

Predicting NFL Records

This is the year. Your team had a nice draft, last year's rookies showed improvement, and you may have even picked up a free agent or two. Expectations are through the roof. Your team should contend for the Super Bowl, or at least make the playoffs. Well, unless you're a Lions fan. Years of losing has taught us better.

But the NFL is a zero-sum game: One team's improvement is another team's loss. While fans may ignore this inconvenient truth, data does not. So, before you get that [Super Bowl tattoo](#), let's see what the data says.

The projected win totals listed below are based on an [Ordinary Least Squares regression](#) of [Madden ratings](#) from the previous five seasons. When tested on last year's NFL standings, the model produced a [root mean square error \(RMSE\)](#) of 2.5, which is considerably more accurate than [FiveThirtyEight](#) (2.94) and [USAToday's](#) (3.16) 2016 pre-season predictions.

2017 OLS Predictions



Teams	Predicted Wins
Patriots	11.81
Chargers	8.97
Raiders	8.89
Steelers	8.78
Broncos	8.66
Chiefs	8.63
Ravens	8.37
Colts	8.32
Dolphins	8.25
Bengals	7.99
Titans	7.80
Jaguars	7.33
Bills	6.55
Texans	6.24
Browns	5.17
Jets	4.52

Team	Predicted Wins
Seahawks	11.05
Falcons	10.54
Packers	9.74
Panthers	9.19
Vikings	8.44
Redskins	8.38
Saints	8.30
Cowboys	8.14
Giants	7.90
Cardinals	7.90
Lions	7.69
Eagles	7.10
Buccaneers	7.05
Bears	6.96
Rams	5.91
49ers	5.42

Unfortunately, the OLS model cannot account for the inevitable season altering injuries. To account for these changes, the dashboard below provides updated week-by-week predictions. These predictions are based on a combination of logistic regressions and simulations that account for Madden ratings, injuries, and teams' point differentials. With respective RMSEs of .467 and .47, the model below is slightly better than FiveThirtyEight's 2016 game predictions.

The dashboard below includes the following information:

- **Position Rating (+/-) vs NFL Average** – Team position ratings compared to the NFL average.

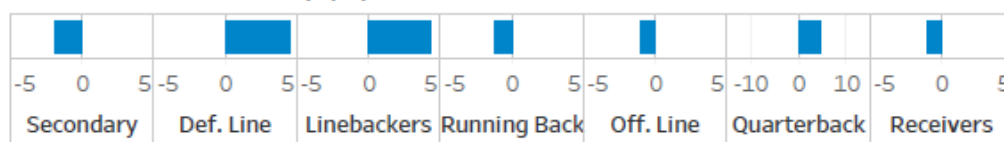
- **Postseason Probabilities** – Probability of making the playoffs, winning the division, and attaining home field advantage based on active starters' Madden ratings.
- **Projected Win Totals** – Histogram of win totals based on 1000 simulations of the 2017 regular season.
- **Game Odds** – Probability of winning each regular season game.

(Online Tableau Dashboard:

https://public.tableau.com/shared/26ZFN62W8?:display_count=yes

Would like to embed on the blog page.)

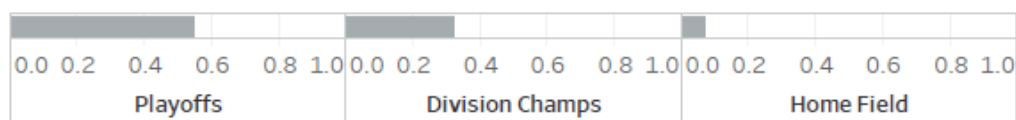
Position Rating (+/-) vs NFL Average



Team
Panthers



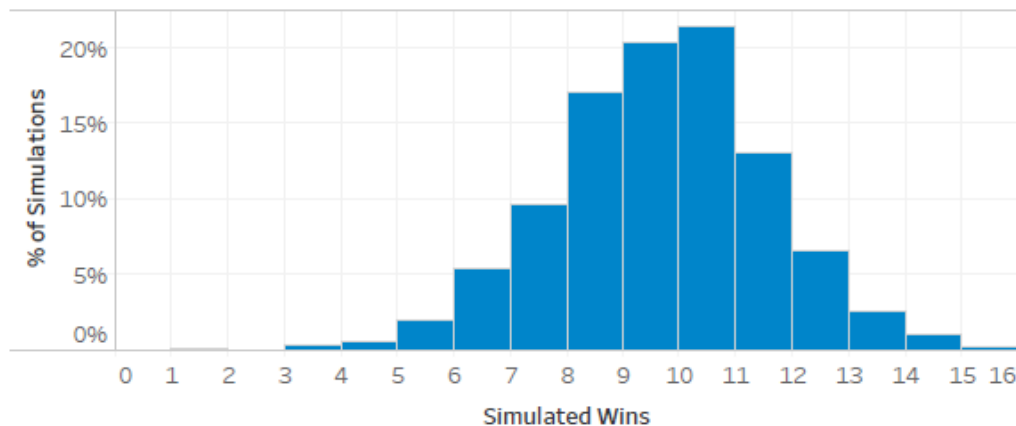
Postseason Probabilities



Game Odds

Week	
1	@49ers 70%
2	Bills 74%
3	Saints 66%
4	@Patriots 23%
5	@Lions 51%
6	Eagles 68%
7	@Bears 57%
8	@Buccaners 54%
9	Falcons 49%
10	Dolphins 55%

Projected Win Total



Interesting tidbits from this model include:

- Barring injury, the Patriots and Seahawks are essentially shoo-ins to make the playoffs.
- The Jets, conversely, are more likely to go winless (1.8 percent) than make the playoffs (.2 percent).
- The Chargers and Panthers are primed for bounce back seasons, with both teams having a 55 percent chance of making the playoffs.

- Katy Perry's [halftime performance](#) is likely still the closest the Lions will get to being in the Super Bowl.

The OLS and logistic regression techniques used for these models were both learned during the Summer II semester. Given the more advanced tools to come in the Fall and Spring terms, chances are high that the model will be more accurate next year. If nothing else, the model's prospects are better than my Lion's Super Bowl chances. But then again, maybe next season will be the year. A fan can hope, right?