Soccer: The Team Game

How Team Performance Impacts Player Statistics, and the Impact of Context in Data Analysis
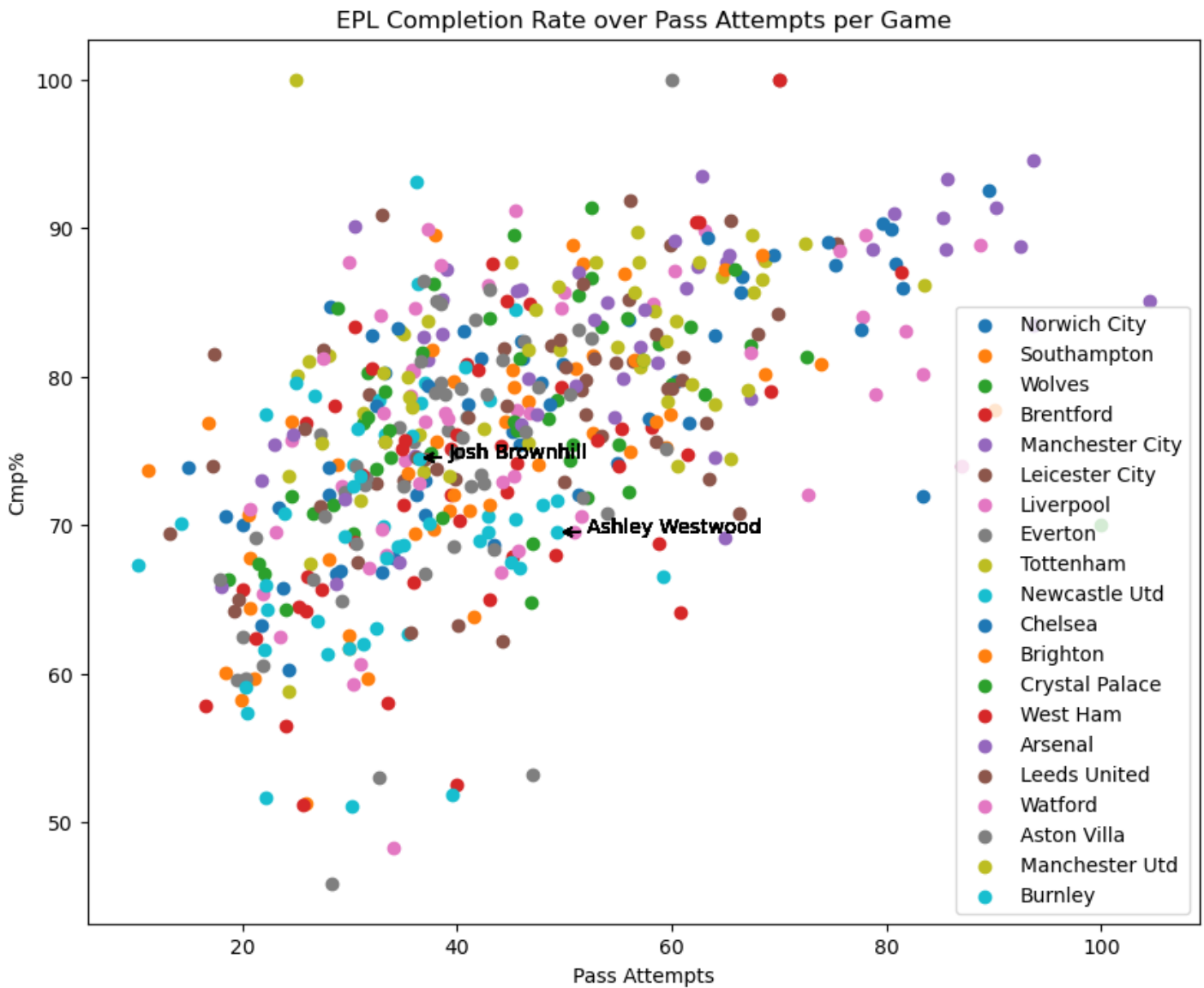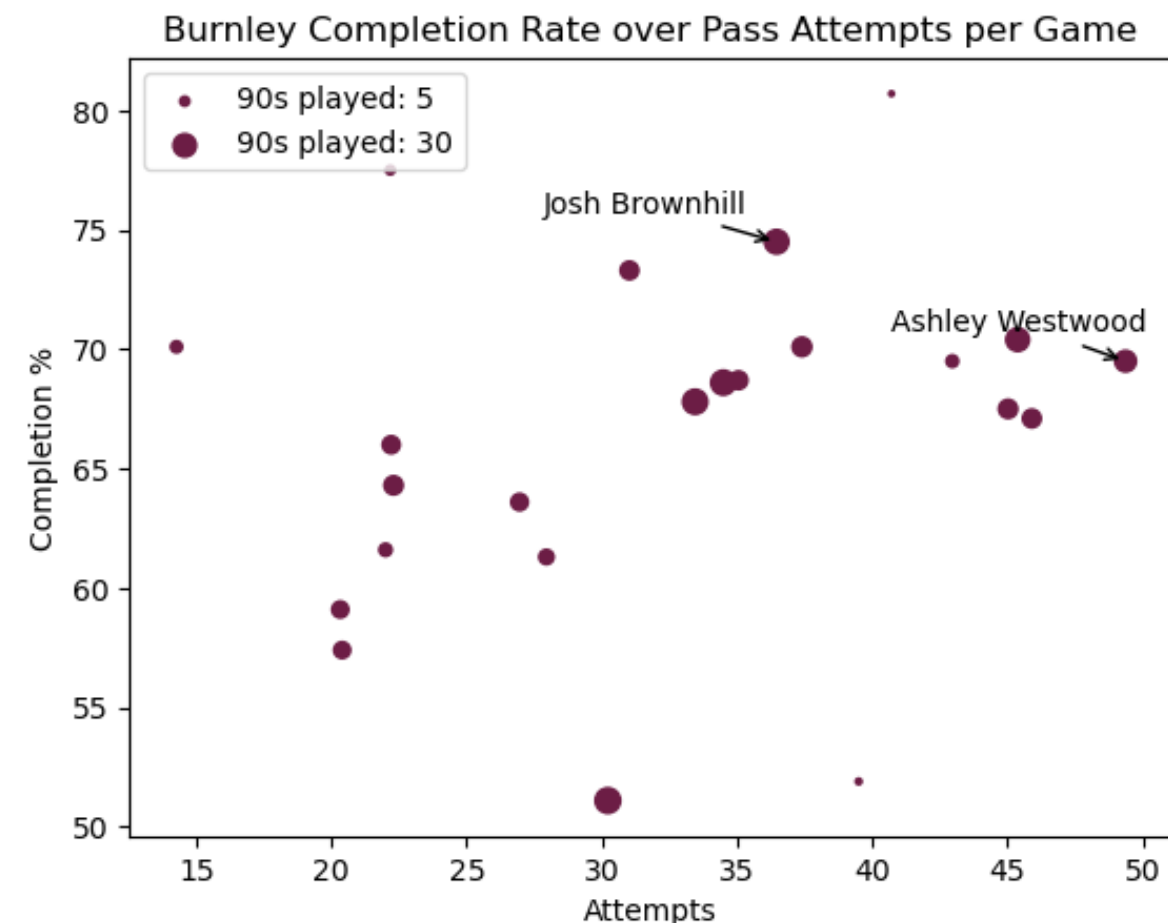
Overview

The ability of data to tell us something interesting depends on context -- in the case of soccer, some of the most important contexts are the team you're on, and what position you play. This project takes data from Premier League players from the 2021-2022 to show how raw data can be used to mislead, and how data is most useful when taking into account context. This project attempts to show the variety of ways simple datasets can be classified and analyzed in order to extract more meaningful results from the data.
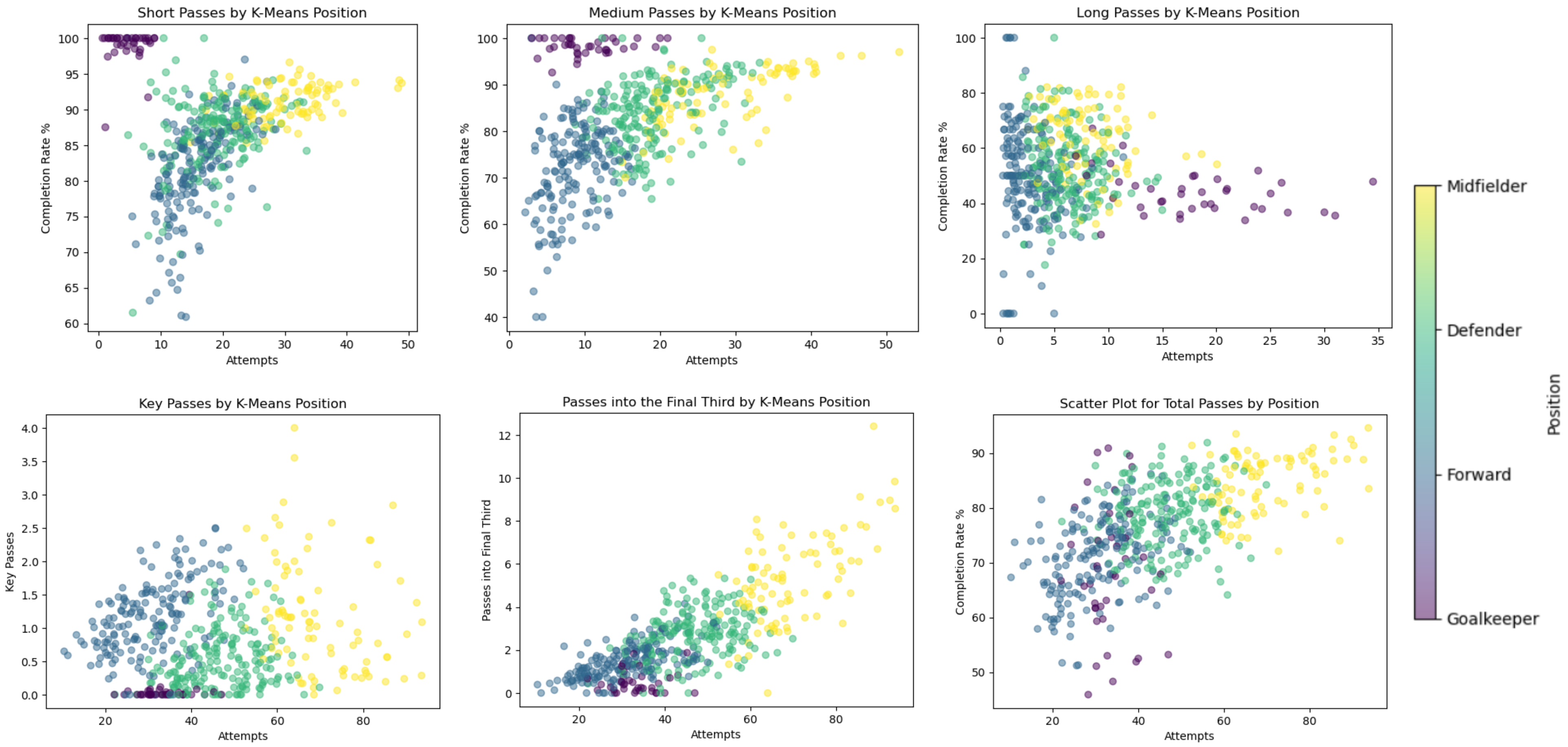
League Statistics

2021-2022	
1	Manchester City
2	Liverpool
3	Chelsea
4	Tottenham Hotspur
5	Arsenal
6	Manchester United
7	West Ham United
8	Leicester City
9	Brighton & Hove Albion
10	Wolverhampton Wanderers
11	Newcastle United
12	Crystal Palace
13	Brentford
14	Aston Villa
15	Southampton
16	Everton
17	Leeds United
18	Burnley
19	Watford
20	Norwich City

Team	Average Attempted Passes Per Player Per Game	Max Avg Attempts per Game
Manchester City	65.22	104.44
Chelsea	59.38	89.59
Liverpool	58.78	88.71
Tottenham	49.81	72.39
Leicester City	48.85	75.43
Brighton	48.45	90.00
Arsenal	46.90	67.39
West Ham	46.75	81.35
Wolves	46.45	100.00
Manchester Utd	46.37	83.46
Leeds United	43.92	66.25
Crystal Palace	43.32	72.56
Aston Villa	41.06	60.00
Brentford	37.89	61.44
Norwich City	37.26	60.34
Southampton	36.11	59.86
Watford	35.75	51.60
Everton	34.66	54.00
Newcastle Utd	34.63	59.17
Burnley	32.41	49.37

Analytics

- Player passing values show high variation based on teams and positions
- Finding similar players changes player valuation by comparison
- Less balanced passing roles on teams that pass more
- Little to no correlation between completion and attempts

Burnley Completion Rate over Pass Attempts per Game

EPL Completion Rate over Pass Attempts per Game

Positioning: How Position Affects Types of Passing

Short Passes by K-Means Position

Medium Passes by K-Means Position

Long Passes by K-Means Position

Key Passes by K-Means Position

Passes into the Final Third by K-Means Position

Scatter Plot for Total Passes by Position

Further Considerations

- How passing amount correlates to style of play
- Classifying players based on passing styles
- Scaling passing to normalize team passing volumes
- Scoring players on passing valuations
- Player passing progressions year-over-year

Cluster Valuations

Cluster	0	1	2	3
GK	39	0	2	0
DF	0	15	122	43
MF	0	49	62	44
FW	0	108	1	2

References

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