**Predict F1 Results**

**Background**

Formula 1 is the highest class of international single-seater auto racing, regulated by the Fédération Internationale de l'Automobile (FIA). The FIA Formula One World Championship has been one of the premier forms of racing around the world since its inaugural season in 1950. A Formula 1 season consists of a series of races, known as Grands Prix, held on purpose-built circuits or closed public roads in different countries and continents. Each race typically lasts around 90 minutes, and the championship usually features between 20 and 24 events per year (the number of races increased in the past few years). Teams develop highly advanced cars, capable of reaching speeds over 300 km/h (about 186 mph), and drivers must obtain a special license from the FIA to compete.

**Dataset Description**

The dataset that I used in this project were obtained in the following link: <https://www.kaggle.com/datasets/rohanrao/formula-1-world-championship-1950-2020?resource=download>

It consists in data from all the races between 1950-2024, and also contains data from each circuit, constructors, qualifying, etc. Further on you’ll see other data that I worked on.

**Objectives**

Build a model to predict the race results, qualifying results, sprint results. Based on those predicts is possible to predict the Drivers and Constructors Champion.

**Data**

* **Data Import**
* **Data Analysis:** analyse the plots and explore data
  + Circuits stats
  + Pilots stats
* **Data Cleaning:** missing values, outliers and duplicates
* **Data Visualization:** histograms, pie charts, box plots, correlation plots
  + Choropleth Map (circuits geographic data)
  + Line Chart (comparison of pilots performance through the years, in selected years and specific pilots)
  + Treemap (comparison of points won in a specific year)
* **Feature Extraction**

**Model**

* **Implementation**
* **Hyperparemeter Tuning**
* **Evaluation**

**Libraries and Language**

* Plotly, pandas, numpy, datetime

**Results and Discussion**