

IT UNIVERSITY OF COPENHAGEN

Fernando Alonso's Career Analysis

Data Visualisation and Data-driven Decision Making

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Github: /Pheadar/DataViz_2024
Interactive Dashboard: The Visual Story of Alonso's Career

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1 Introduction

Fernando Alonso, a Spanish Formula 1 driver, began his career in 2001 and remains active as of 2024. This project provides an overview of his remarkable longevity in the sport, highlighting his two world championship titles in 2005 and 2006 with the Renault F1 Team.

The goal is to present a dashboard showcasing key facts about Fernando Alonso's extensive career in Formula 1. In elite sports, data is continually recorded and analyzed to improve performance, while fans enjoy visualizations of their favorite athletes and teams.

2 Data

The data was scraped using the Ergast Developer API¹. This open source API provides historical Formula 1 data, including information on drivers, teams, circuits, race results, and more. The data was scraped as json files and then treated and transformed into pandas² dataframes for analysis. The collection included qualifying (when available) and race results for all races for the seasons 2001 to 2024, including the latest available race of the current season. The resulting files were then merged into one for each type of result (qualifying and race) and turned into pandas dataframes for the relevant information: circuits, drivers, teams, races, and results. The race information dataframe also includes course length of each circuit layout used for each race, scraped from Wikipedia³.

3 Dashboard

3.1 Implementation

All visualizations were created using Flourish⁴, a tool that allows for the creation of interactive visualizations and stories. We chose to post our visualizations via GitHub pages, a free service provided by Github.com, so that they could be interactive. This suggested using some HTML and CSS code to get the required functionality and layout. The dashboard consists of three main parts: a career timeline, a component with two smaller visualizations, and a cards carousel visualization that displays Alonso's data for each team.

3.2 Visualizations

The different visualizations used to show Fernando Alonso's career in Formula 1 were structured in the dashboard with the goal of providing a consistent design choice and a good flow of information to the user.

¹ergast.com

²pandas.pydata.org

³wikipedia.org

⁴flourish.studio

3.2.1 Career Overview

The first visualization provides a Career Overview, showing the seasons and teams Alonso raced for in Formula 1. For this visualization, we used a Gantt chart since it accentuates the time frame of his career and makes a clear delimitation between each segment of his career. The colors were chosen based on the teams main colors, this allows the viewer to identify the brand based on their identity. Furthermore, being an industry standard, having the teams main colors gives the opportunity to make a clear difference between each step of his career. In order to put a spotlight on his to biggest achievements, winning the World Driver Championship, we highlighted the respective years with a transparent, yellow color and marked them with a dotted red line, each accompanied by a trophy emoji.

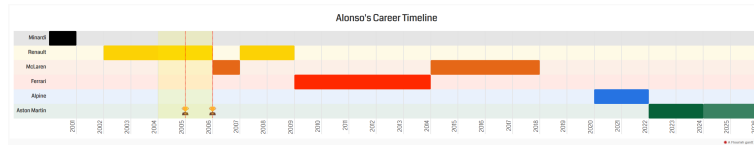


Figure 1: Career Overview

3.2.2 The Championship Seasons

As shown in the Career Overview, Alonso won the championship twice. In an effort to show the two seasons where that happened in detail, we created a pair of visualizations. For an easy transition between the 2005 and 2006 seasons, there is a button above these two visualizations that seamlessly changes which version is shown to the user, according to the season they have selected (Figure 2).

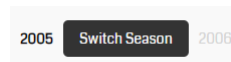


Figure 2: Switch Season button with 2005 selected

The first of these two visualizations, on the left, is a Line Chart Race that follows the path of the top 5 drivers in the Driver's Championship throughout the season. It plays automatically when the page is loaded and has two options for the y-axis: **Points** and **Position**. These are easily select-able from two buttons at the top of the chart, next to a replay button allowing the user to restart the animation. The animation follows the races of the season in chronological order, and the lines for each driver move accordingly to the cumulative points or championship position at each race in the season. Each line trails a circle with the driver's portrait inside, and the colours are chosen according to the driver's team in the season. Next to each portrait, the driver's name and the

points or position are shown according to which chart mode is selected. These update dynamically as the animation progresses.

The visualization on the right shows the **Story** of the season over a globe with several red dots at different locations. At the top, a short paragraph explains the usage: there are two arrow buttons that allow the user to follow the unfolding of events. The globe moves to show the location of the events described at the top, and the red dots on the map show the event's details when hovered. The instructions for panning, zooming and hovering over different dots on the map are written in a non-intrusive note underneath the globe. The colors chosen are white, light gray and red for the dots, as it stays consistent with the overall look of the dashboard without being too intrusive.

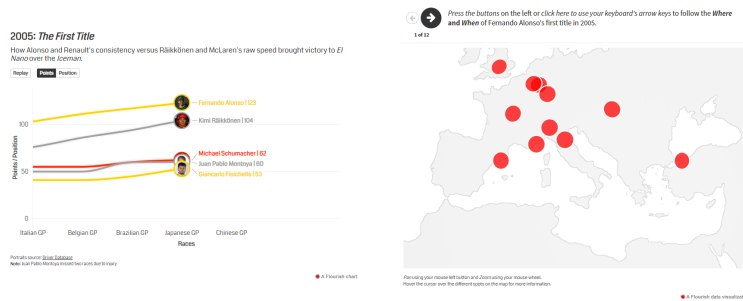


Figure 3: The 2005 Season

3.2.3 Teams

The Teams visualization shows different cards, one for each team Alonso raced for in Formula 1. The card hue was chosen based on the team's colors, and the background images are chosen from the corresponding seasons. When hovering over each card, information related to the stints at each team is shown.

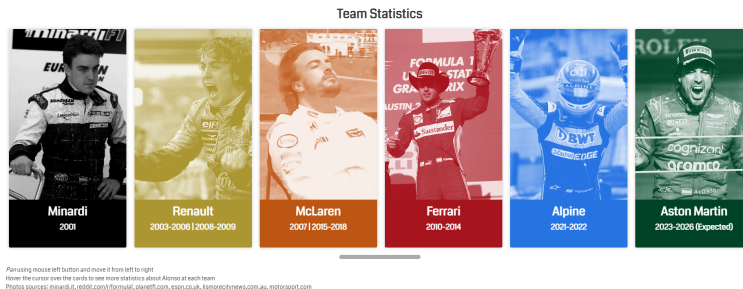


Figure 4: Teams