

Visualizing the Formula for Success in F1 Racing

EPPS 6356 Data Visualization
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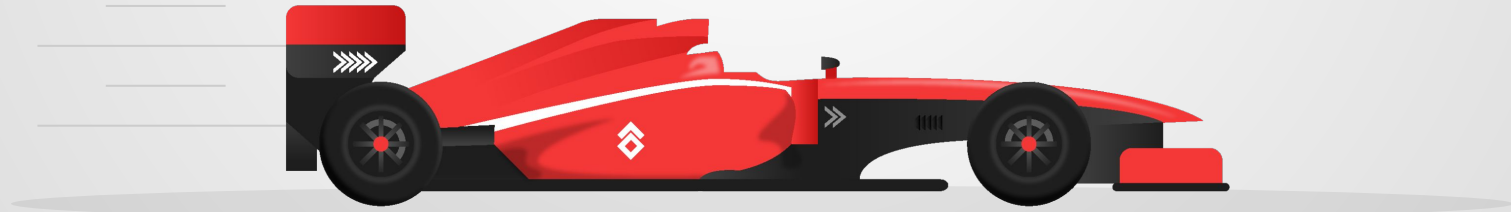


TABLE OF CONTENTS

01

Introduction

Introduce topic and background research from other studies

02

Methods

Describe the dataset and explain the methodologies of analysis

03

Results

Provide all of the graph visuals used to demonstrate the data

04

Conclusion

Summarize and interpret the results

INTRODUCTION

- Formula One (or F1) has been one of the premier forms of racing around the world since its inaugural season in 1950.
- F1's large fan base ensures that there is a plethora of publicly available data on F1 race results online, and the potential for statistical analysis of these data is high. - Bell et. al 2016
- In our presentation, we investigate and determine if there are patterns that a racer follows on the path to victory.
- Through our various data visualizations, we aim to portray F1 racing results in a graspable manner.
- Hypothesis → The most important factors for success in an F1 race are pole position, total points, fastest laps, number of podiums, and first WDC age.



METHODS



Data Set

- Manually created by combining data from the Formula 1 official site, Stats F1 and pitwall.app.
- Various statistics were collected from 2006 - 2021 and the different eras were represented




Visual Analysis

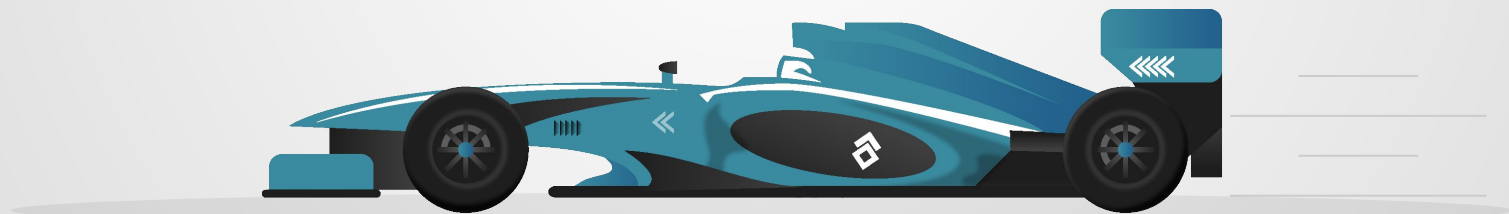
- Used multiple linear regression to analyze important factors for victory
- Created various graphs including pie chart, stacked bar chart, line chart, bubble chart, etc. using ggplot, plotly, gganimate, tidyverse, gifski
- Utilized [“f1dataR” R package](#) to access Ergast API and the official F1 data stream to create a couple graphs



METHODS (continued)

- Visualized how a driver performs his qualifying lap, and is at the absolute limits of it at every corner. Parameters used - speed and gear ratios.
 - Racing is exciting due to different factors like weather (heavy rain), safety car during an incident, pitstop timings, track temperature.
- 

RESULTS DASHBOARD



CONCLUSIONS

POLE POSITION

Better the pole position, the chances of winning are higher

AGE

A racer is more likely to win if they are younger in age

PODIUM

Having a podium increases the racer's likelihood to win a Championship

BEST DRIVER '21

Max Verstappen

WORST TEAM (2021)

Haas F1 Team

BEST TEAMS (2021)

Mercedes and Red Bull

FASTEST LAP

Negative Correlation with Wins

BEST DRIVER

Lewis Hamilton



THANK YOU!

- Do you have any questions?

References

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