ralphy89 / dsc-phase-1-project

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README

Aircraft Risk Analysis

Overview

This project analyzes historical aviation accident data to identify low-risk aircraft types for commercial and private acquisition. The goal is to provide data-driven recommendations to support strategic investment decisions in the aviation sector.

Explore the Interactive Power BI Dashboard

Business Understanding

Stakeholder

The head of the aviation division at a company exploring entry into the aviation sector by acquiring aircraft.

Key Business Questions:

1. What are the key factors contributing to aircraft risk?

2. Which aircraft types have the historically safest records?
3. What three specific aircraft models should the company prioritize for purchase?

Data Understanding and Analysis

Source of Data

The dataset comes from the National Transportation Safety Board (NTSB) and contains over 90,000 aviation accident records from 1962-2023.

Data Description

The dataset includes 31 columns with information about:

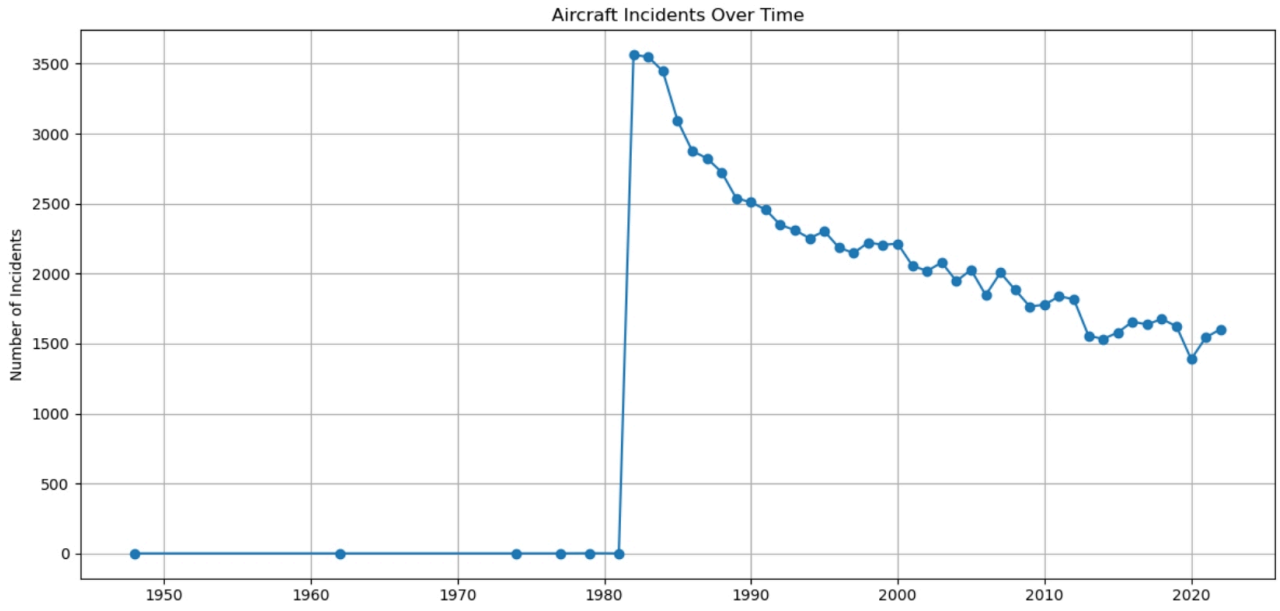
- Aircraft specifications (Make, Model, Engine Type, etc.)
- Accident details (Date, Location, Weather Conditions)
- Outcomes (Injuries, Damage, Fatalities)
- Flight details (Phase, Purpose)

Key features selected for analysis:

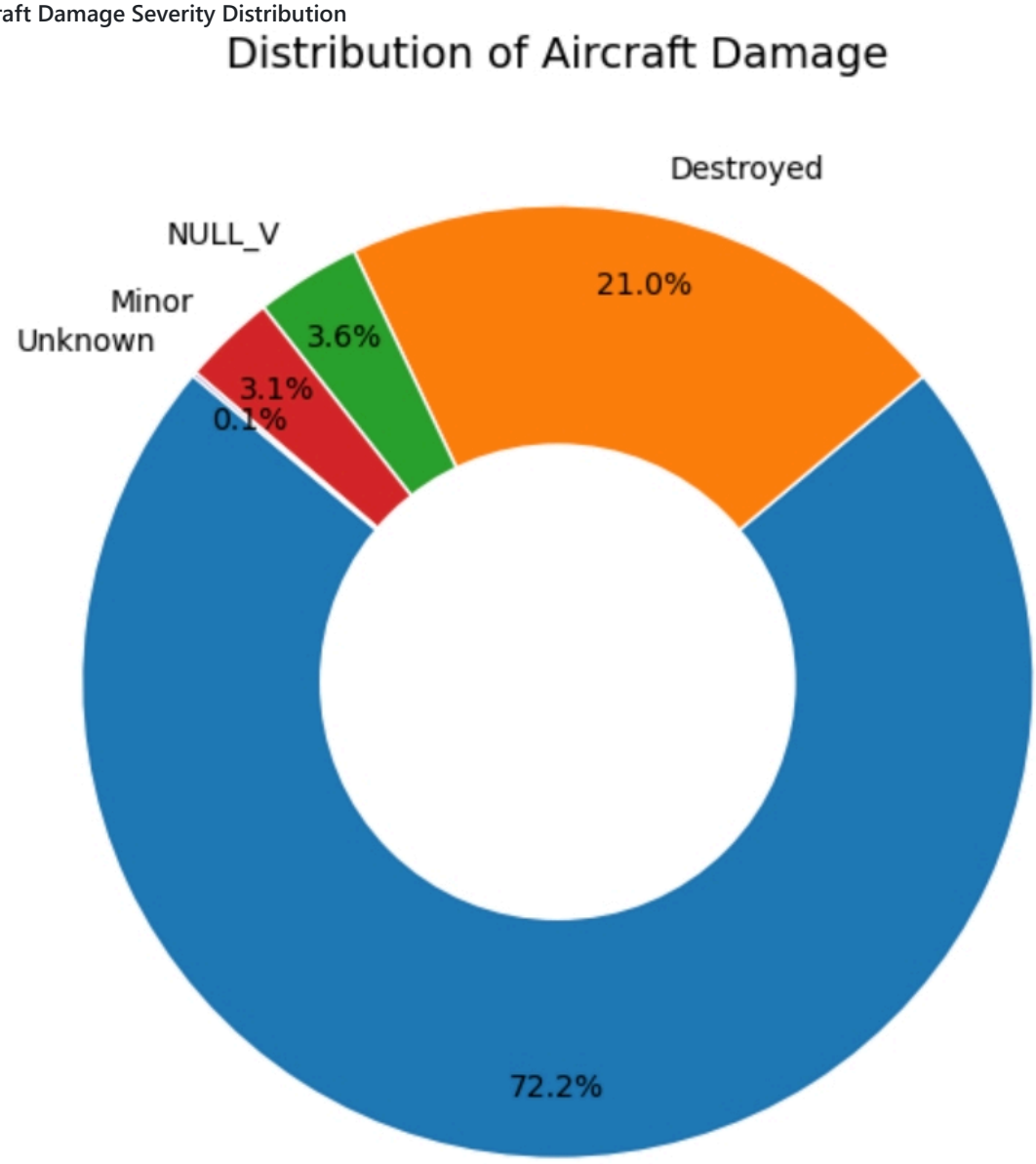
- Make & Model
- Aircraft damage
- Injury severity
- Number of engines
- Weather conditions
- Phase of flight

Data Visualizations

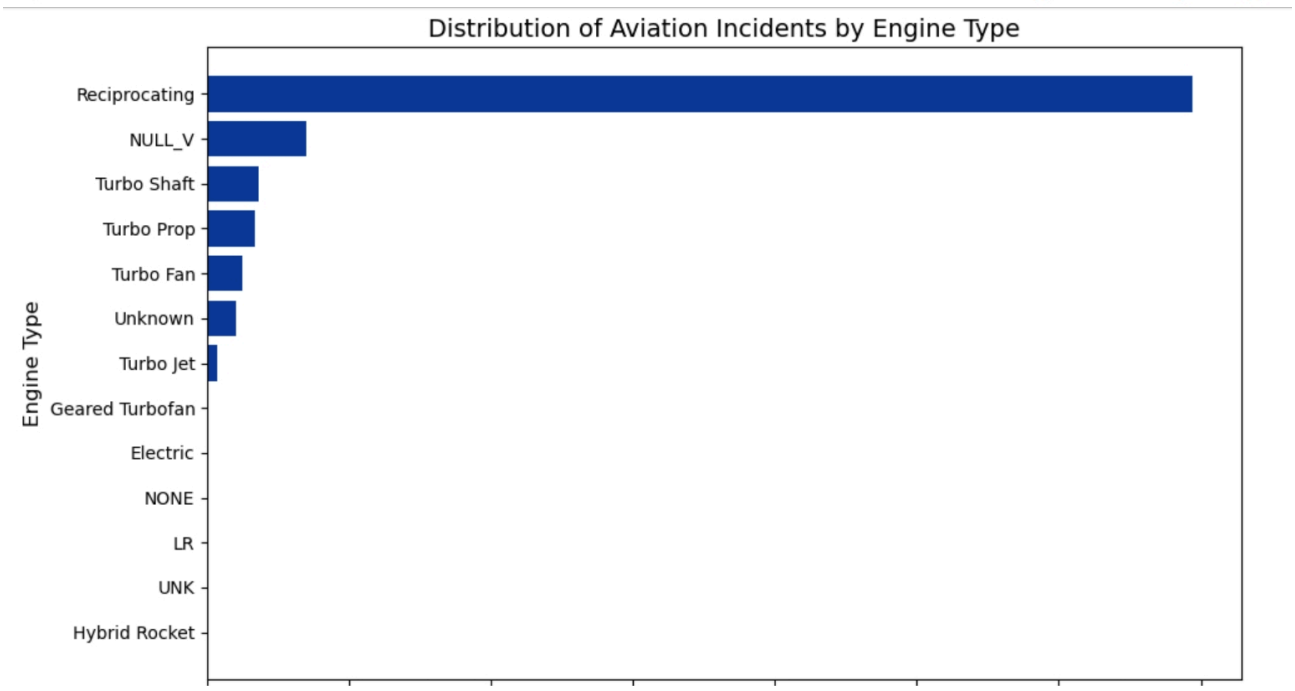
1. **Trend of Aircraft Incidents Over Time**



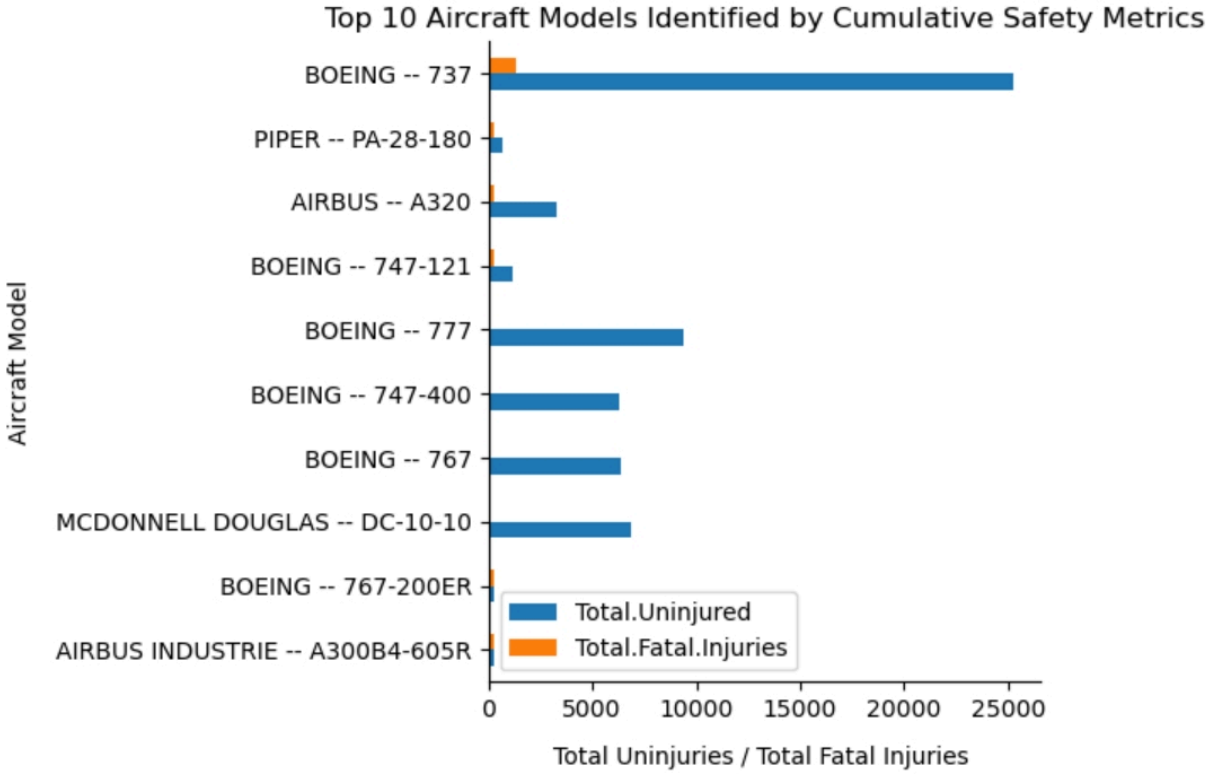
2. **Aircraft Damage Severity Distribution**

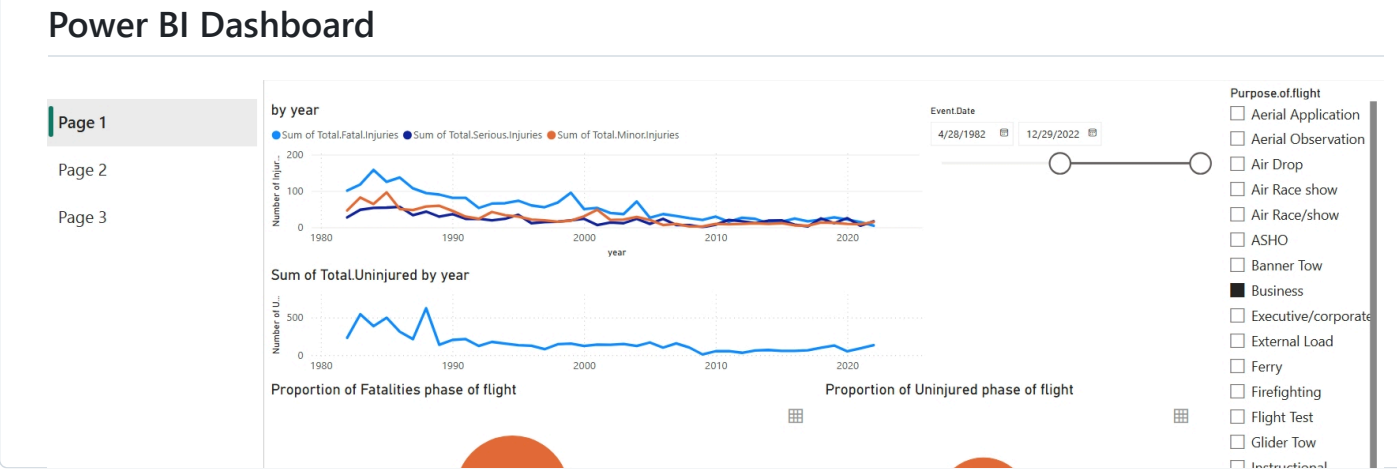


3. **Accident Severity by Engine Type**



4. **Top 10 safest models (high uninjured, low injuries)**





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