

A large commercial airplane is shown from a low angle, flying across a sky with a warm, orange and brown sunset or sunrise gradient. The plane's wings, engines, and tail are visible, and it appears to be moving from left to right. The text is overlaid on the upper half of the image.

DIVING INTO THE AVIATION INDUSTRY: A DATA-DRIVEN APPROACH

OBJECTIVE

This project aims to identify airplane makes and models with the lowest risk profiles



BUSINESS UNDERSTANDING

A large commercial airplane is shown in flight, viewed from a low angle. The aircraft is dark blue with orange accents on the tail and wingtips. It is flying against a backdrop of a sunset or sunrise sky, with warm orange and yellow hues. The plane is positioned horizontally across the middle of the frame, with its wings extending towards the left and right edges.

Our company seeks to expand into the air travel sector for both business and personal purposes

Making data-driven decisions ensures that informed decisions are made during fleet acquisition

DATASET OVERVIEW

- Data source: NTSB Aviation Accident Synopsis(Kaggle)
- Key Variables for analysis:
 - Event Id
 - Make
 - Model
 - Number of Engines

METHODOLOGY

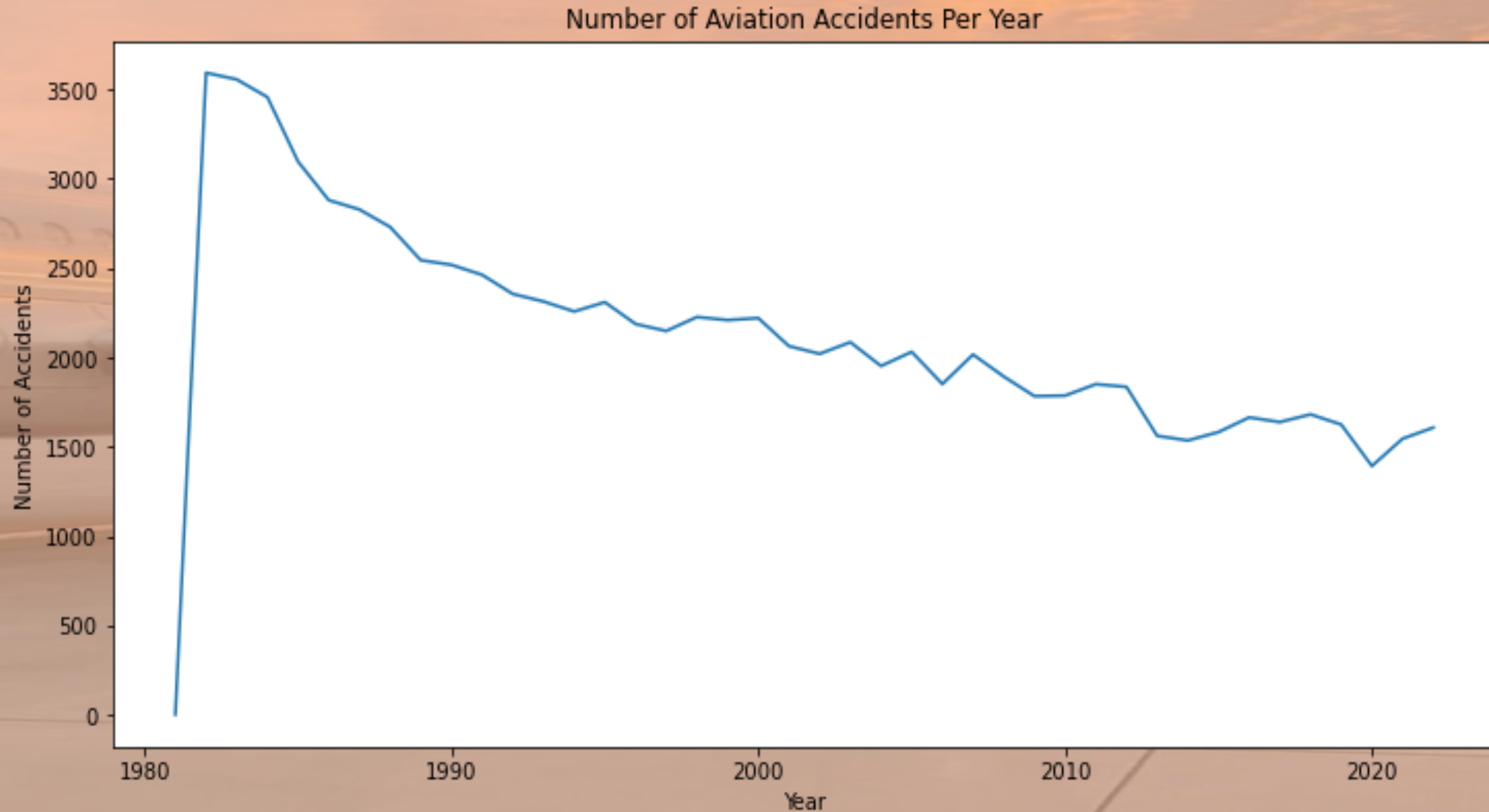
A large commercial airplane is shown in flight, viewed from a low angle. The plane is dark, possibly black or dark blue, with a lighter-colored tail. It is flying against a background of a dark, cloudy sky with a hint of orange light, suggesting a sunset or sunrise. The plane's wings and engines are visible, and it appears to be moving from left to right across the frame.

Data cleaning and preparation

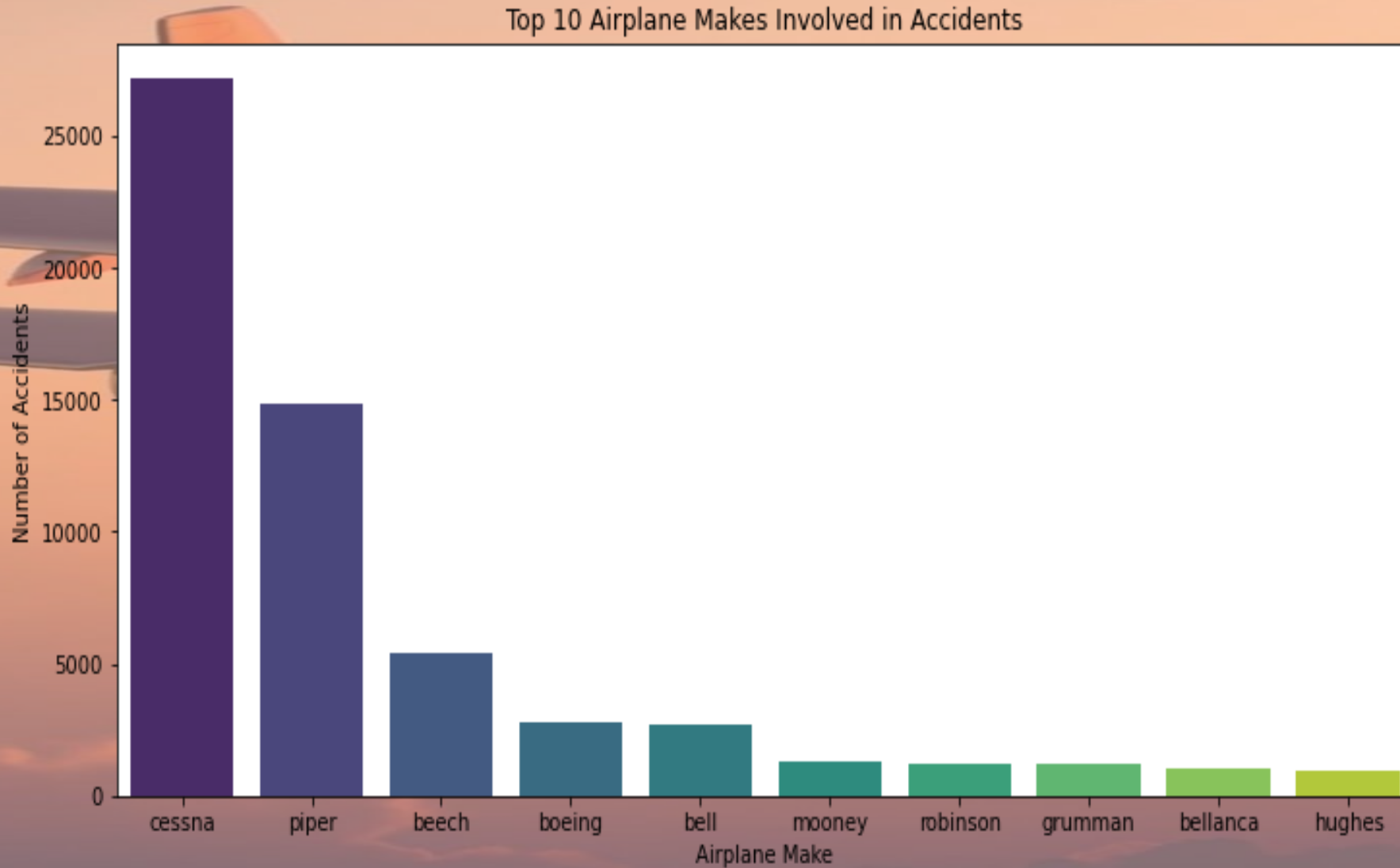
- Dropped columns with too many missing values that were not key for analysis (Latitude, longitude, Airport name, Airport Code)
- Dropped duplicate values
- Selected columns that would be used in analysis (Even Id, Make, Model, Number of Engines)

VISUALIZATION

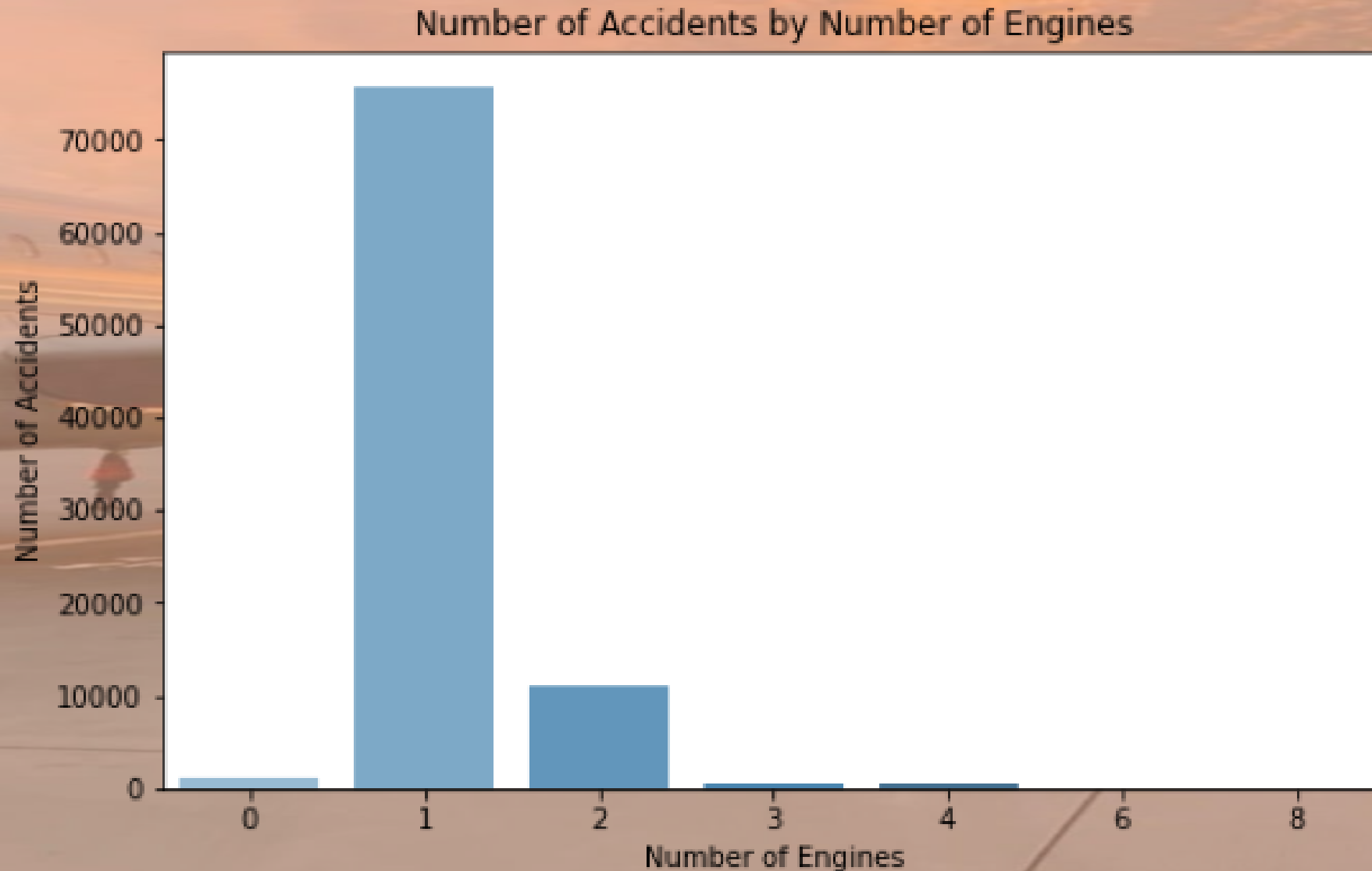
Line chart showing the number of aviation accidents over the years



Bar chart showing the top 10 airplane makes with the most accidents



Bar chart showing the number of accidents by number of engines



RECOMMENDATIONS

A large commercial airplane, likely a Boeing 747, is shown in flight against a dark, hazy sky. The aircraft is positioned diagonally across the frame, with its tail on the left and its nose pointing towards the upper right. The lighting is dim, suggesting twilight or dawn, with a soft glow around the plane's fuselage. The background shows dark, silhouetted hills or mountains.

A number of aircraft makes and models were identified to have the least number of accidents and lowest number of fatal injuries.

Aircrafts with one engine are highly unlikely to experience technical difficulties during flights.

Recommendation

- Prioritize low risk airplane makes and models for initial purchases.
- Constantly monitor aviation safety data as operations continue to expand.

A large commercial airplane is parked on a tarmac during a dramatic sunset. The sky is filled with orange and yellow clouds, and the sun is low on the horizon. The airplane's wing and engine are prominent in the foreground. Two small figures of people are visible near the wing. The word "QUESTIONS?" is overlaid in white, serif font in the center of the image.

QUESTIONS?

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THANK YOU.

Charity Kanyua,
Junior Data Scientist.

A large commercial airplane is shown in flight, viewed from a low angle. The plane is dark blue with orange accents on the tail and wingtips. It is flying against a backdrop of a sunset sky with warm orange and yellow hues. The text "THANK YOU." is overlaid in a large, white, serif font, and the name "Charity Kanyua, Junior Data Scientist." is overlaid in a smaller, white, serif font below it.