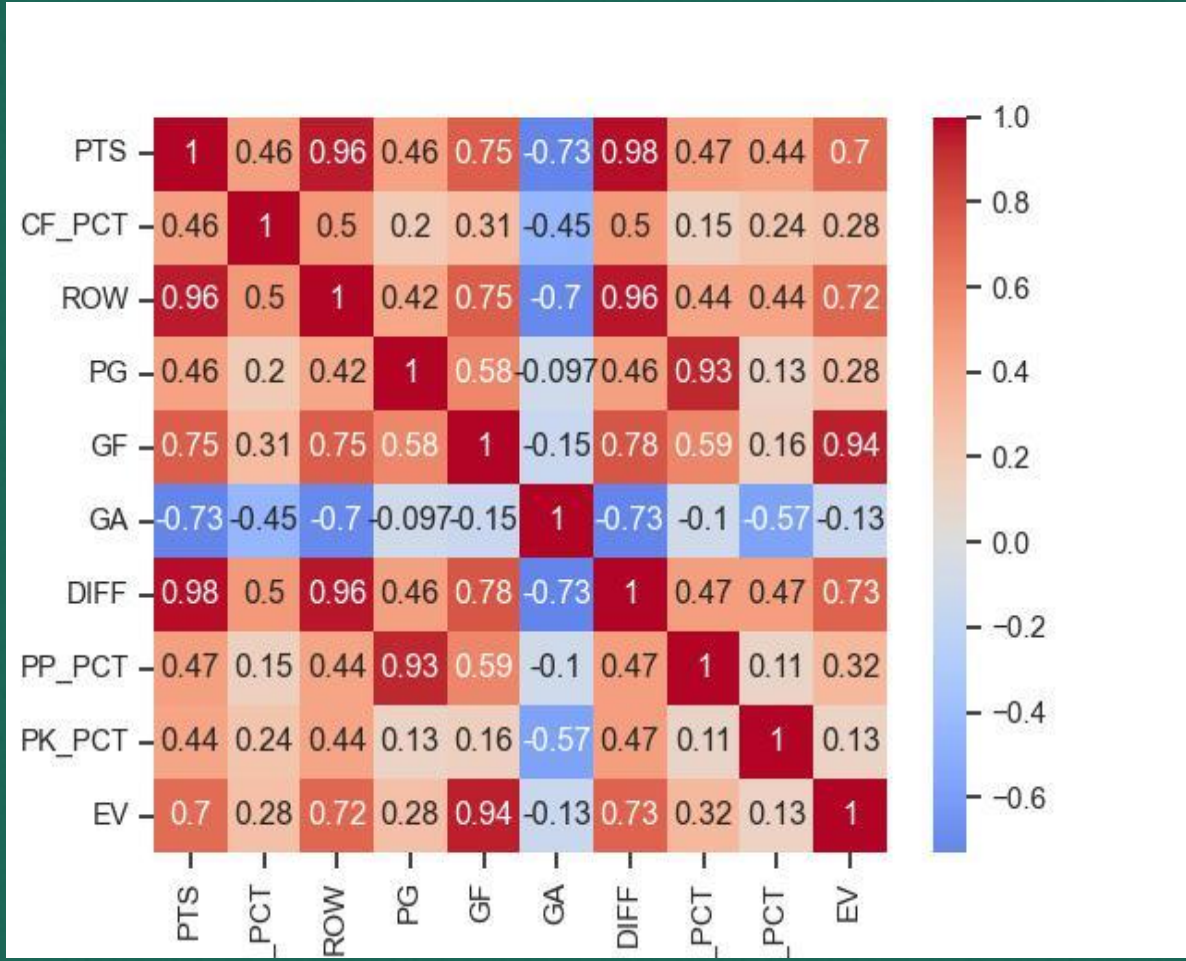
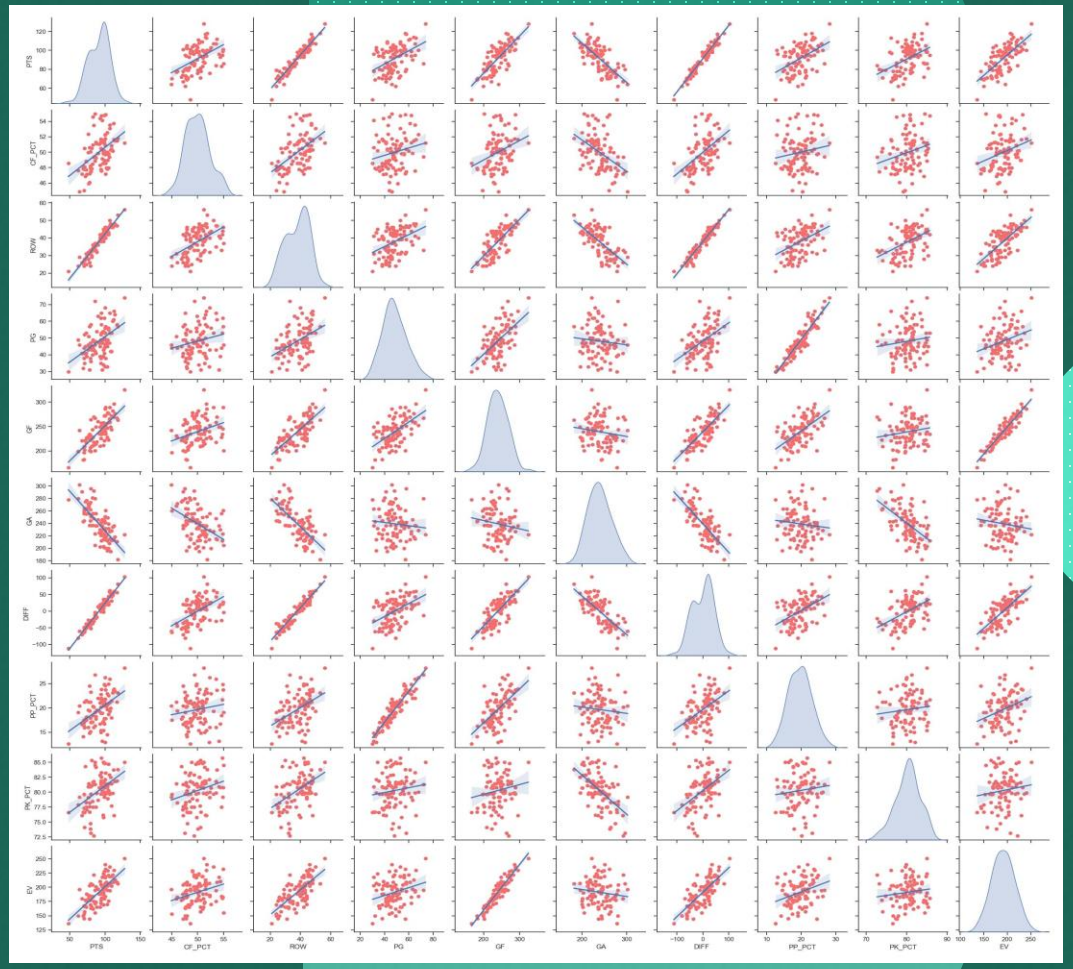
Barnburner

How do Goals Against, Goals For, Corsi %, Power Play %, and Penalty Kill % factor into how many points a team gets in the standings

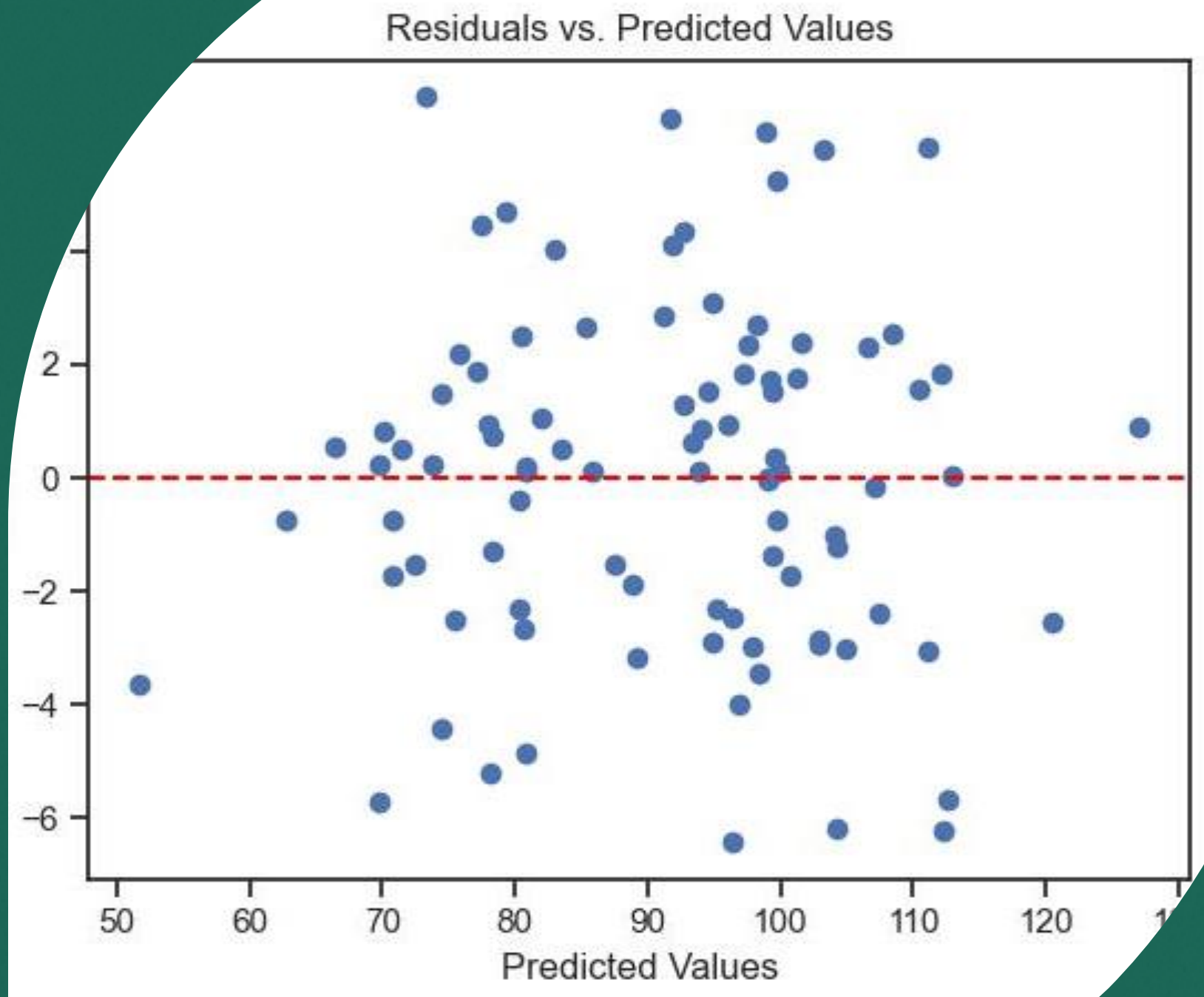
By Carlo Alfano

Model Assumptions: Collinearity





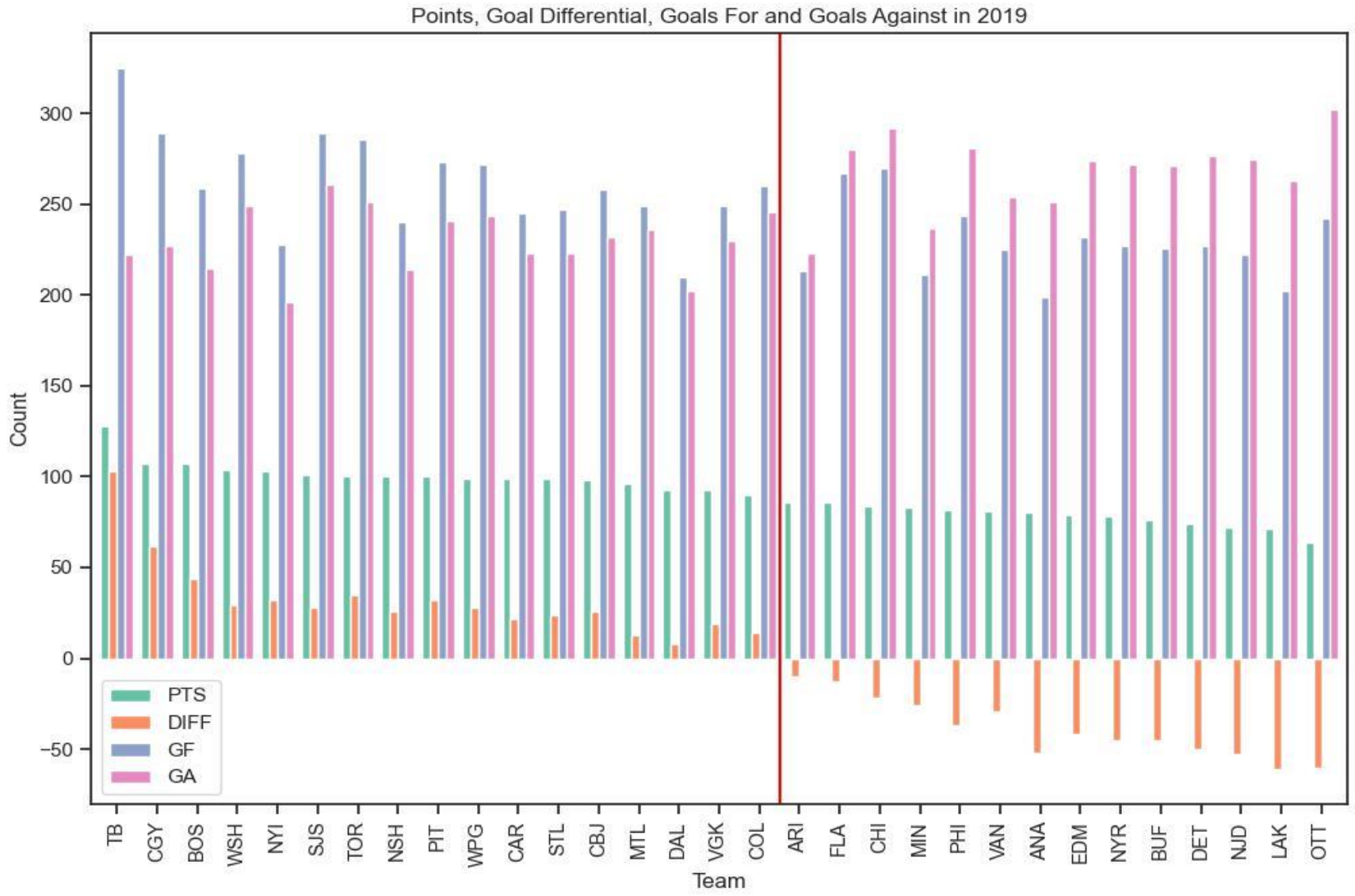
Residual plot

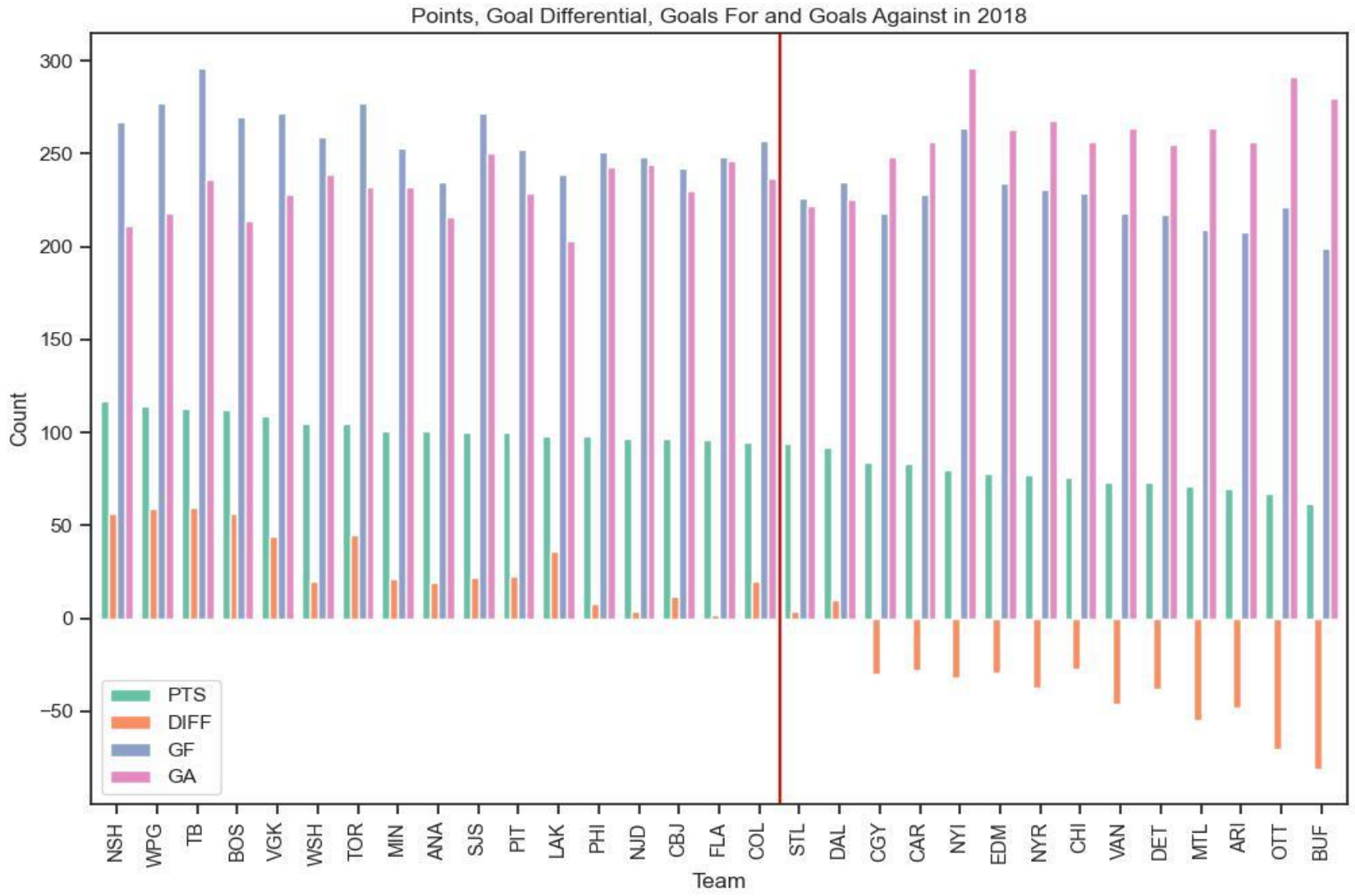


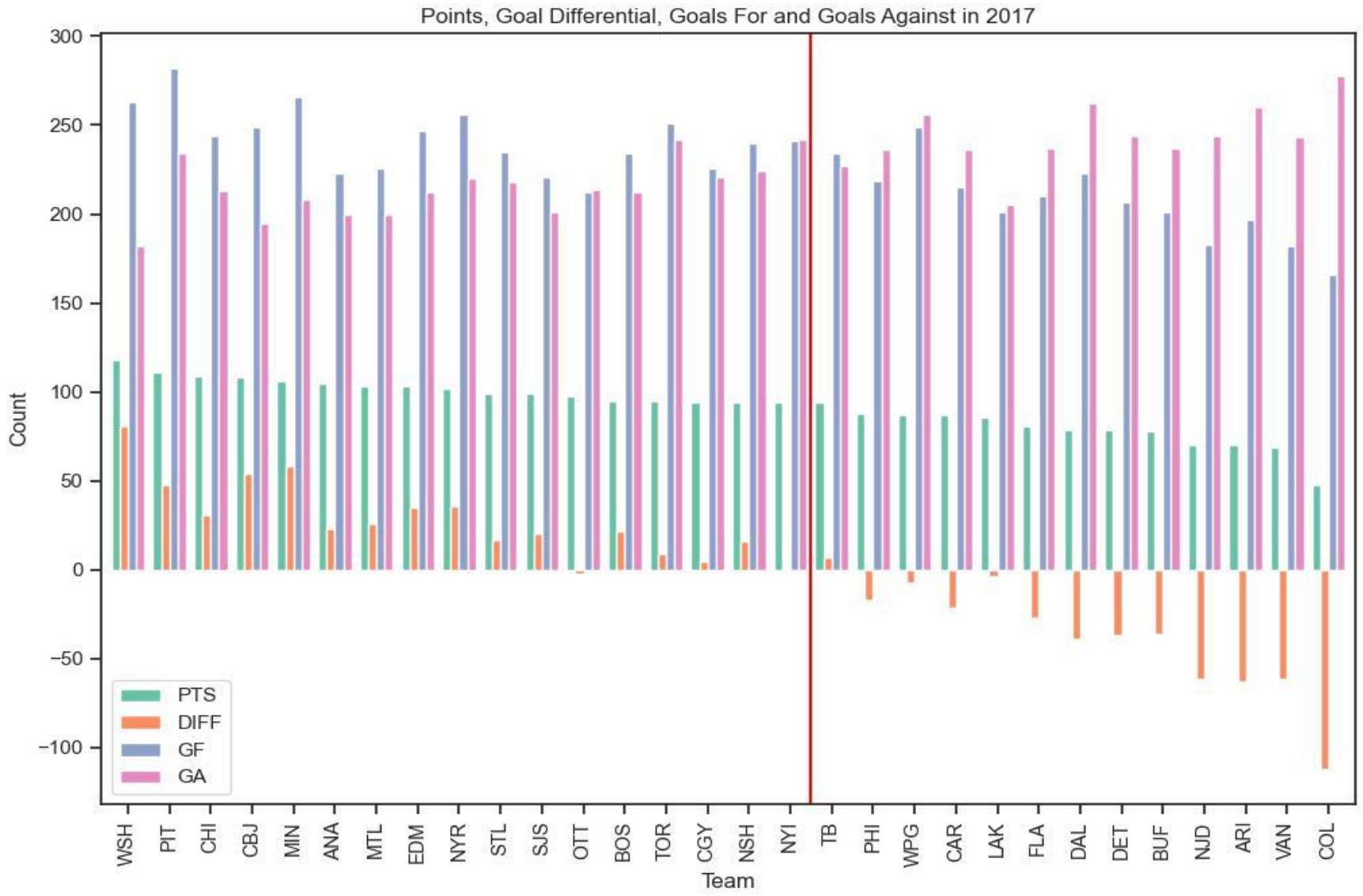
Model

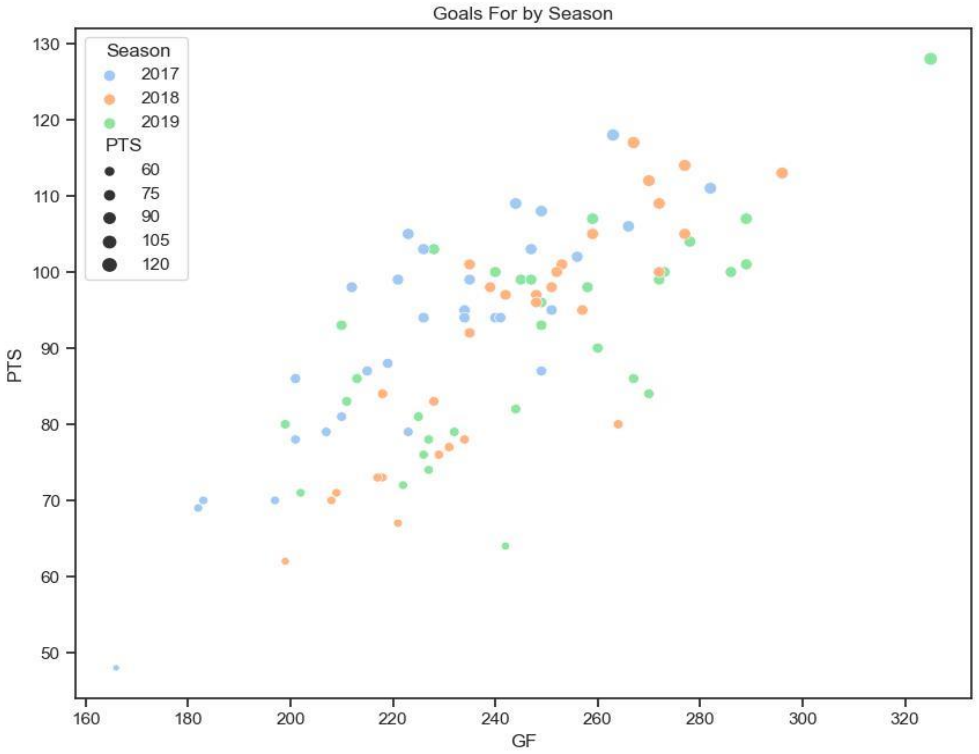
```
LinearRegression()

R-squared: 0.9579886622649345
Mean squared error: 9.05960565925295
Mean absolute error: 2.465133111834468
Coefficients: [ 3.50789744e-01 -3.87055842e-01 -1.12853541e+01 -5.66074067e-03
 -2.54552613e-01]
Intercept: 126.34146728064411
```

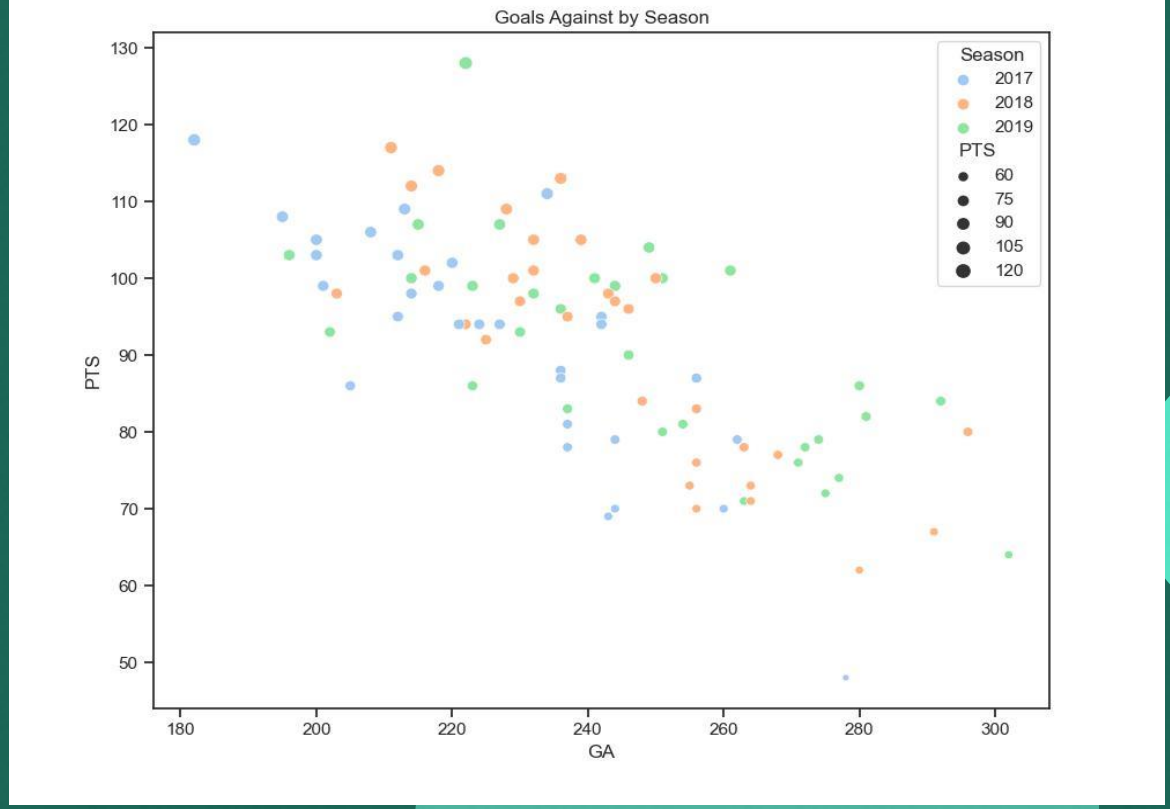
Points = 126.3415 + .3508(Goals For) - .3871(Goals Against)

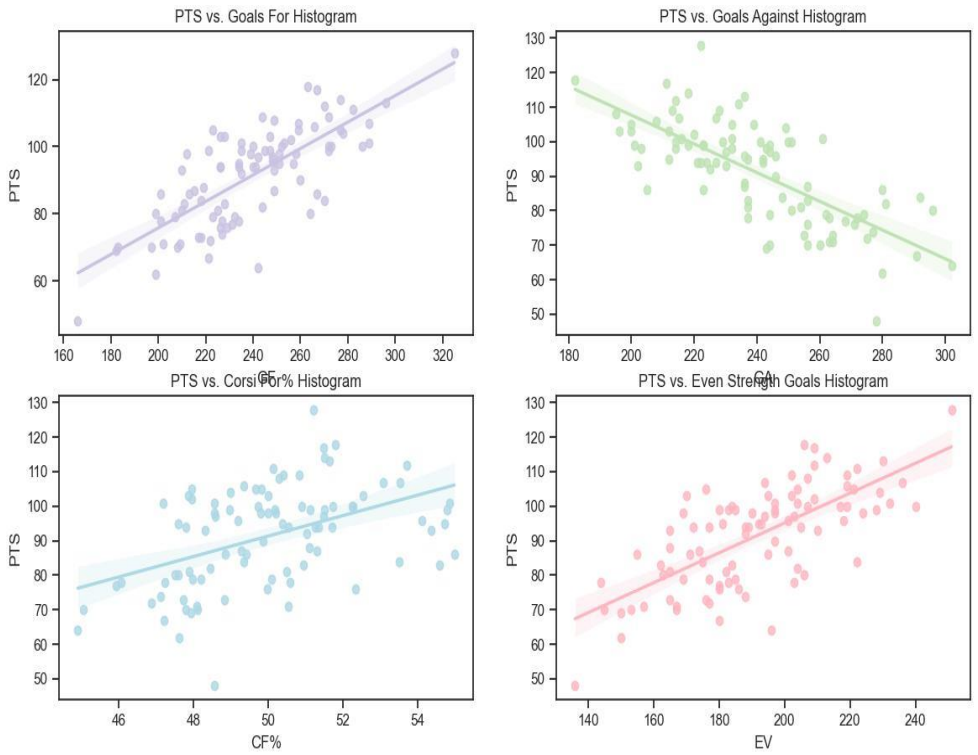

Points, Goal Differential, Goals For and Goals Against in 2019
Count
300
250
200
150
100
50
0
−50
PTS
DIFF
GF
GA
TB
CGY
BOS
WSH
NYI
SJS
TOR
NSH
PIT
WPG
CAR
STL
CBJ
MTL
DAL
VGK
COL
ARI
FLA
CHI
MIN
PHI
VAN
ANA
EDM
NYR
BUF
DET
NJD
LAK
OTT
Team

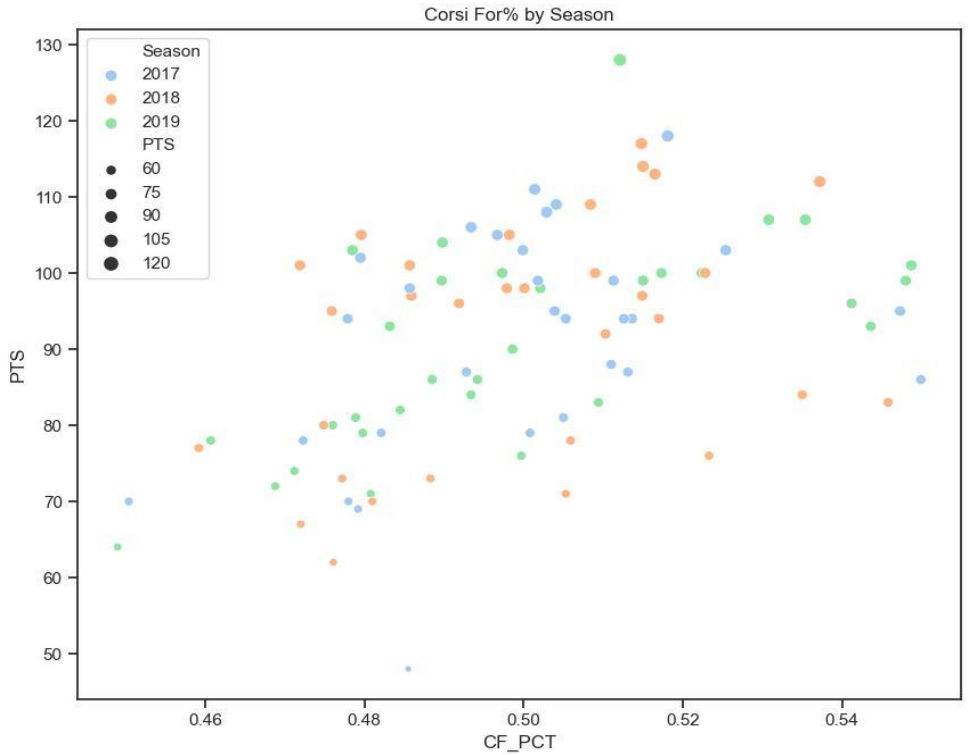

Points, Goal Differential, Goals For and Goals Against in 2018
Count
300
250
200
150
100
50
0
−50
PTS
DIFF
GF
GA
NSH
WPG
TB
BOS
VGK
WSH
TOR
MIN
ANA
SJS
PIT
LAK
PHI
NJD
CBJ
FLA
COL
STL
DAL
CGY
CAR
NYI
EDM
NYR
CHI
VAN
DET
MTL
ARI
OTT
BUF
Team


Points, Goal Differential, Goals For and Goals Against in 2017
Count
300
250
200
150
100
50
0
−50
−100
PTS
DIFF
GF
GA
WSH
PIT
CHI
CBJ
MIN
ANA
MTL
EDM
NYR
STL
SJS
OTT
BOS
TOR
CGY
NSH
NYI
TB
PHI
WPG
CAR
LAK
FLA
DAL
DET
BUF
NJD
ARI
VAN
COL
Team


Goals For by Season
Season
2017
2018
2019
PTS
60
75
90
105
120
PTS
GF
130
120
110
100
90
80
70
60
50
160
180
200
220
240
260
280
300
320


Goals Against by Season
Season
2017
2018
2019
PTS
60
75
90
105
120
PTS
GA
130
120
110
100
90
80
70
60
50
180
200
220
240
260
280
300


PTS vs. Goals For Histogram
PTS vs. Goals Against Histogram
PTS vs. Corsi For% Histogram
PTS vs. Even Strength Goals Histogram
PTS
GF
GA
CF%
EV


Corsi For% by Season
Season
2017
2018
2019
PTS
60
75
90
105
120
PTS
CF_PCT

Conclusion

- The variables I found to be best at predicting end of the year standings points were Goals For and Goals against
- This makes sense because the more goals a team scores the more likely you are to win a game.
- Inversely, if a team was to give up more goals a season it would be harder to win games.
- I do not believe it was a coincidence that almost every single playoff team in this dataset had a positive goal differential.