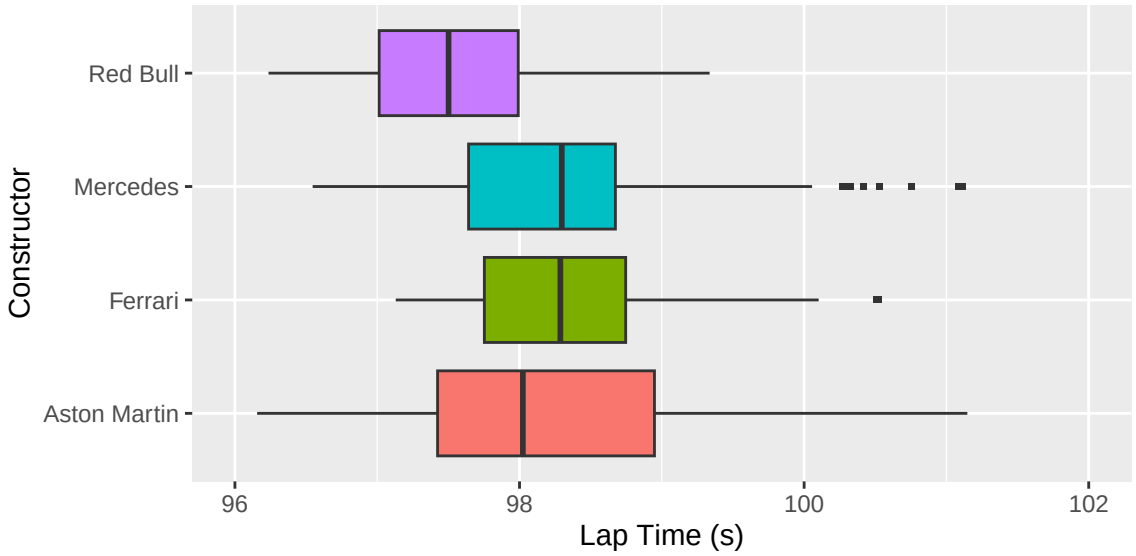
Formula One 2023 World Championship

Introduction

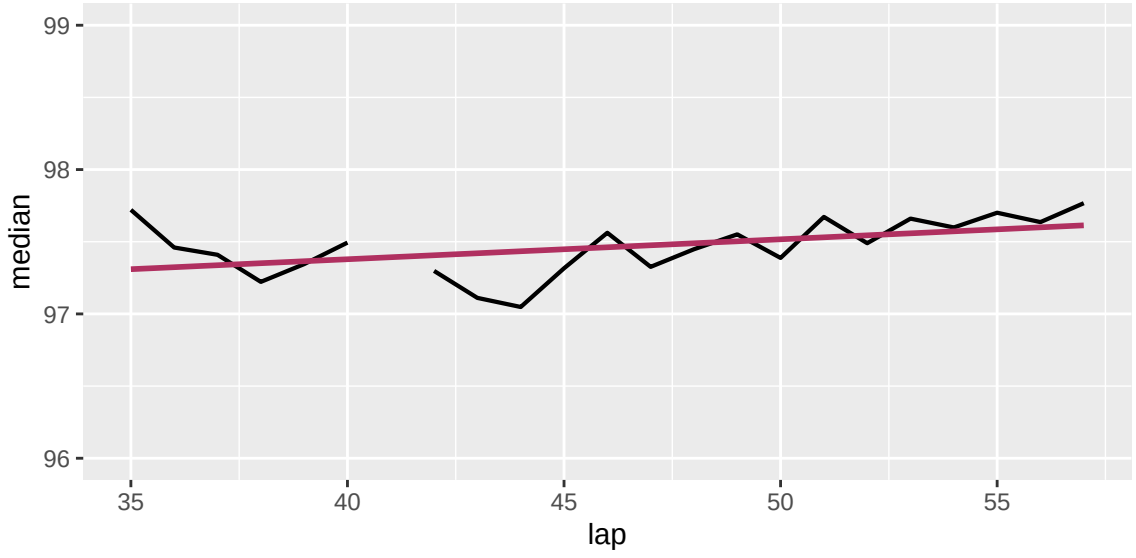
The 2022 Formula One season marked a significant change in technical regulations that aimed to improve the ability of cars to follow each other more closely. Alongside these rule changes, the season also witnessed the resurgence of a long-standing rival and the decline of a previously dominant team. In the opening rounds, Max Verstappen and Charles Leclerc were leading contenders for the driver's championship. However, Verstappen and Red Bull became dominant over the year, eventually clinching both titles. Heading into the 2023 season, Red Bull were considered the favorite, while Ferrari and Mercedes were expected to catch up. The first two races showed Aston Martin's impressive pace, while Red Bull maintained their momentum, making the fight for second place a three-way battle. This analysis focuses on each team's race pace and puts different drivers in the top-four teams drivers in a head-to-head every Grand Prix.

Bahrain Grand Prix



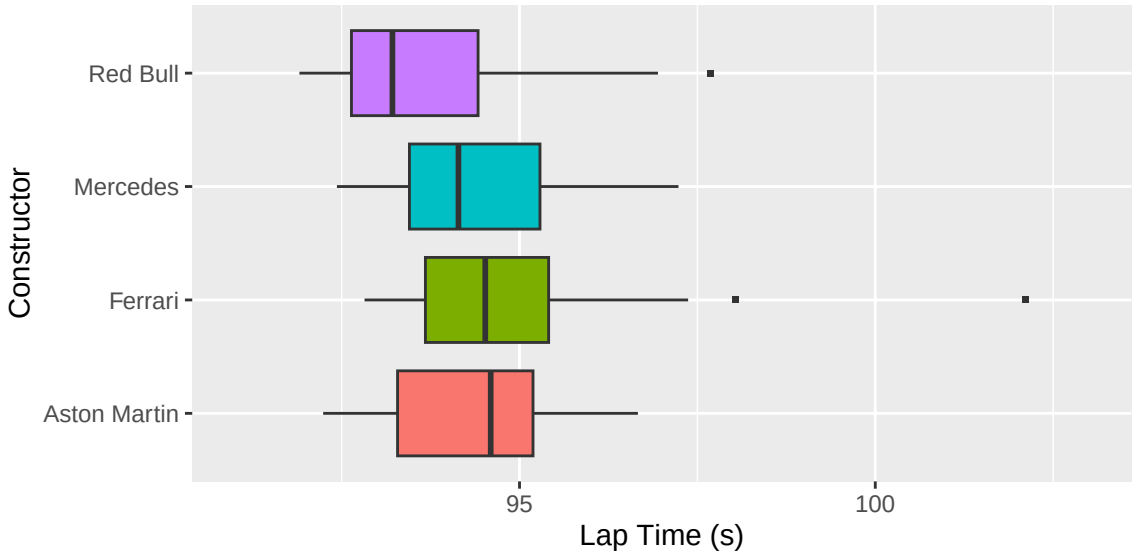

```
## # A tibble: 4 x 3
##   team         median delta
##   <chr>         <dbl> <dbl>
## 1 Aston Martin   98.0 0.522
## 2 Ferrari        98.3 0.786
## 3 Mercedes       98.3 0.796
## 4 Red Bull       97.5 0
```

```
## `geom_smooth()` using formula = 'y ~ x'
```



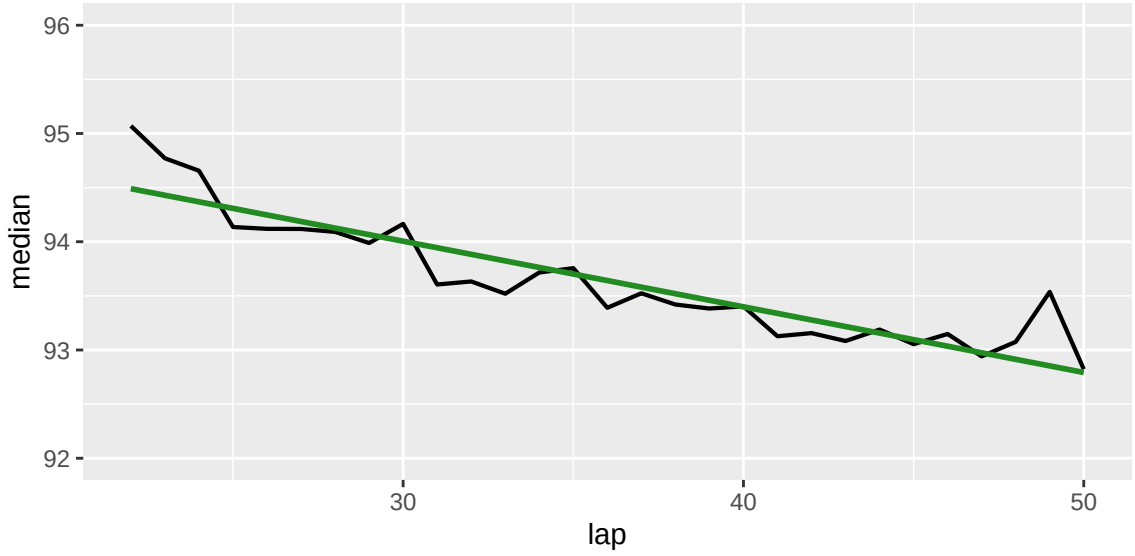
```
##                Estimate  Std. Error    t value     Pr(>|t|)
## (Intercept) 96.83691461 0.240479491 402.682633 1.433935e-40
## bhr_df$lap   0.01177274 0.005148412   2.286674 3.325229e-02
```

Saudi Arabian Grand Prix:



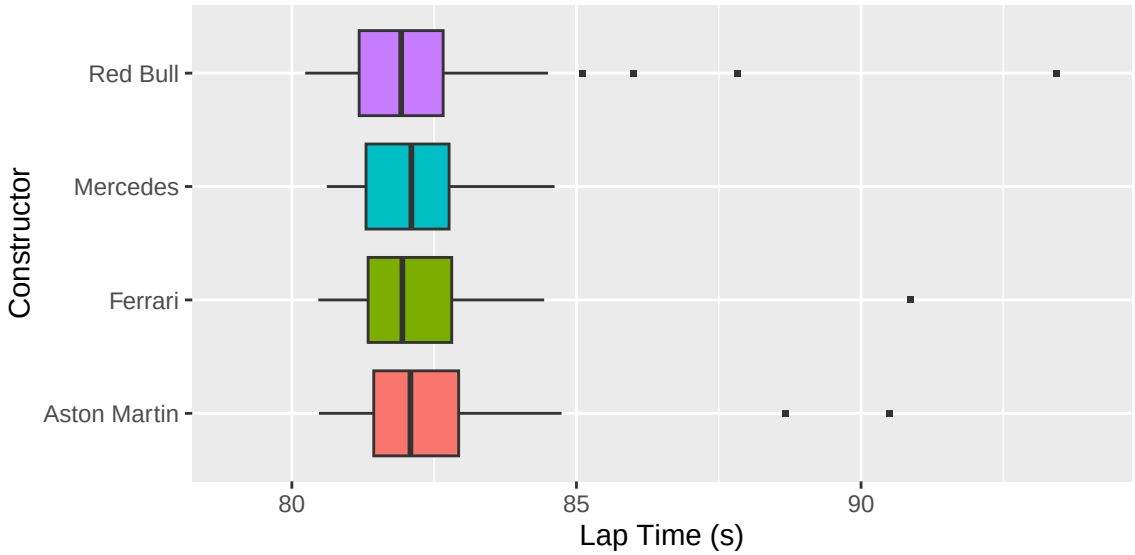

```
## # A tibble: 4 x 3
##   team         median delta
##   <chr>         <dbl> <dbl>
## 1 Aston Martin   94.6 1.38
## 2 Ferrari        94.5 1.30
## 3 Mercedes       94.1 0.928
## 4 Red Bull       93.2 0
```

```
## `geom_smooth()` using formula = 'y ~ x'
```



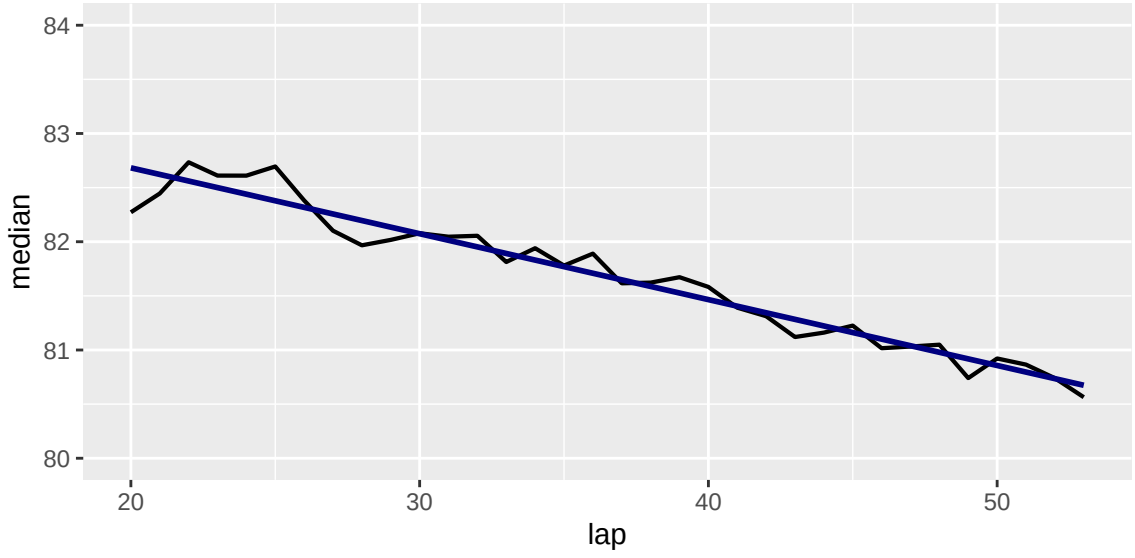
```
##                Estimate  Std. Error   t value     Pr(>|t|)
## (Intercept) 95.82371034 0.197498875 485.18611 9.671053e-55
## sau_df$lap  -0.06062414 0.005343666 -11.34505 8.864083e-12
```

Australian Grand Prix:




```
## # A tibble: 4 x 3
##   team          median delta
##   <chr>          <dbl> <dbl>
## 1 Aston Martin    82.1 0.162
## 2 Ferrari         81.9 0.021
## 3 Mercedes        82.1 0.179
## 4 Red Bull        81.9 0
```

```
## `geom_smooth()` using formula = 'y ~ x'
```



```
##                Estimate  Std. Error  t value     Pr(>|t|)
## (Intercept) 83.89972842 0.095326989 880.1257 1.006153e-71
## aus_df$lap  -0.06085638 0.002522178 -24.1285 4.231646e-22
```