Predicting the Winner of 2021 D1 NCAA Basketball Tournament

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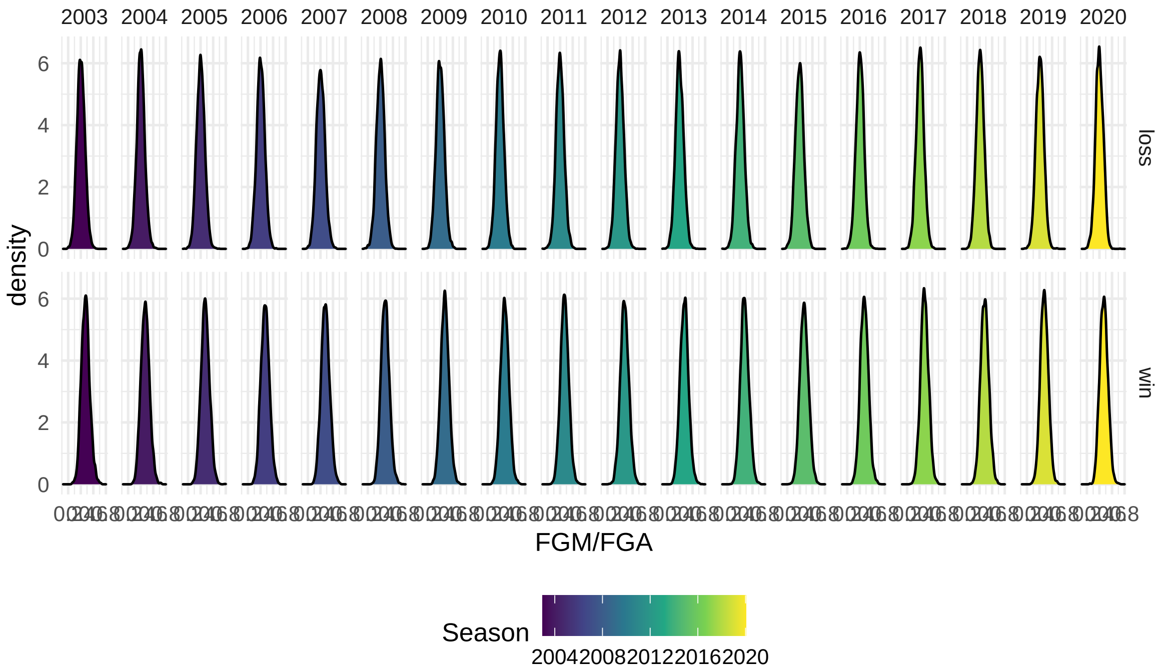
EDA

```
season_df =
  read_csv("./data/MRegularSeasonDetailedResults.csv") %>%
  rowid_to_column("game_id") %>%
  relocate(WLoc:NumOT, .after = DayNum) %>%
  pivot_longer(
    WTeamID:LPF,
    names_to = "stat",
    values_to = "count"
  ) %>%
  mutate(outcome = case_when(
    str_detect(stat, "^W") ~ "win",
    str_detect(stat, "^L") ~ "loss"
  )) %>%
  mutate(stat = substr(stat, 2, nchar(stat))) %>%
  pivot_wider(
    names_from = stat,
    values_from = count
  ) %>%
  unnest()
```

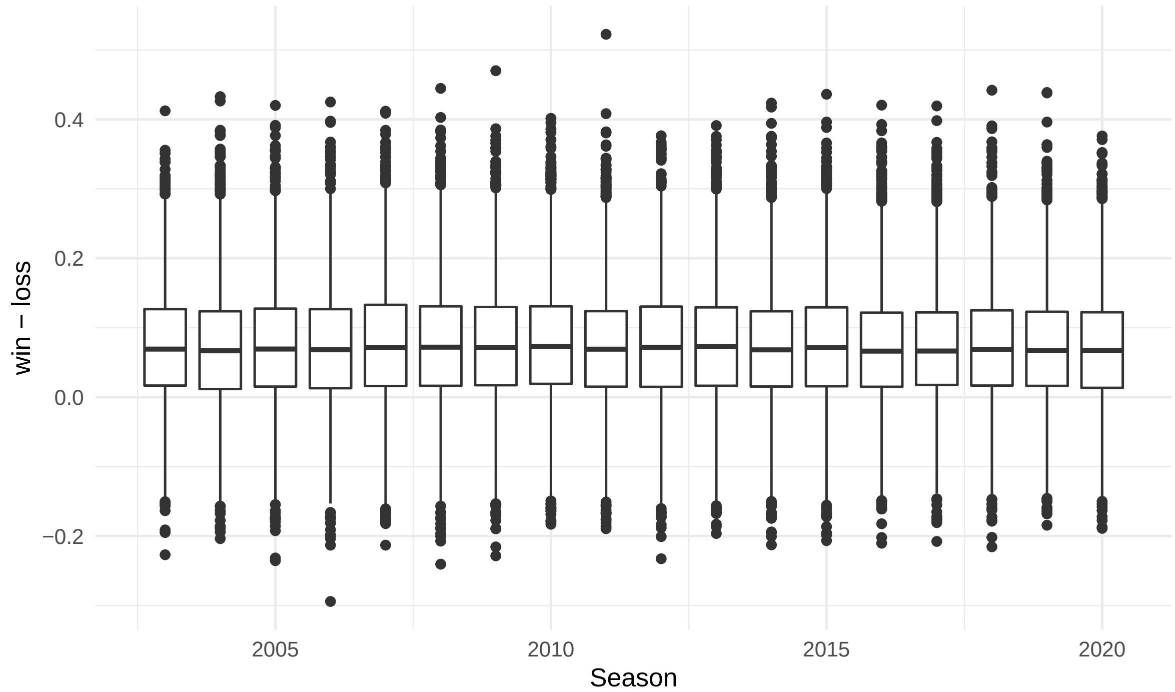
```
## Parsed with column specification:
## cols(
##   .default = col_double(),
##   WLoc = col_character()
## )

## See spec(...) for full column specifications.

## Warning: `cols` is now required when using unnest().
## Please use `cols = c()`
```

```
View(season_df)
```

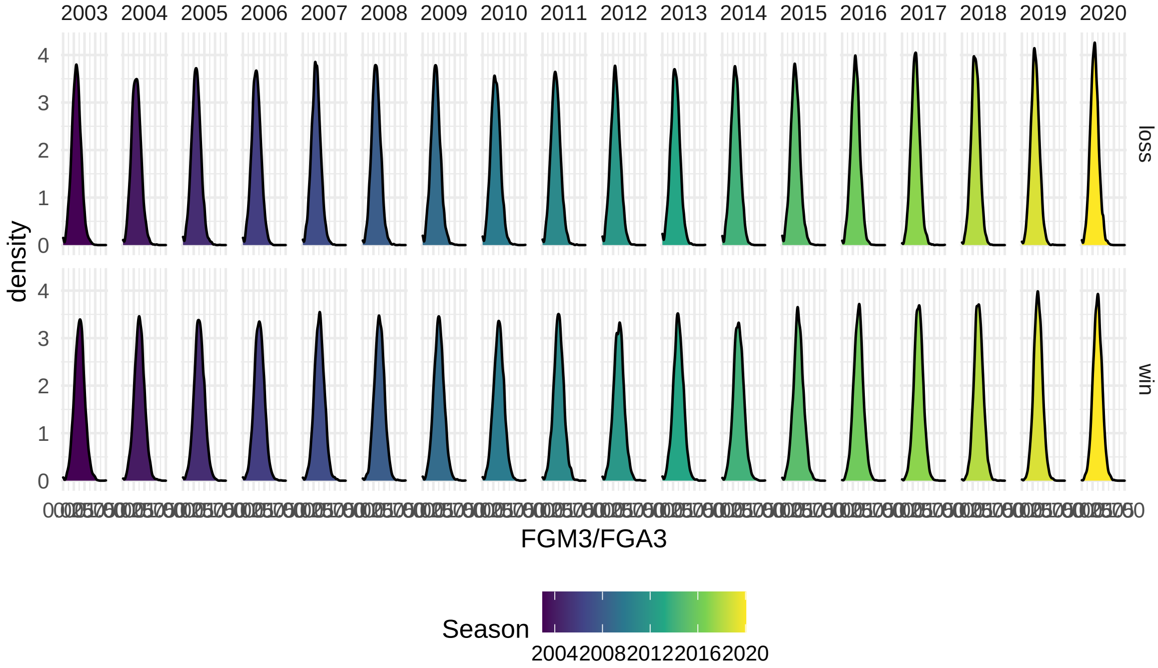
```
# FG% Dist. per Season by W/L
season_df %>%
  group_by(Season, outcome) %>%
  ggplot(aes(x = FGM/FGA, fill = Season)) +
  geom_density() +
  facet_grid(outcome ~ Season)
```



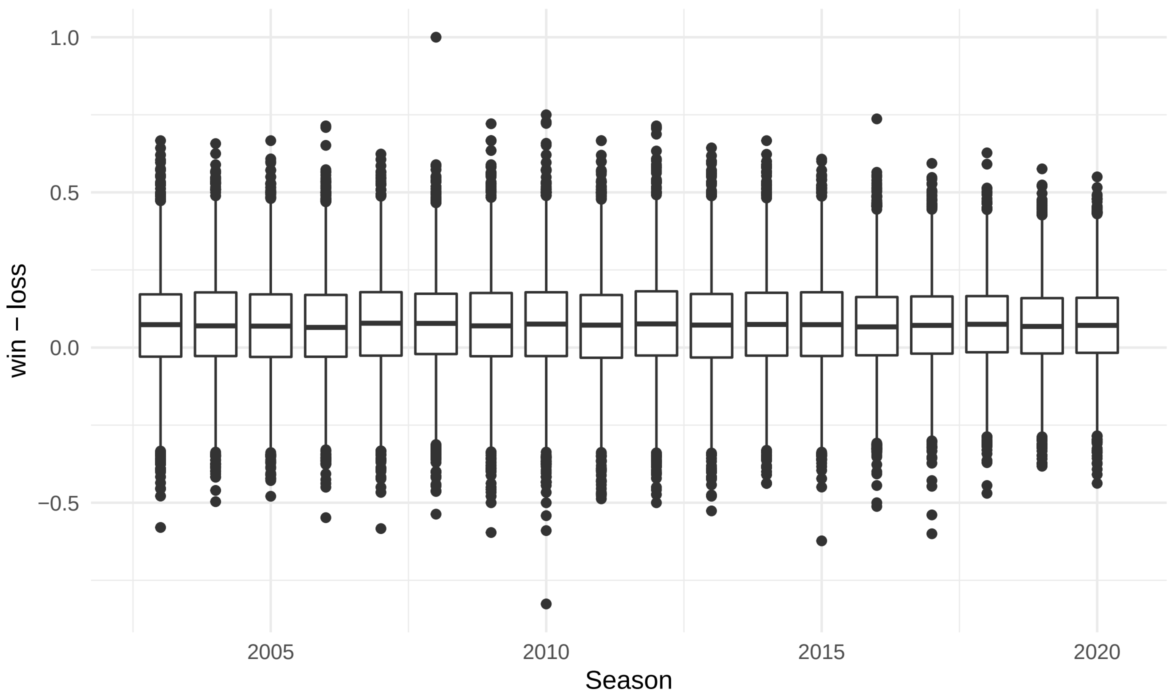
```
# FG% Difference Plot
season_df %>%
  mutate(fg_pct = FGM/FGA) %>%
  pivot_wider(
    names_from = outcome,
    values_from = fg_pct
  ) %>%
  mutate(loss = lead(loss)) %>%
  drop_na() %>%
  ggplot(aes(x = Season, y = win - loss, group = Season)) +
  geom_boxplot()
```



```
# 3pt-FG% Dist. per Season by W/L
season_df %>%
  group_by(Season, outcome) %>%
  ggplot(aes(x = FGM3/FGA3, fill = Season)) +
  geom_density() +
  facet_grid(outcome ~ Season)
```



```
# 3pt-FG% Difference Plot
season_df %>%
  mutate(fg3_pct = FGM3/FGA3) %>%
  pivot_wider(
    names_from = outcome,
    values_from = fg3_pct
  ) %>%
  mutate(loss = lead(loss)) %>%
  drop_na() %>%
  ggplot(aes(x = Season, y = win - loss, group = Season)) +
  geom_boxplot()
```


win − loss
Season