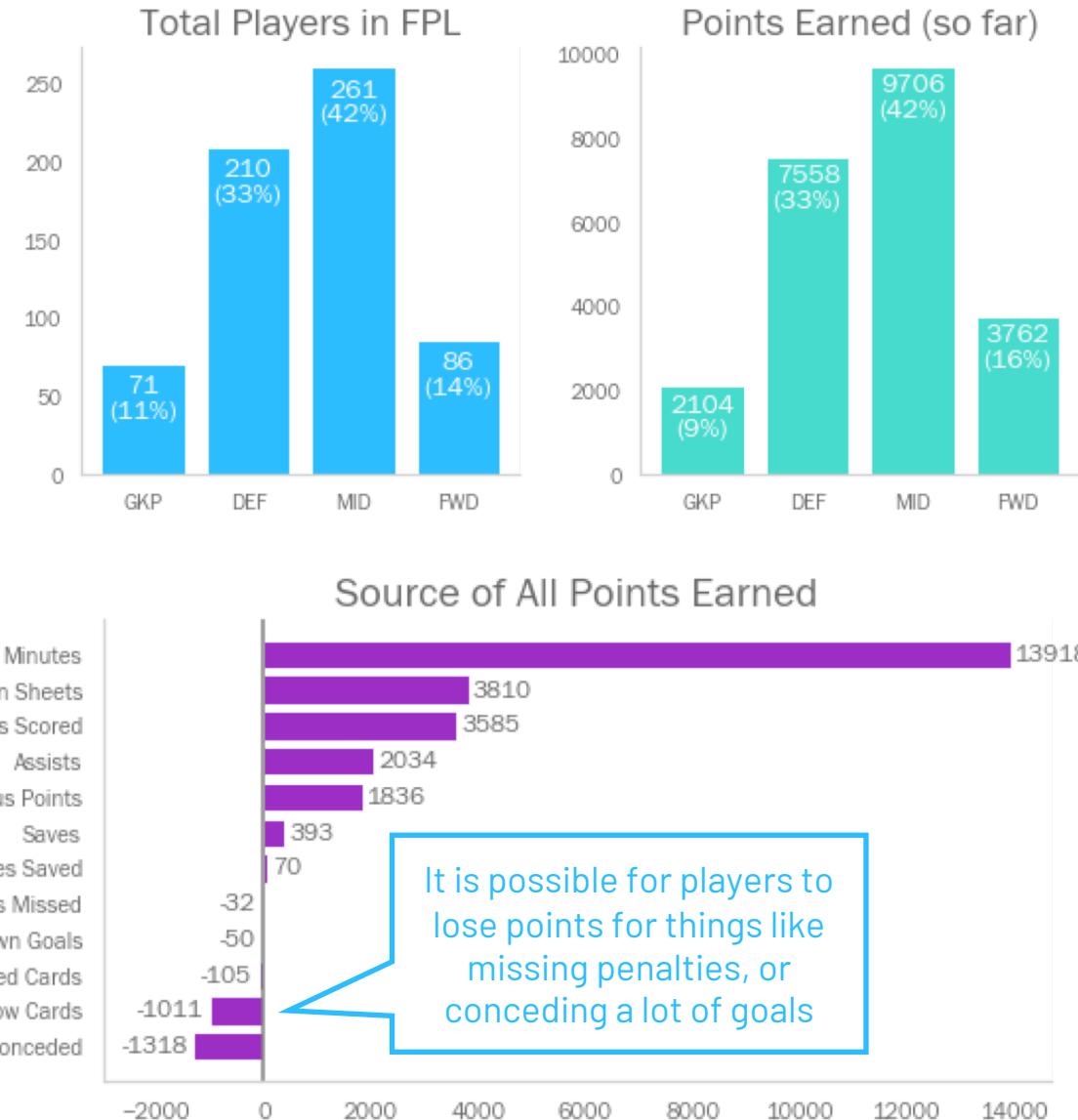
The diagram illustrates the data sources used for FPL analysis. It features two main sections: a stack of documents representing scraped text commentary and a red box representing the Premier League official API. The text commentary section shows multiple documents with a repeating pattern of player names and statistics. The API section shows a single red box with the Premier League logo and the text "Premier League".

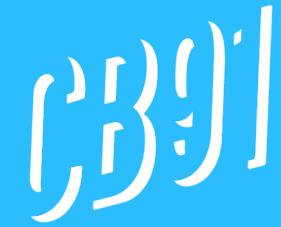
- Text commentary for every match scraped from the Premier League website
- 'Fantasy' data (e.g. FPL points, player transfers, etc.) from official API
- Combined, this gives a detailed view of every shot taken in every match, and an aggregate view of the decisions of each FPL manager



# Where do FPL points come from?

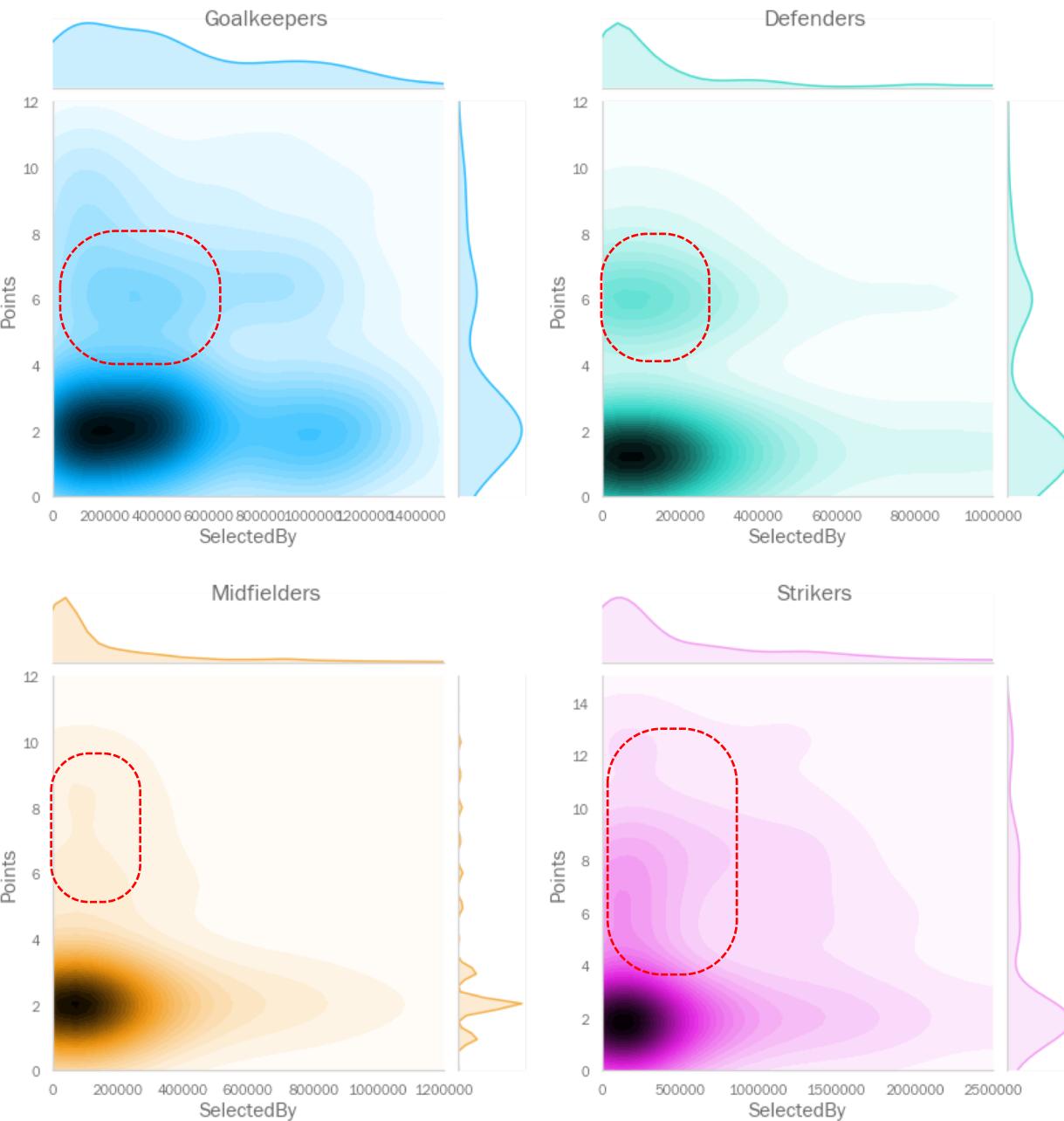
- The share of points earned by position reflects the number of players of each position
- More than half of FPL points are generated by 'Minutes Played', i.e. players simply being selected to play
- Keeping clean sheets and scoring goals are the most common ways to generate extra points – thus FPL managers need to be mindful of both attack and defence





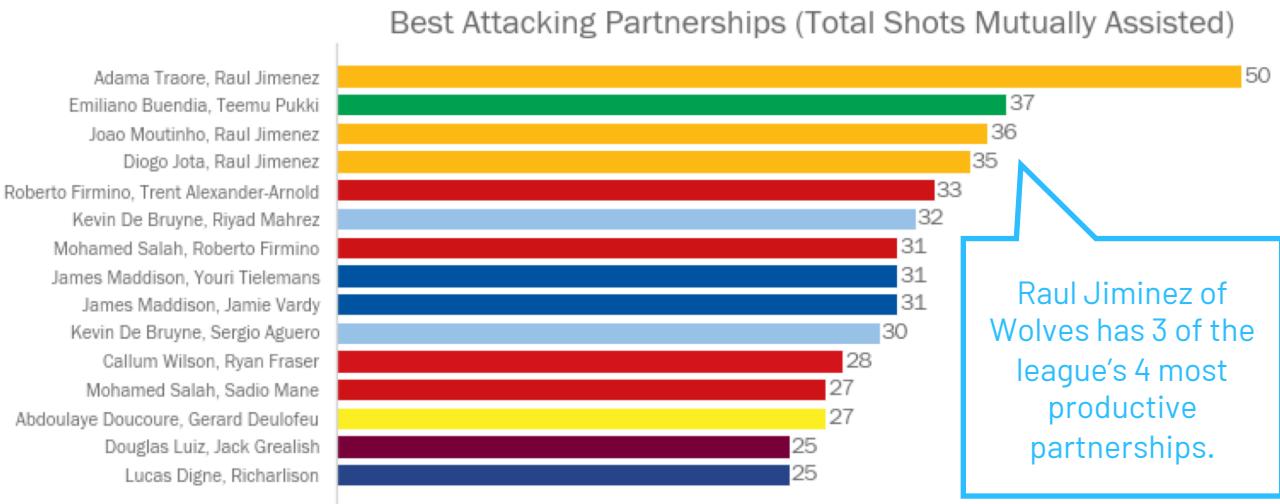
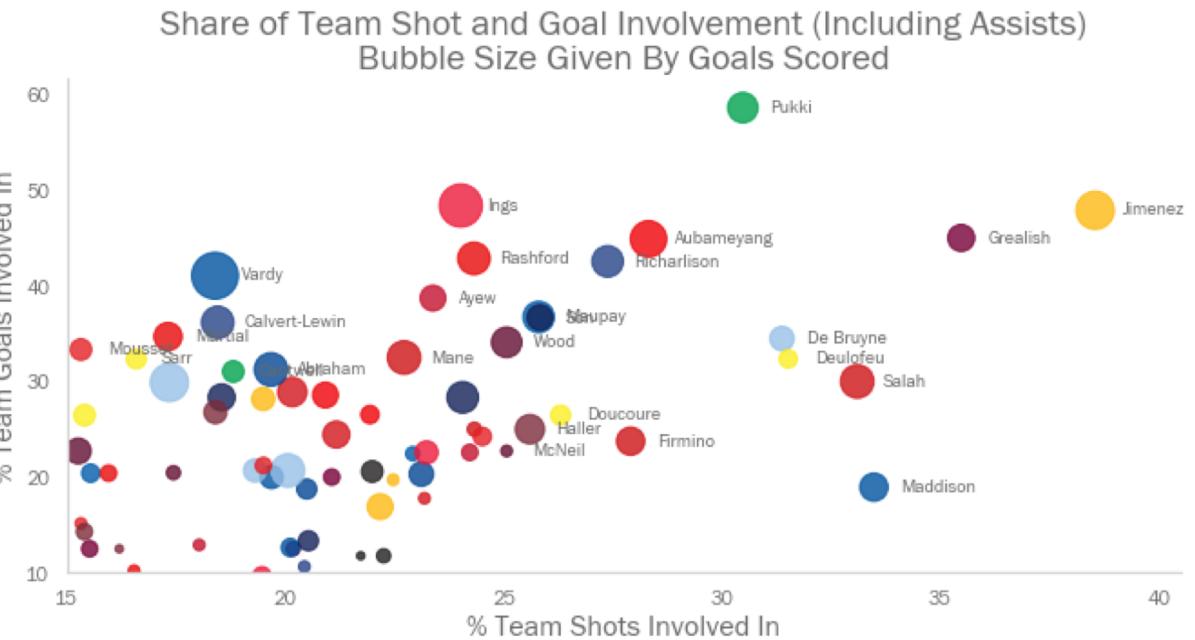
## Picking 'differentials'

- Differential players are those owned by a small number of FPL managers
- Consistently picking 'differentials' is key to FPL success – if you own a high-scoring player, this isn't overly advantageous if the same player is owned by 50% of managers
- Data suggests that there are such 'differential' players in the game (though they are in the minority)



# *Player importance*

- Picking ‘important’ players of less well known teams could be a good way to spot differentials
  - We can start to explore which players appear to be ‘intrinsic’ to their teams’ performances
  - How can we analyse this more rigorously?

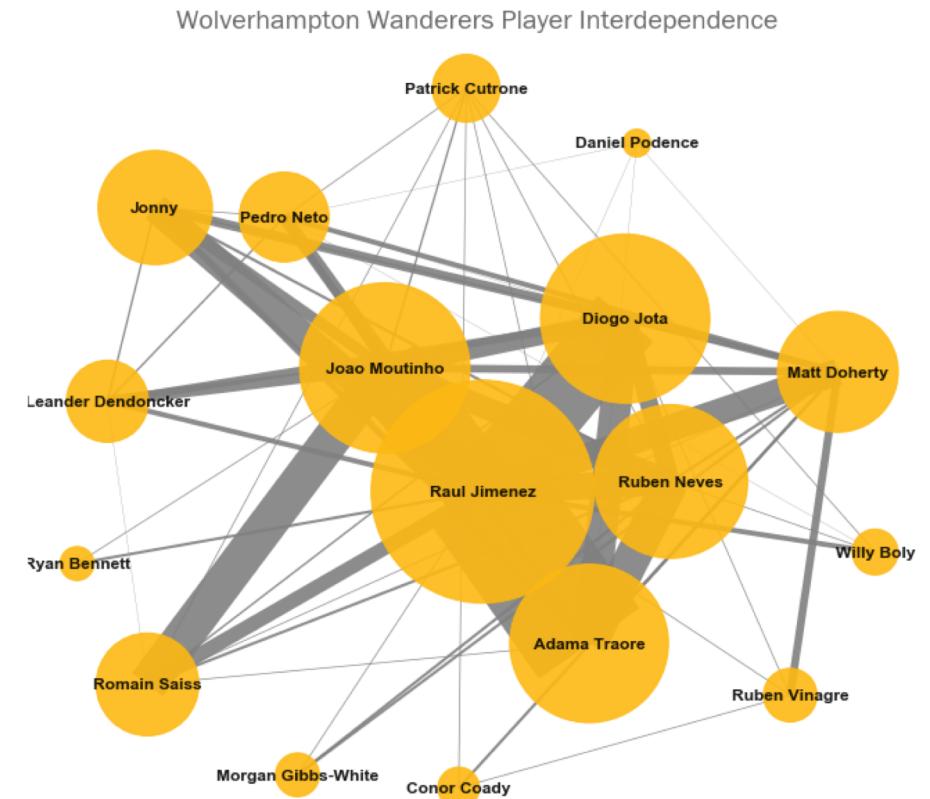
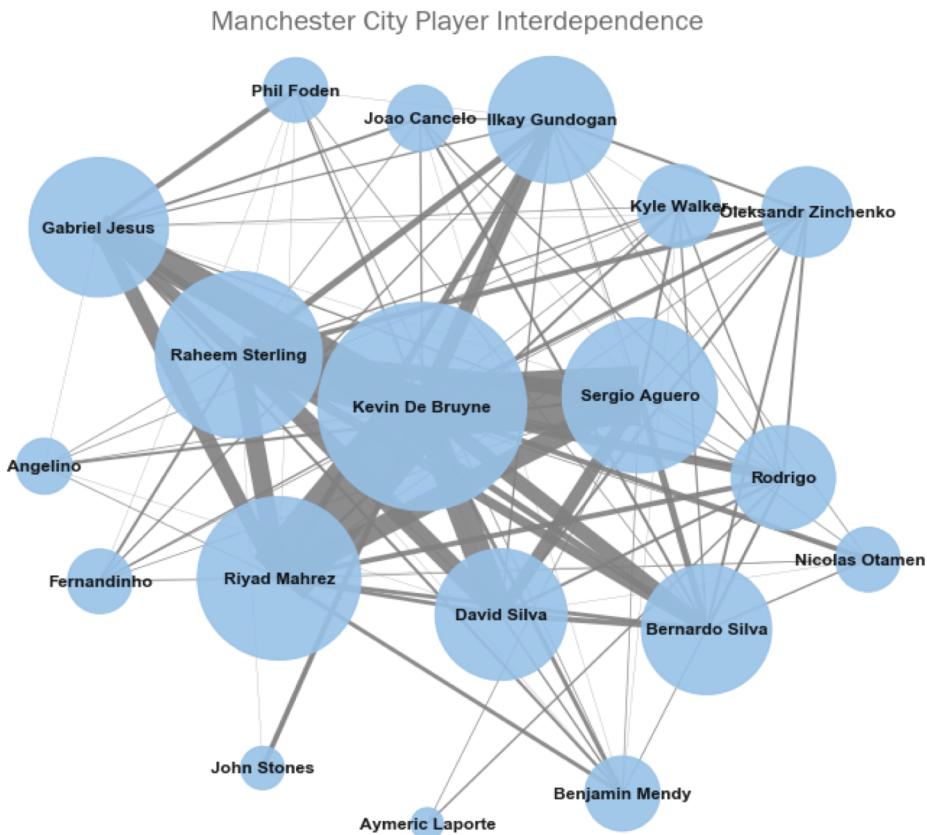


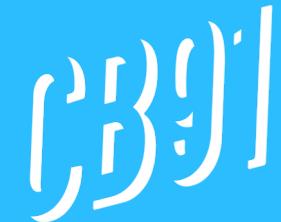
Raul Jiminez of Wolves has 3 of the league's 4 most productive partnerships.



# Team networks

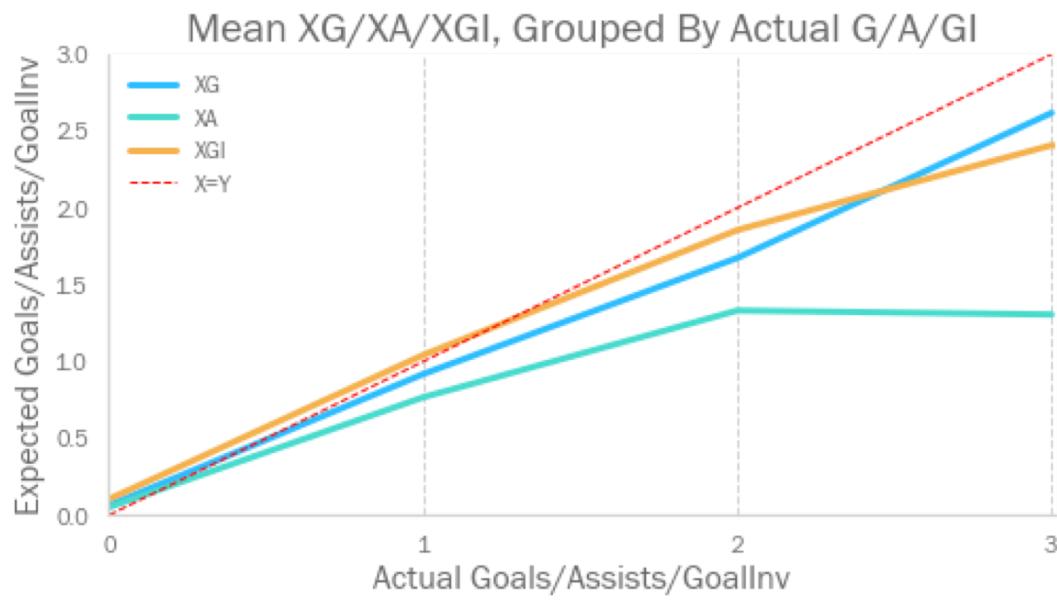
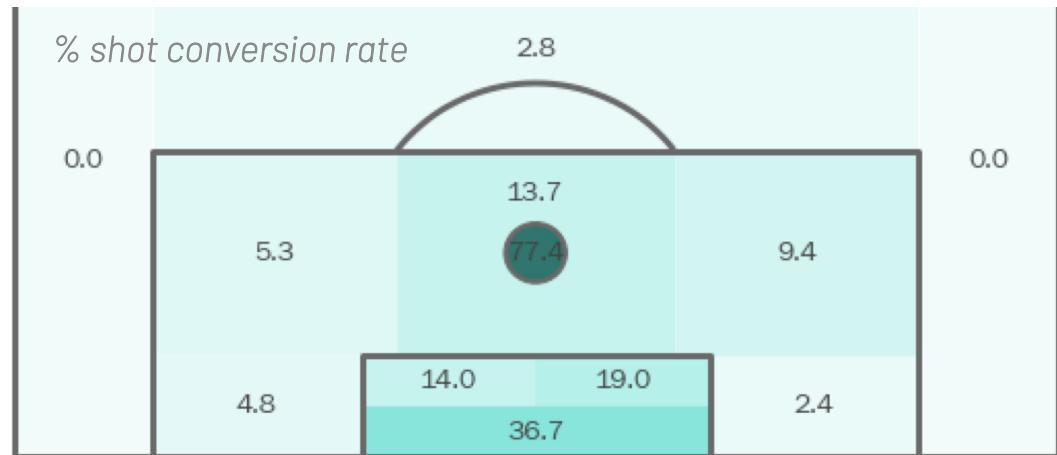
- We can think about teams like they were social networks. Then the strength of connection between two players can be given by number of times they've assisted each other's shots
- Then we can use 'betweenness' metrics to work out who the most 'enmeshed' (and thus, 'important') players are on a team by team basis





## Shot quality and 'expected goals'

- Can we remove some of the sport's intrinsic 'randomness' to help make our analysis more reliable?
- Having defined the different types of possible shots we can see the goal conversion rate of each
- We can then sum the expected conversion rates for shots that a player took in a match to give a grand 'Expected Goals'(XG)





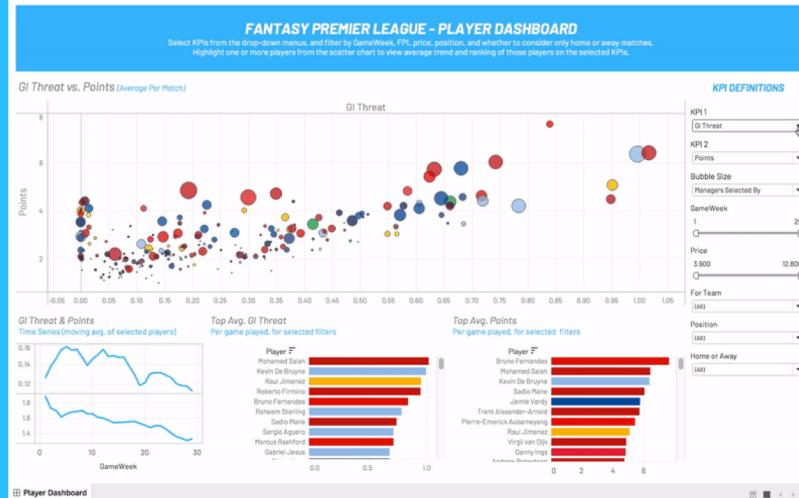
# A suite of tools for FPL managers...

## 1) SEASON SUMMARY



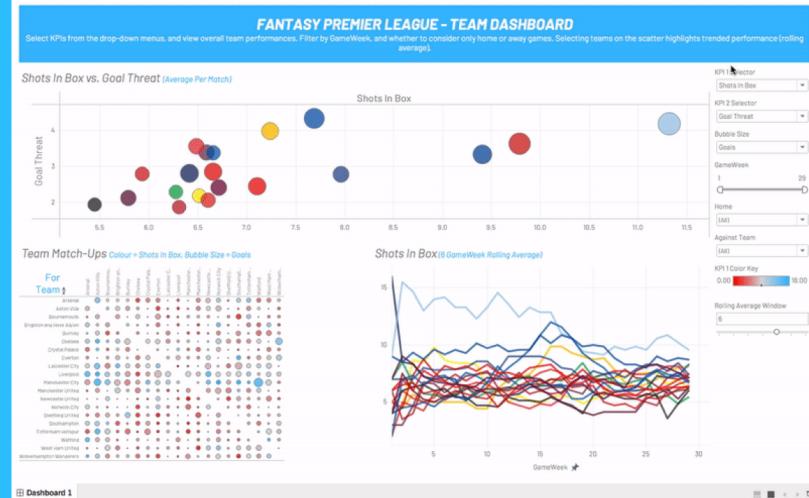
- Shows how players have progressed through the season so far (by position)
- Can be used to identify trends before they become obvious to every manager
- KPIs fully customisable

## 2) PLAYER DASHBOARD



- A fully customisable dashboard showing KPIs for each player
- Can filter performance based on player price, gameweek, and home/away matches
- View trends/rankings of players selected in the scatter plot

## 3) TEAM DASHBOARD



- A dashboard showing team-level performance across KPIs
- All views and KPIs are fully customisable and can be filtered as required
- Gives a view of how teams have played against each other



## Possible next steps

There is further work that could be done using the gathered data:

- Create further dashboards (e.g. using the shot level data)
- Spend further time working on feature engineering to create predictive models
- Get more data from previous seasons to strengthen the dataset





# Thank you for your time

Further detail on the model, and additional analysis of the dataset is included in further pages