

# NFL\_Data\_Analysis

Isaac Swope

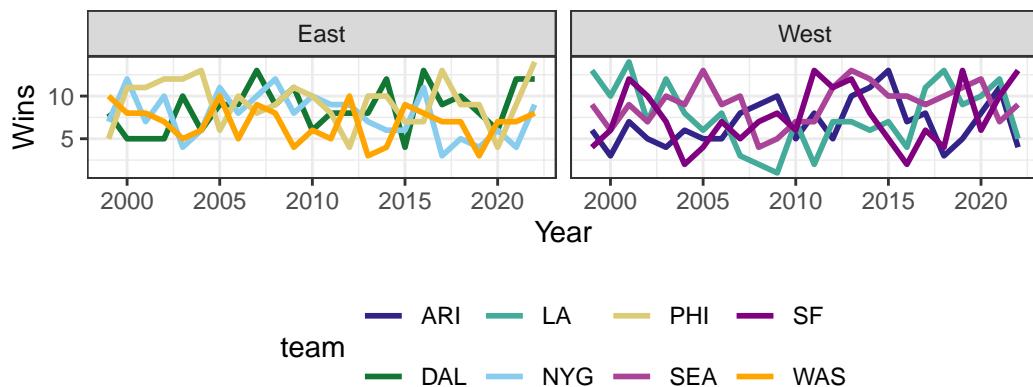
Kyle Barber

Tim Smith

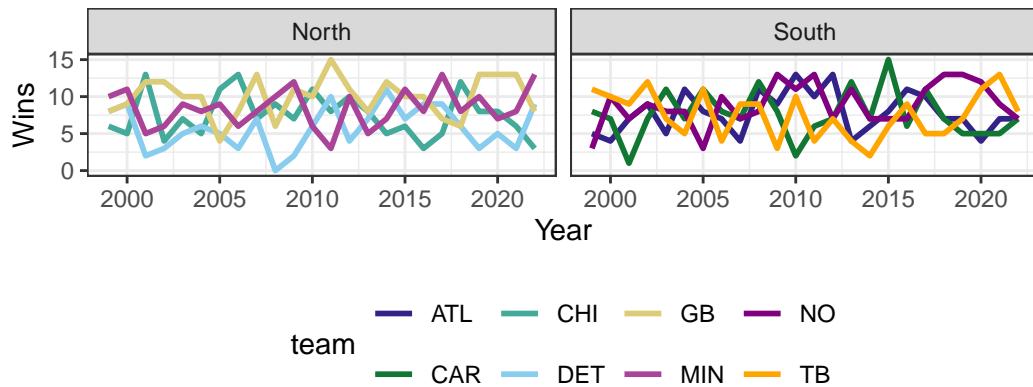
2025-12-03

## Data Overview

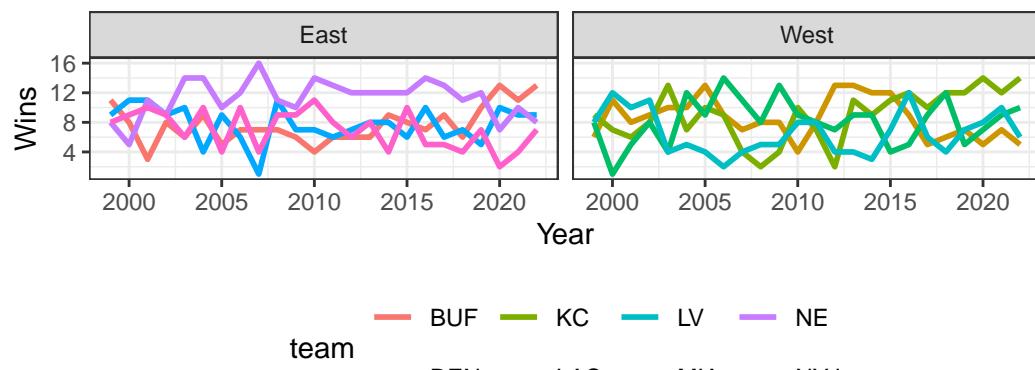
NFC teams and their wins from year to year



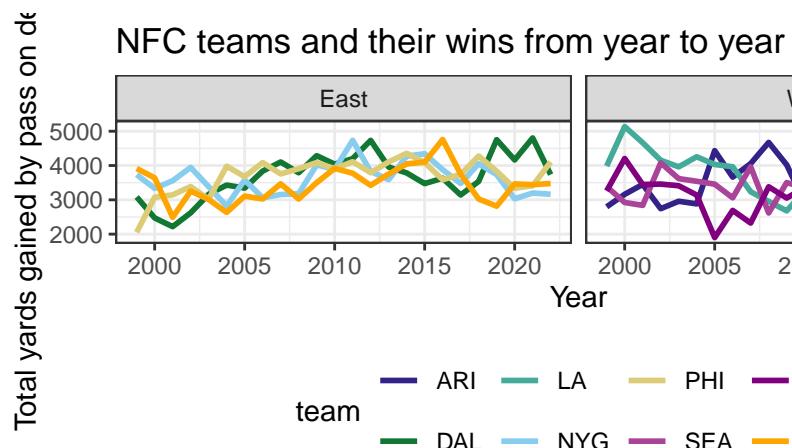
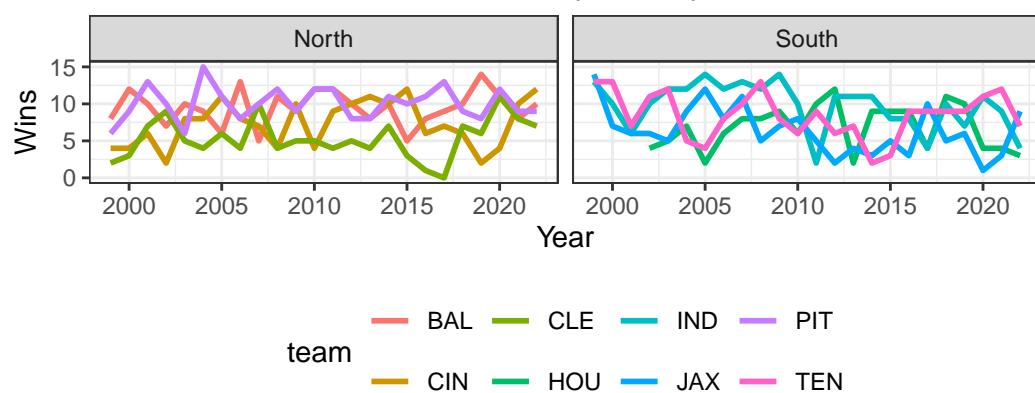
NFC teams and their wins from year to year



### AFC teams and their wins from year to year

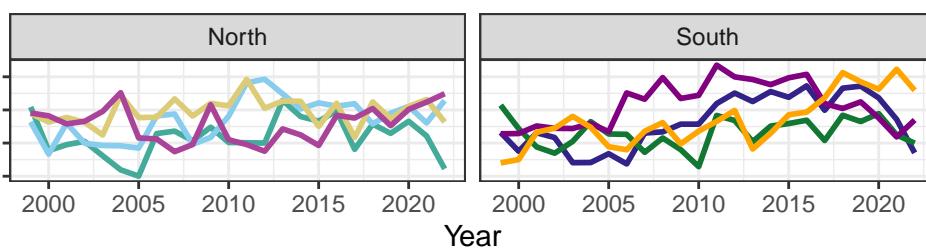


### AFC teams and their wins from year to year



Total yards gained by pass on defense

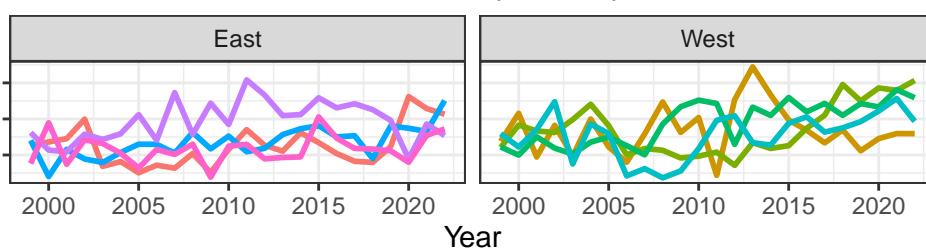
NFC teams and their wins from year to year



team  
ATL CHI GB NO  
CAR DET MIN TB

Total yards gained by pass on defense

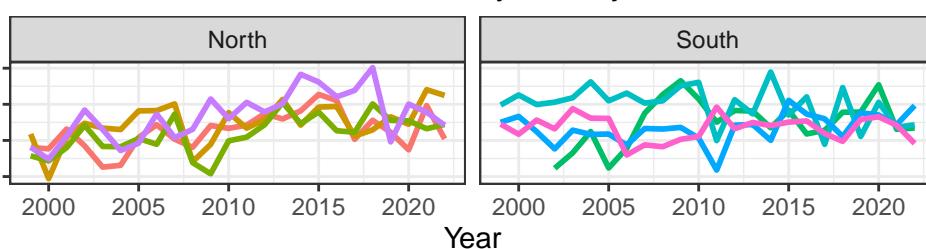
AFC teams and their wins from year to year



team  
BUF KC LV NE  
DEN LAC MIA NYJ

Total yards gained by pass on defense

AFC teams and their wins from year to year



team  
BAL CLE IND PIT  
CIN HOU JAX TEN

## Code Appendix

```
#|label: Packages

#Tidyverse Coding Styling
library(tidyverse)
library(dbplyr)

#|label: Importing Data

NFL_raw <- read.csv("nfl-team-statistics (1).csv")

#|label: Adding East, West, North and South Conferences
NFC_East_data <- NFL_raw %>%
  filter(team %in% c("DAL", "NYG", "PHI", "WAS")) %>%
  mutate(Conf = 'NFC_East')

NFC_West_data <- NFL_raw %>%
  filter(team %in% c("LA", "SEA", "SF", "ARI")) %>%
  mutate(Conf = 'NFC_West')

NFC_North_data <- NFL_raw %>%
  filter(team %in% c("CHI", "GB", "DET", "MIN")) %>%
  mutate(Conf = 'NFC_North')

NFC_South_data <- NFL_raw %>%
  filter(team %in% c("TB", "CAR", "ATL", "NO")) %>%
  mutate(Conf = 'NFC_South')

AFC_East_data <- NFL_raw %>%
  filter(team %in% c("NE", "BUF", "MIA", "NYJ")) %>%
  mutate(Conf = 'AFC_East')

AFC_West_data <- NFL_raw %>%
  filter(team %in% c("DEN", "LAC", "KC", "LV")) %>%
  mutate(Conf = 'AFC_West')

AFC_North_data <- NFL_raw %>%
  filter(team %in% c("BAL", "PIT", "CIN", "CLE")) %>%
  mutate(Conf = 'AFC_North')

AFC_South_data <- NFL_raw %>%
  filter(team %in% c("JAX", "IND", "HOU", "TEN")) %>%
  mutate(Conf = 'AFC_South')

NFL_Clean <- bind_rows(NFC_East_data, NFC_North_data, NFC_South_data, NFC_West_data, AFC_East_data) %>%
  arrange(season, team) %>%
  separate_wider_delim(
```

```

    cols = 'Conf',
    delim = '_',
    names = c('Conf', 'Div')
  )

NFL_Clean%>%
  filter(Conf == "NFC")%>%
  filter(Div %in% c("East", "West"))%>%
ggplot(
  mapping = aes(
    x = season,
    y = wins,
    color = team
  )
) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 12
      x = "Year",
      y = "Wins",
      color = "team",
      shape = "team",
      title = "NFC teams and their wins from year to year"
) +
  scale_color_manual(
    values = c("#332288", "#117733", "#44AA99", "#88CCEE", "#DDCC77", "#AA4499", "#800080", "#FFA500")
) +
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

NFL_Clean%>%
  filter(Conf == "NFC")%>%
  filter(Div %in% c("North", "South"))%>%
  group_by(Div)%>%
ggplot(
  mapping = aes(
    x = season,
    y = wins,
    color = team
  )
) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 12
      x = "Year",
      y = "Wins",
      color = "team",
      shape = "team",
      title = "NFC teams and their wins from year to year"
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) +
  theme_bw() +
  theme(
    legend.position = "bottom"
  )

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) +
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)

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  x = "Year",
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  shape = "team",
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) +
  scale_color_discrete()+
  theme_bw() +
  theme(
    legend.position = "bottom"
)

NFL_Clean%>%
  filter(Conf == "AFC")%>%
  filter(Div %in% c("North", "South"))%>%
  group_by(Div)%>%
ggplot(
  mapping = aes(

```

```

        x = season,
        y = wins,
        color = team
    )
)
) +
geom_line(linewidth = 1) +
facet_wrap(~Div) +
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)

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  filter(Conf == "NFC")%>%
  filter(Div %in% c("East", "West"))%>%
ggplot(
  mapping = aes(
    x = season,
    y = offense_total_yards_gained_pass,
    color = team
  )
) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 1
      x = "Year",
      y = "Total yards gained by pass on defense",
      color = "team",
      shape = "team",
      title = "NFC teams and their wins from year to year"
) +
  scale_color_manual(
    values = c("#332288", "#117733", "#44AA99", "#88CCEE", "#DDCC77", "#AA4499", "#800080", "#FFA
) +
  theme_bw() +
  theme(
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)

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      shape = "team",
      title = "AFC teams and their wins from year to year"
)

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    title = "AFC teams and their wins from year to year"
) +
scale_color_discrete()+
theme_bw() +
theme(
  legend.position = "bottom"
)

NFL_Clean%>%
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) +
  geom_line(linewidth = 1) +
  facet_wrap(~Div) +
  labs(#Step 4: add labels and title to the data visualization and create the colors for the 12
      x = "Year",
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      shape = "team",
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) +
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  theme_bw() +
  theme(
    legend.position = "bottom"
)

```