

NFL 2016 Top Players

simpleplots

2/19/2017

NFL 2016 Fantasy Top Player by Position Post Season Analysis

It is the end of the NFL Fantasy Season, and I was interested in seeing who the top players at each position was. We will scrape some data from the web to create some simple plots of the top 20 players. It is never too early to prep for next season.

Loading Necessary Packages

```
library(tidyverse)
library(XML)
library(rvest)
library(stringr)
```

Web Scrapping Time

We will begin with loading and cleaning the data from Pro Football Reference.

```
url <- "http://www.pro-football-reference.com/years/2016/fantasy.htm"
pfr <- read_html(url)
pfr_2016 <- pfr %>%
  html_node("table") %>%
  html_table(header = FALSE)
```

Cleaning Data

```
##   X1                X2 X3      X4 X5      X6      X7      X8      X9      X10
## 1                                     Games Games Passing Passing Passing
## 2 Rk                                     Tm FantPos Age      G      GS      Cmp      Att      Yds
## 3 1   David Johnson** ARI      RB 25      16      16      0      0      0
## 4 2 Ezekiel Elliott** DAL      RB 21      15      15      0      0      0
## 5 3   Aaron Rodgers* GNB      QB 33      16      16     401     610    4428
## 6 4   LeSean McCoy* BUF      RB 28      15      15      0      0      0
##   X11      X12      X13      X14      X15      X16      X17      X18
## 1 Passing Passing Rushing Rushing Rushing Rushing Receiving Receiving
## 2      TD      Int      Att      Yds      Y/A      TD      Tgt      Rec
## 3      0      0     293     1239     4.23     16     120      80
## 4      0      0     322     1631     5.07     15      39      32
## 5     40      7      67      369     5.51      4      0      0
## 6      0      0     234     1267     5.41     13     57     50
##   X19      X20      X21      X22      X23      X24      X25      X26
## 1 Receiving Receiving Receiving Fantasy Fantasy Fantasy Fantasy Fantasy
## 2      Yds      Y/R      TD FantPt  DKPt  FDPt  VBD PosRank
## 3     879     10.99      4     328  416.8  367.8   191      1
## 4     363     11.34      1     293  332.4  309.4   156      2
```

```
## 5      0      0      382      397.0      387.0      114      1
## 6     356     7.12      1      248      304.3      273.3      111      3
##      X27
## 1 Fantasy
## 2 OvRank
## 3      1
## 4      2
## 5      3
## 6      4
```

The column headers need to be cleaned up. They are currently separated into two rows, and we will combine them into one row. We will utilize the stringr package to do some of the clean up.

```
row1 <- pfr_2016[1,]
row2 <- pfr_2016[2,]
headers <- headers <- paste(row1, row2, sep = " ")
headers[2] <- "Name"
headers<- str_trim(headers, side = "both") #stringr pkg: trim spaces in headers
headers <- str_replace_all(headers, "[ ]", "_") #stringr pkg: replace all spaces with underscores
pfr_2016 <- pfr_2016[-(1:2), ] #take out original headers
colnames(pfr_2016) <- headers
pfr_2016 <- as_tibble(pfr_2016)
```

In the next chunk of code we will convert the classes of the columns.

```
#convert columns to numeric
numeric_col <- c(1, 5:27)
pfr_2016[,numeric_col] <- lapply(pfr_2016[,numeric_col], as.numeric)

#convert position into factor
pfr_2016$FantPos <- as.factor(pfr_2016$FantPos)

#removing NA values
NA_val<- !is.na(pfr_2016$Games_G)
pfr_2016 <- pfr_2016[NA_val,]
pfr_2016 <- arrange(pfr_2016, Rk)

#removing special characters from player names
pfr_2016$Name <- str_replace_all(pfr_2016$Name, "[*+]", "")
```

The data is now looking easier to manage and manipulate.

```
## # A tibble: 6 × 27
##   Rk      Name      Tm FantPos  Age Games_G Games_GS Passing_Cmp
##   <dbl>      <chr> <chr>   <fctr> <dbl>   <dbl>   <dbl>      <dbl>
## 1      1 David Johnson  ARI     RB     25      16      16          0
## 2      2 Ezekiel Elliott  DAL     RB     21      15      15          0
## 3      3 Aaron Rodgers  GNB     QB     33      16      16        401
## 4      4 LeSean McCoy  BUF     RB     28      15      15          0
## 5      5 DeMarco Murray  TEN     RB     28      16      16          1
## 6      6 Le'Veon Bell  PIT     RB     24      12      12          0
## # ... with 19 more variables: Passing_Att <dbl>, Passing_Yds <dbl>,
## #   Passing_TD <dbl>, Passing_Int <dbl>, Rushing_Att <dbl>,
## #   Rushing_Yds <dbl>, `Rushing_Y/A` <dbl>, Rushing_TD <dbl>,
## #   Receiving_Tgt <dbl>, Receiving_Rec <dbl>, Receiving_Yds <dbl>,
## #   `Receiving_Y/R` <dbl>, Receiving_TD <dbl>, Fantasy_FantPt <dbl>,
```

```
## # Fantasy_DKPt <dbl>, Fantasy_FDPT <dbl>, Fantasy_VBD <dbl>,
## # Fantasy_PosRank <dbl>, Fantasy_OvRank <dbl>
```

Creating Tables For Each Position

```
QB_2016 <- pfr_2016 %>%
  filter(FantPos == "QB") %>%
  as_tibble()

RB_2016 <- pfr_2016 %>%
  filter(FantPos == "RB") %>%
  arrange(Rk)

WR_2016 <- pfr_2016 %>%
  filter(FantPos == "WR") %>%
  arrange(Rk)

TE_2016 <- pfr_2016 %>%
  filter(FantPos == "TE") %>%
  arrange(Rk)
```

Top QB Table

```
## # A tibble: 71 × 27
## #   Rk      Name Tm FantPos Age Games_G Games_GS Passing_Cmp
## #   <dbl>      <chr> <chr> <fctr> <dbl> <dbl> <dbl> <dbl>
## # 1      3 Aaron Rodgers GNB QB 33 16 16 401
## # 2      9 Matt Ryan ATL QB 31 16 16 373
## # 3     15 Drew Brees NOR QB 37 16 16 471
## # 4     25 Andrew Luck IND QB 27 15 15 346
## # 5     29 Kirk Cousins WAS QB 28 16 16 406
## # 6     38 Dak Prescott DAL QB 23 16 16 311
## # 7     52 Matthew Stafford DET QB 28 16 16 388
## # 8     66 Tyrod Taylor BUF QB 27 15 15 269
## # 9     67 Derek Carr OAK QB 25 15 15 357
## # 10    68 Blake Bortles JAX QB 24 16 16 368
## # ... with 61 more rows, and 19 more variables: Passing_Att <dbl>,
## #   Passing_Yds <dbl>, Passing_TD <dbl>, Passing_Int <dbl>,
## #   Rushing_Att <dbl>, Rushing_Yds <dbl>, `Rushing_Y/A` <dbl>,
## #   Rushing_TD <dbl>, Receiving_Tgt <dbl>, Receiving_Rec <dbl>,
## #   Receiving_Yds <dbl>, `Receiving_Y/R` <dbl>, Receiving_TD <dbl>,
## #   Fantasy_FantPt <dbl>, Fantasy_DKPt <dbl>, Fantasy_FDPT <dbl>,
## #   Fantasy_VBD <dbl>, Fantasy_PosRank <dbl>, Fantasy_OvRank <dbl>
```

Creating Plots For Each Position

```
top_QB <- ggplot(data = head(QB_2016, n=20),
  aes(x=Fantasy_FantPt,
    y = reorder(Name, desc(Rk)))) +
  geom_point(size = 3, color = "green4") +
  labs(x = "Fantasy Points", y = "Player") +
  ggtitle("Top QB 2016") +
```

```

theme_bw() +
ggsave("top_QB.png")

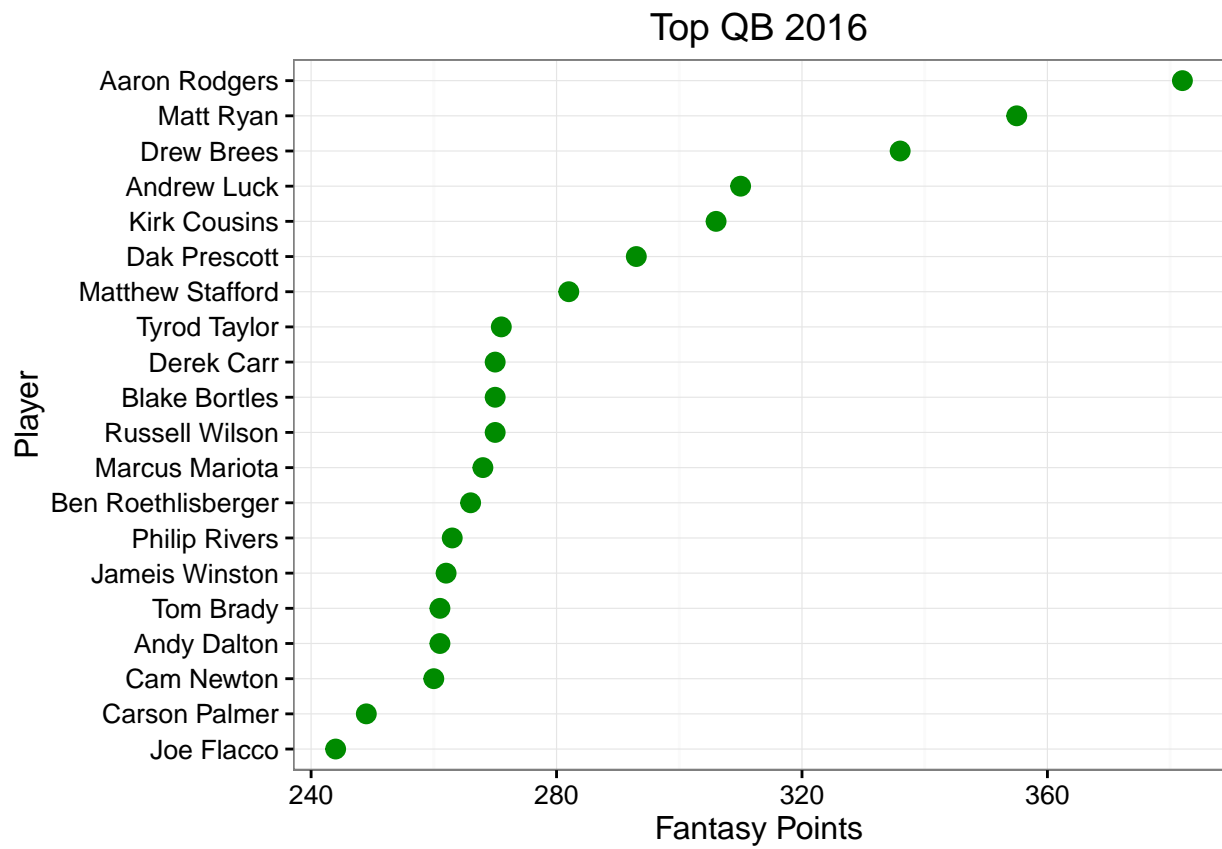
top_RB <- ggplot(data = head(RB_2016, n=20),
                 aes(x=Fantasy_FantPt,
                     y = reorder(Name, desc(Rk)))) +
geom_point(size = 3, color = "dark blue") +
labs(x = "Fantasy Points", y = "Player") +
ggtitle("Top RB 2016") +
theme_bw() +
ggsave("top_RB.png")

top_WR <- ggplot(data = head(WR_2016, n=20),
                 aes(x=Fantasy_FantPt,
                     y = reorder(Name, desc(Rk)))) +
geom_point(size = 3, color = "dark red") +
labs(x = "Fantasy Points", y = "Player") +
ggtitle("Top WR 2016") +
theme_bw() +
ggsave("top_WR.png")

top_TE <- ggplot(data = head(TE_2016, n=20),
                 aes(x=Fantasy_FantPt,
                     y = reorder(Name, desc(Rk)))) +
geom_point(size = 3, color = "slategrey") +
ggtitle("Top TE 2016") +
labs(x = "Fantasy Points", y = "Player") +
theme_bw() +
ggsave("top_TE.png")

```

Here is a preview of our simple plot of the top 20 Quarterbacks from 2016.



We will dig into more of the data in future posts. Thanks for reading.