

Green Bay Packers Defense Analysis

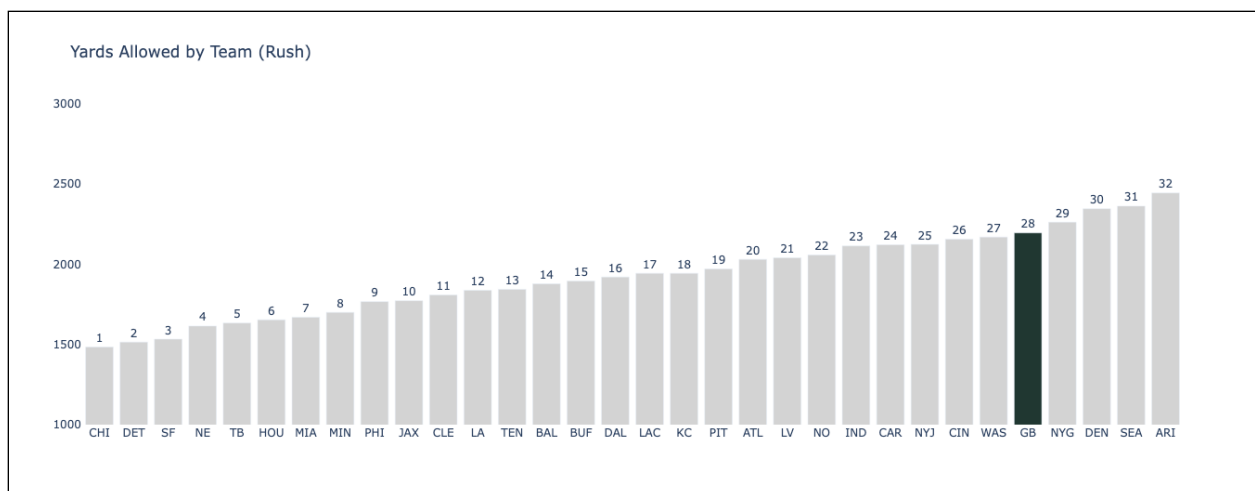
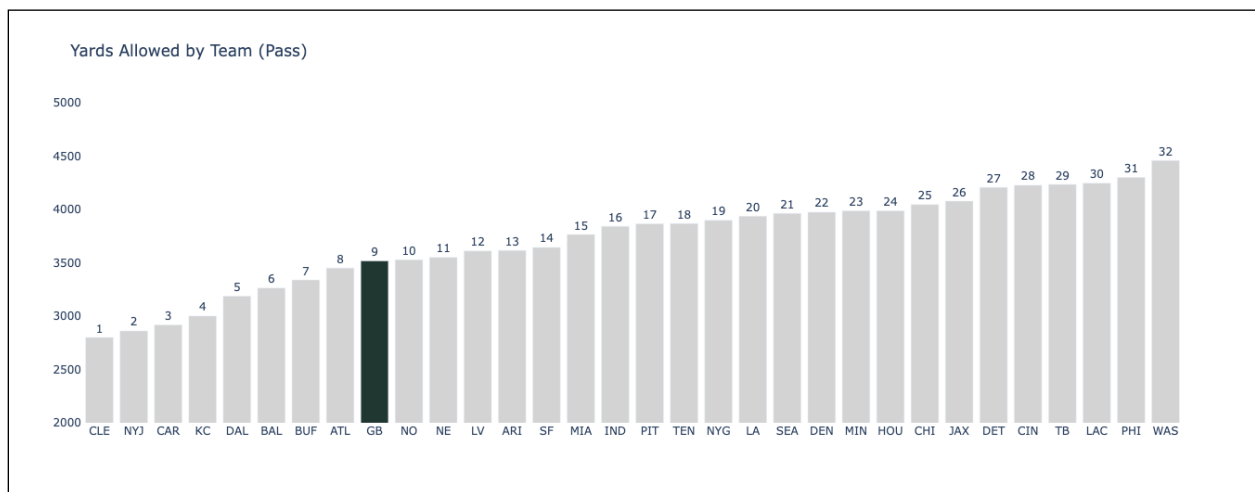
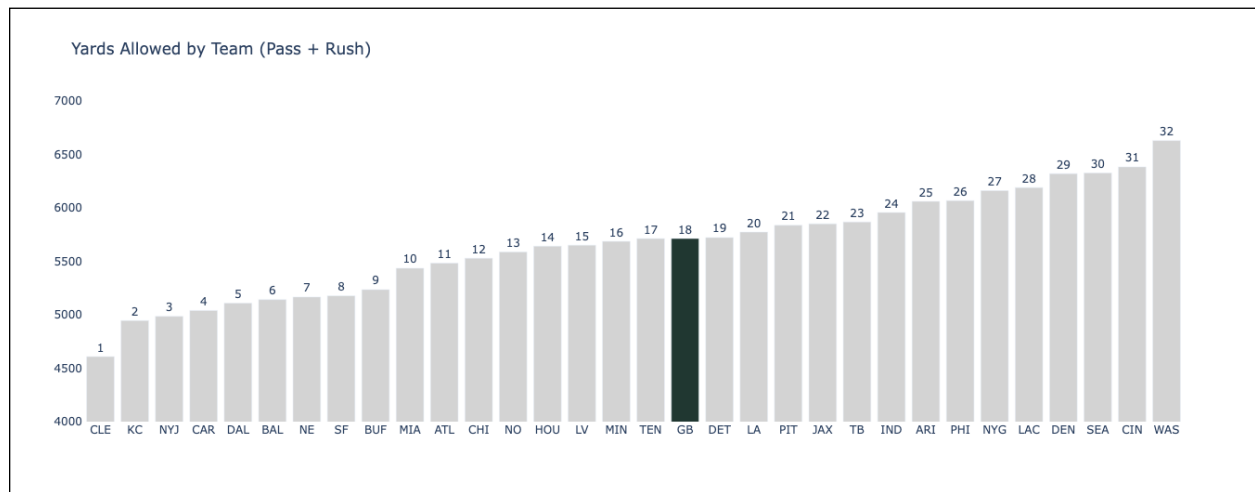
Focused on Run Defense

Jihan Song

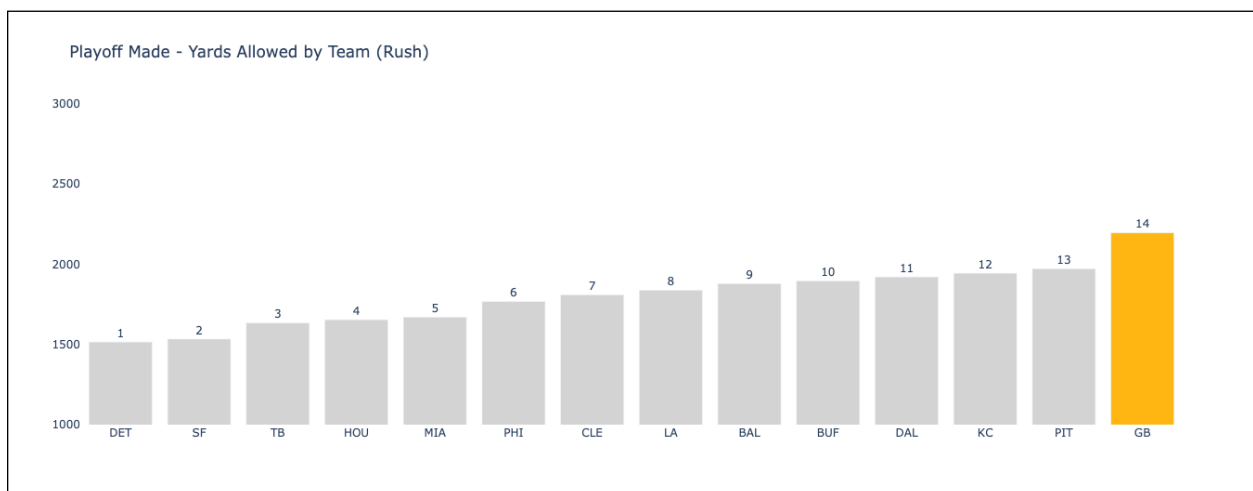
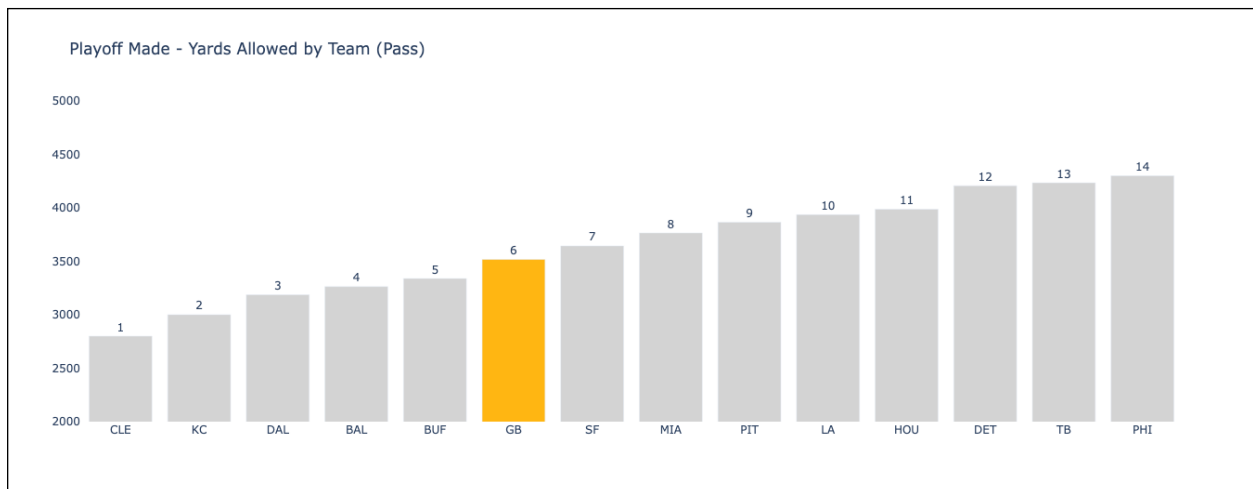
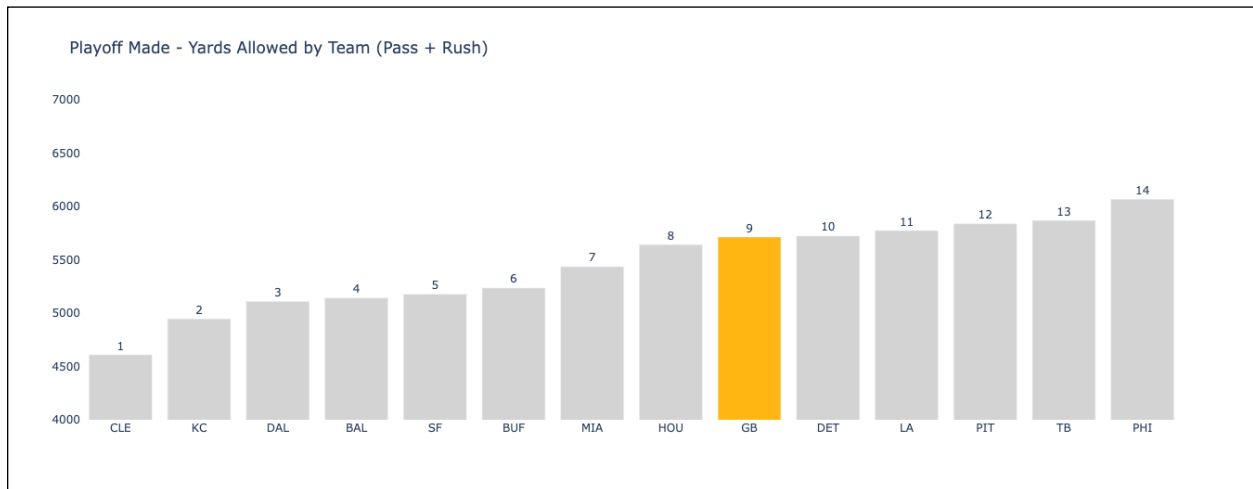
May 23, 2024

1. Defense Overview

- All - Yards Allowed by Team



- Playoff - Yards Allowed by Team



Overall, The Green Bay Packers Defense ranked (yds):

- pass + rush: 18/32 (5713 yds)
- pass : 9/32(3517 yds)
- **rush: 28/32 (2196 yds)**

Among teams that made the playoff, The Green Bay Packers Defense ranked:

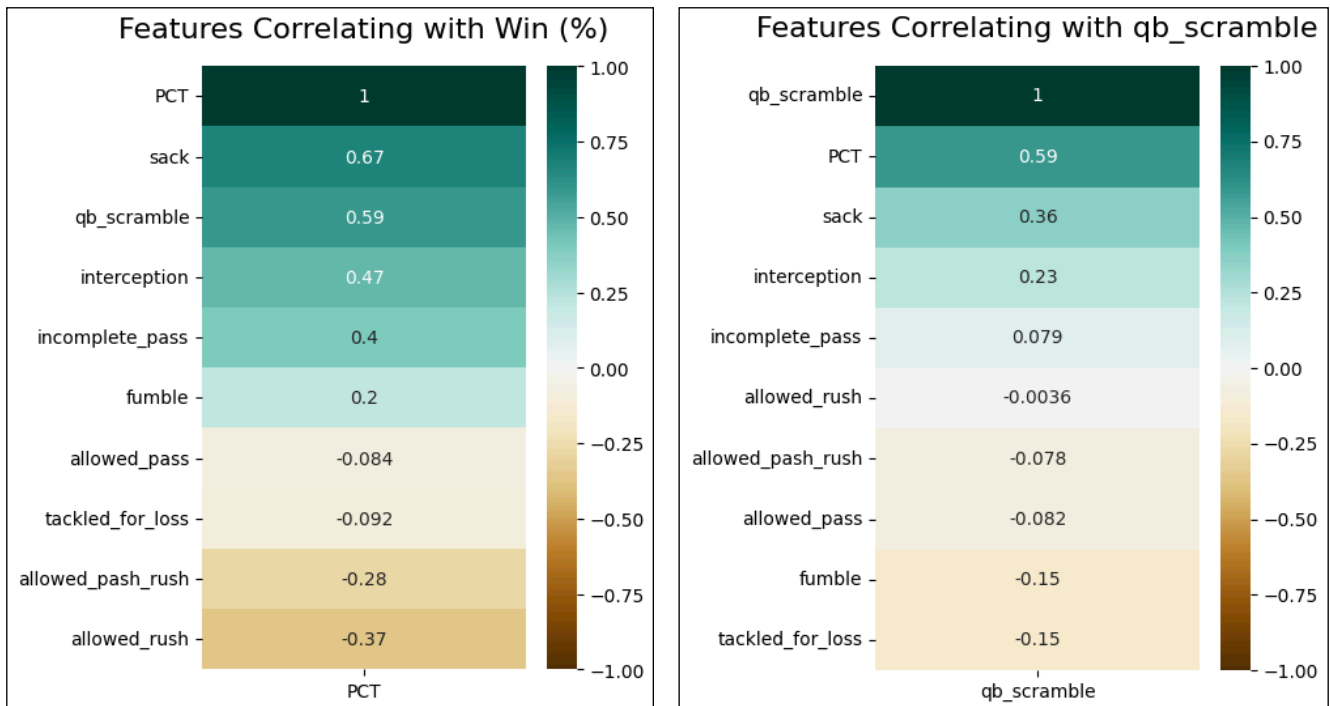
- pass + rush: 9/14
- pass: 6/14
- **rush: 14/14**

The Green Bay Packers struggled with its run defense. The reasons could be:

- 3-4 defense - drop linebackers into the zone to prevent short-mid passes allowed more rushing yards
- lack of individual skills - missed tackles, wrong execution, etc

Before testing those hypotheses, verifying if the run defense is crucial in winning games is important. If 3-4 drop-back linebackers successfully led to incomplete passes or QB scramble, which in turn became a loss of yards, being more "aggressive" is not quite the solution.

2. Correlation

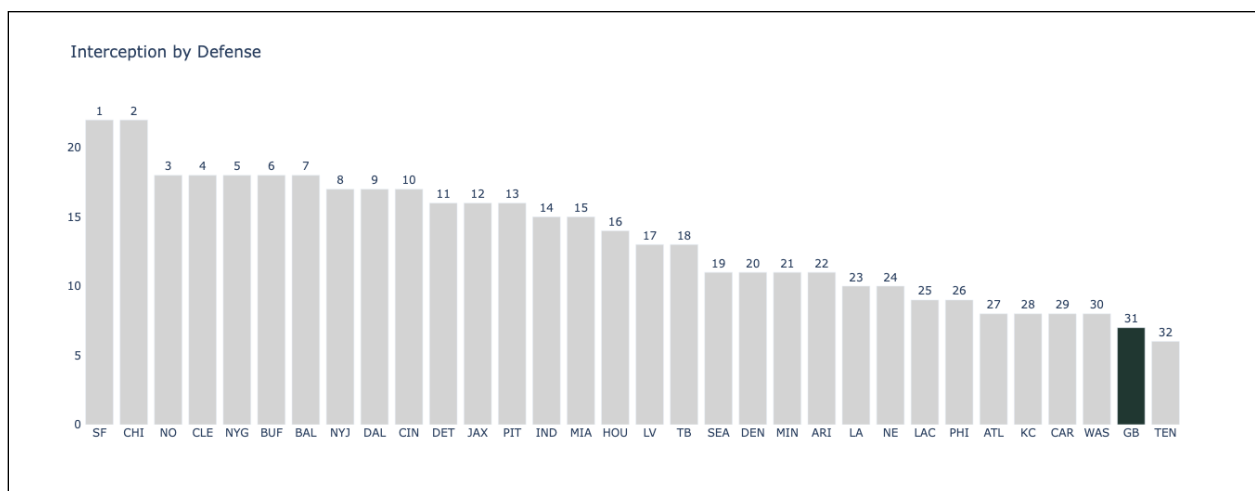
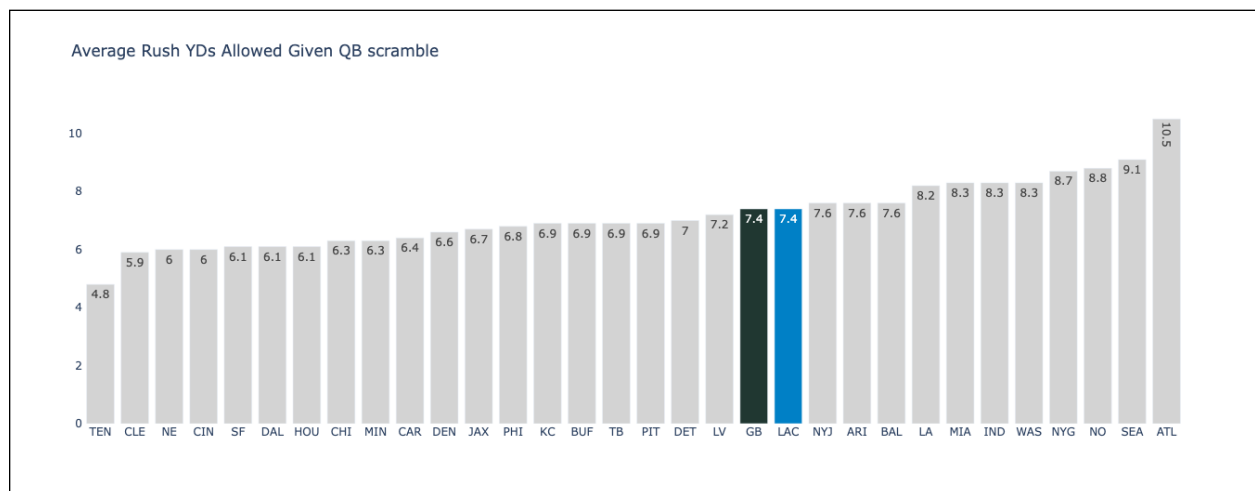
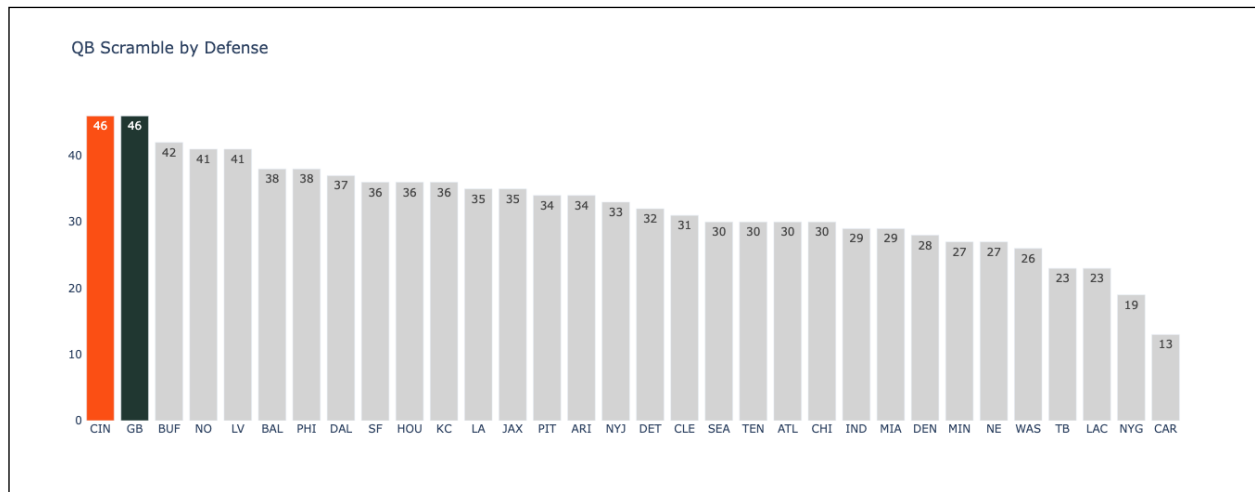


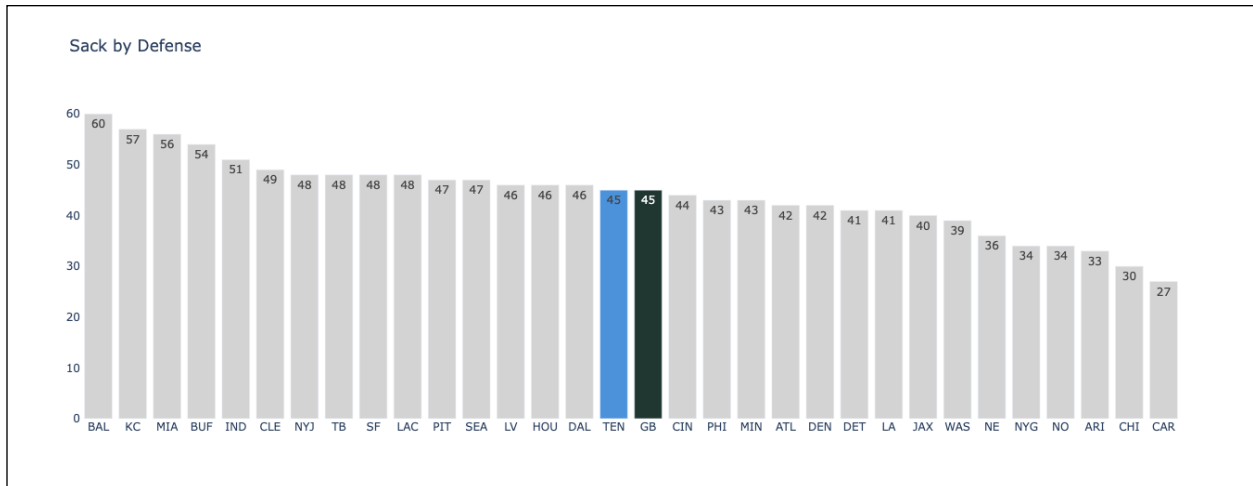
Overall, the defense causing direct impact on the quarterback - **sack (0.67)** & **QB scramble (0.59)** - and **interception (0.47)** had moderate to strong correlation with win. However, QB scramble had low to no correlation with interception and incomplete passes, so it is hard to argue quarterback pressure indicates a win.

Among allowed pass + rush, pass only, and rush only, **allowed rush** had the highest correlation with **loss** (-0.37). Even though the magnitude is small, it is noteworthy that allowed rush is a fair indicator of losing the game compared to passing or passing + rushing.

3. Packers Defense in Depth

- Quarterback Pressure Focused



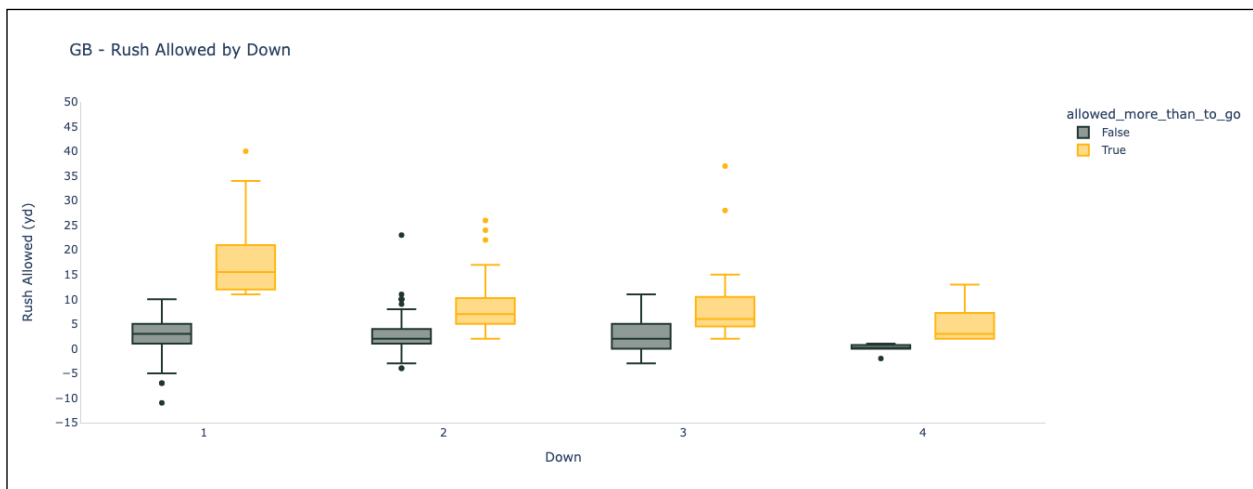
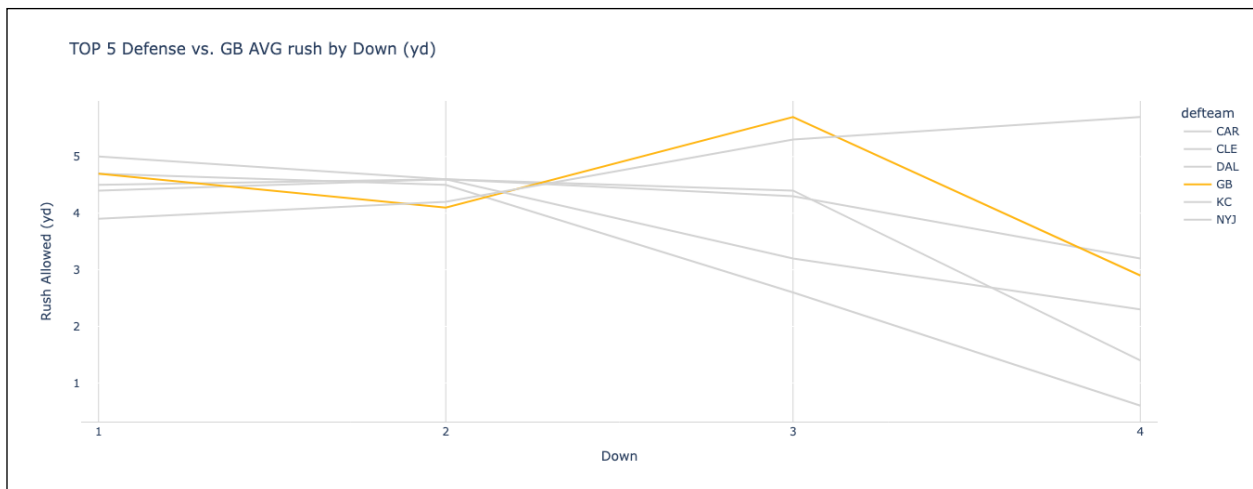
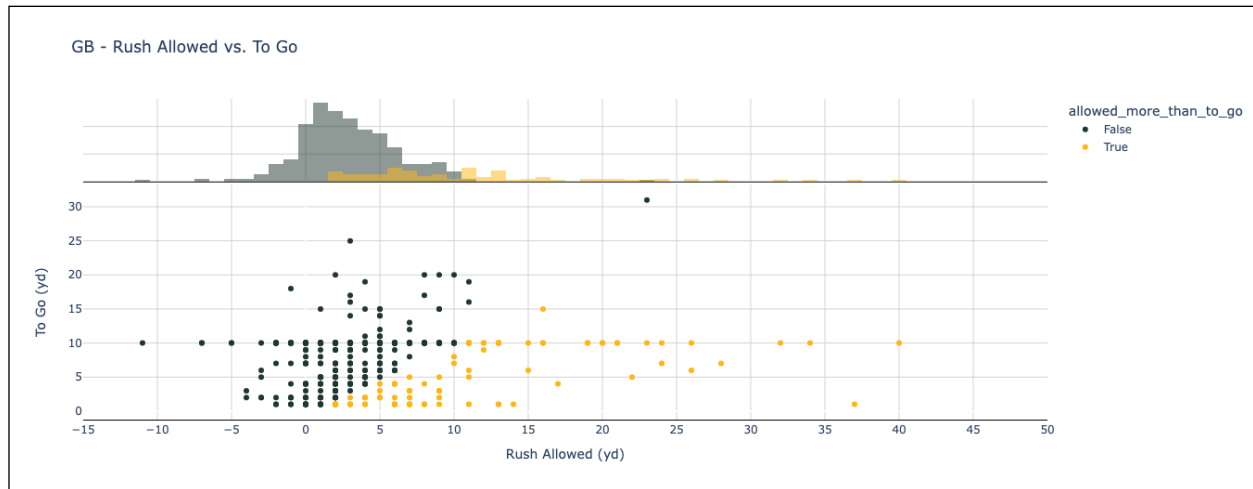


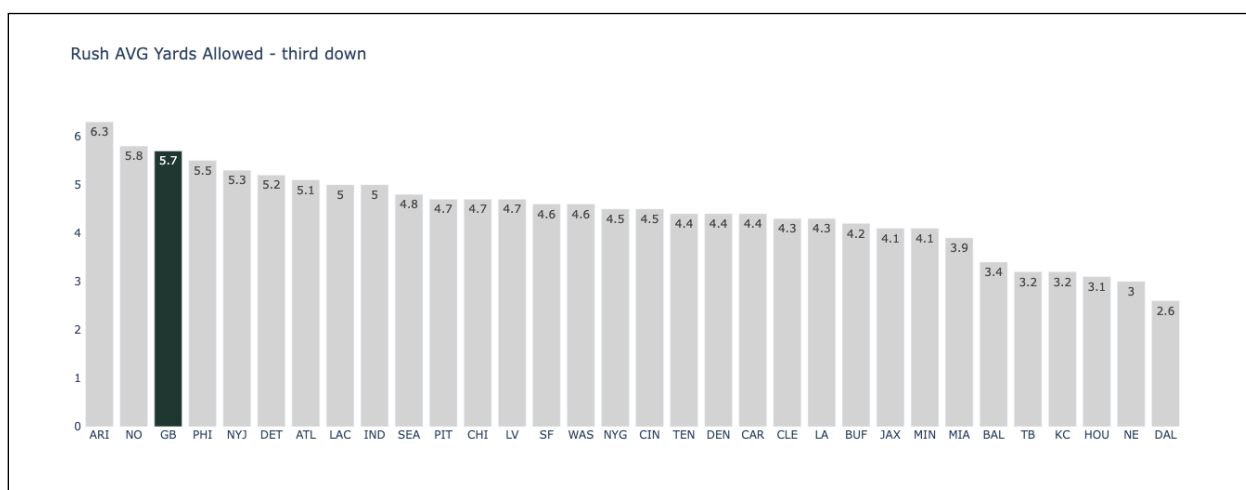
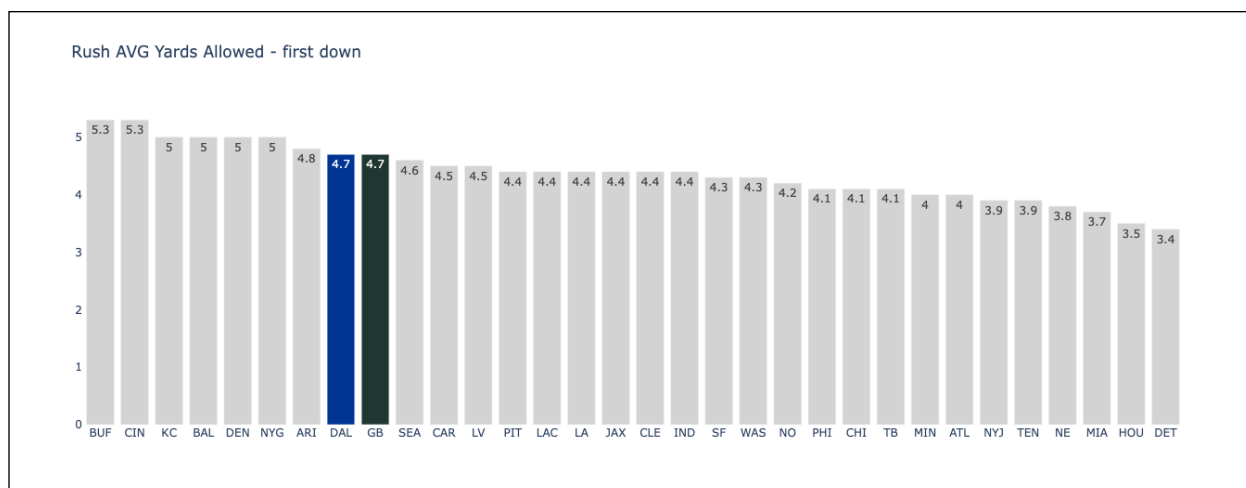
Defense Rank by Green Bay (number):

- QB Scramble: T-1/32 (46)
- AVG Rush Yards Allowed Given QB scramble: T-20/32 (7.4 yds)
- Interception: 31/32 (7)
- Sack: T-16/32(45)

The Green Bay Packers Defense did a phenomenal job in bringing pressure to the quarterback. They ranked **#1** making the opponent **quarterback scramble**. *However, the pressure did not lead to positive results.* First, **Sack** was just about **average**. Second, **Interception** was almost the **lowest** in the league. Third, the average **rushing yards** allowed given the QB scramble was **below average**. These statistics indicate that the Green Bay Packers Defense could not "seal the deal" after putting initial pressure on QB.

- Break down by Down



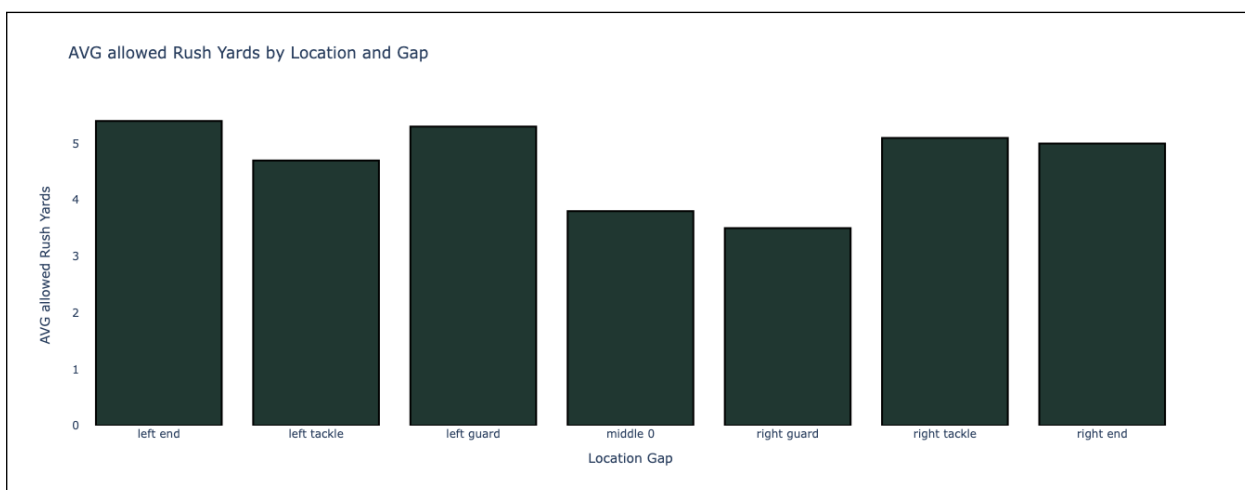
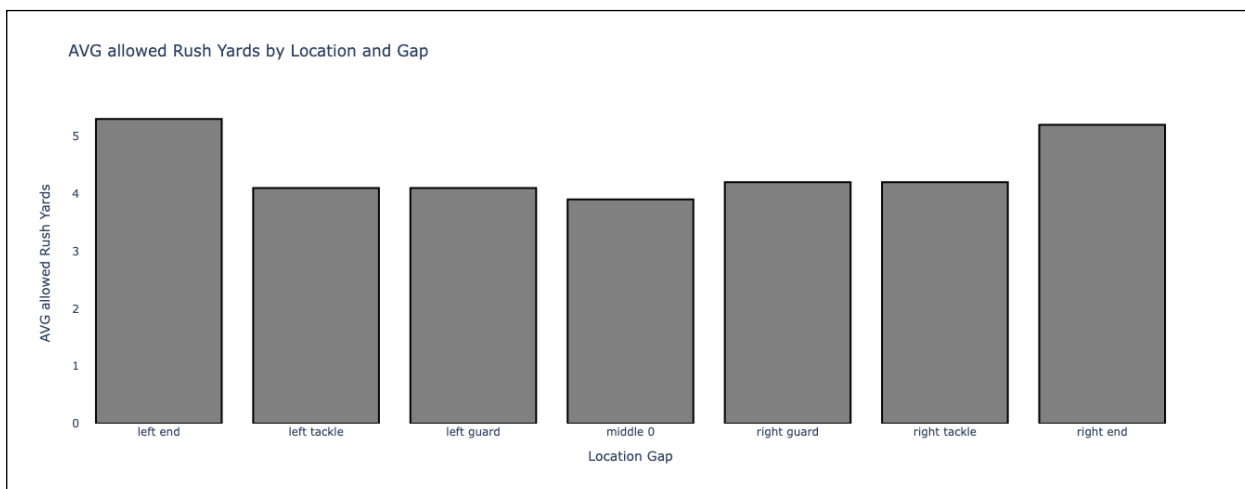


From the graphs and table, we could gain three insights:

- Packers Run Defense allowed too many yards on first down (T-8/32, 4.7 yds)
- Packers Run Defense allowed even more yards on third down (3/32, 5.7 yds)
- When allowed more than yards to go, the Packers Defense lost big (long tail on first down yards allowed from box plot)

The results could be, again, from 3-4 defense structure and seat back for the first and third down situation. Even with 3-4 defense, one can run good run defense. However, anticipating a passing game on first and third down (or by being more "conservative"), the defense was not able to make a quick first hit.

- Weak/Strong Spot on Run Defense



Unlike the general trend, the Packers allowed run through the gap by left guard and right tackle. The trend shows higher average yards allowed by the left side (on offense view).

4. Summary

Overall, the Green Bay Packers Run defense could develop by:

- Seal the deal: after bringing the pressure on the QB, the play should lead to more sacks, yards lost, or incomplete.
- Aggressive on first and third down: instead of sitting back linebackers to stop the short to mid passing game, utilize them to bring faster initial contact and let them help edges to complete their sacks.
- Close the Gap by left guard and right tackle (on Offense view): using 4-3 might help in this case. With more linemen, the defense can win the leverage more easily and close the gap early.

If there were more data such as the time it took for a defensive team to complete a tackle, the analysis would be more sound.

5. Data Used

From NFL 2023-24 play-by-play data, essential columns such as defense team, fumble, interception, etc were selected for the analysis. The original dataset could be found from:

[https://github.com/JihanCalvinSong/GreenBayPackers/blob/main/
play_by_play_2023.csv](https://github.com/JihanCalvinSong/GreenBayPackers/blob/main/play_by_play_2023.csv)

[https://github.com/JihanCalvinSong/GreenBayPackers/blob/main/
nfl_teams.csv](https://github.com/JihanCalvinSong/GreenBayPackers/blob/main/nfl_teams.csv)