Analysis of Lowest Risk Aircraft

With emphasis on Engine Type and Purpose of Flight

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Investing in Aircraft

The Problem

- How do we expand our line of business within the bounds of our risk tolerance?
- How do we determine which industries or aircraft are safest?
- Do we have enough data to inform a market entry strategy?

Investing in Aircraft

The Solution

- Sanitization
- Value imputation
- Feature Engineering to derive risk

Methodology

Assumptions

- Focus on ***Airplanes only***
- Impute missing values with ***external research***
- Remove samples that contain:
  - *Too many unique values*
  - *Too many missing values*
  - *Too few samples*

Methodology

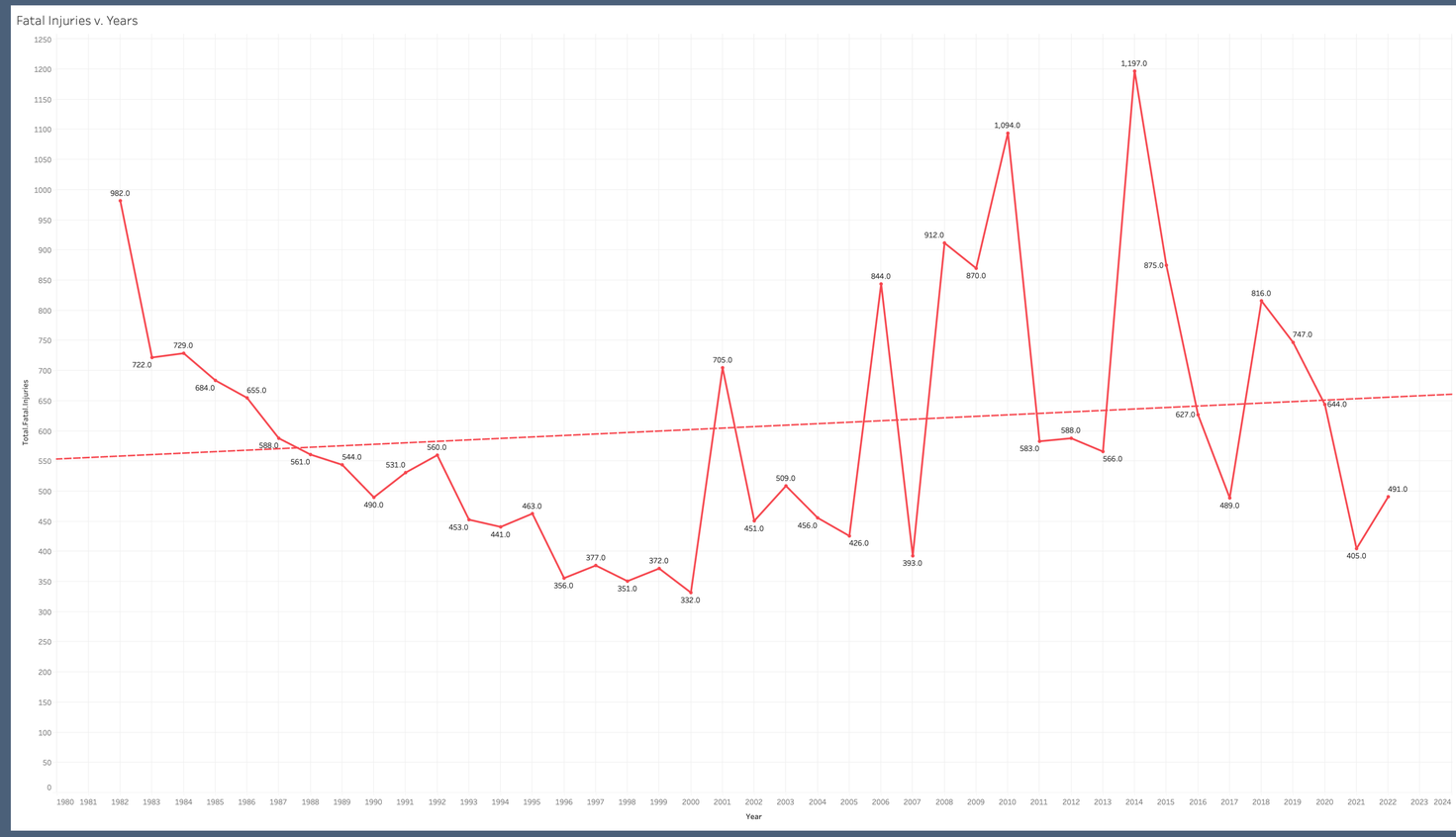
Feature Engineering & Calculating Risk

- Calculate risk:
  - ***Fatal, serious, minor injuries***
  - ***Total Uninjured***
- Focus on *Actionable Business Features*:
  - ***Engine Type***
  - ***Purpose of Flight***

Findings

Safety over the years

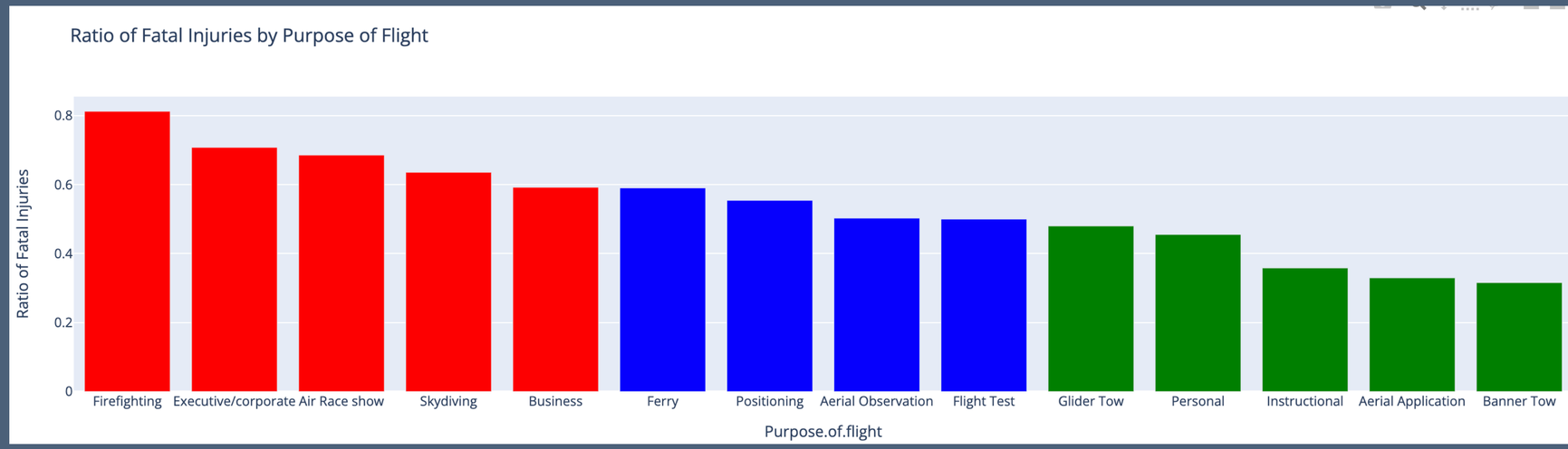
- The Data shows **a positive trend in Fatal Injuries** over the years.
- What does it mean?
  - Any investments should be ***researched thoroughly***
  - We should **not invest *broadly* in aircraft**



Findings

Safest Industries

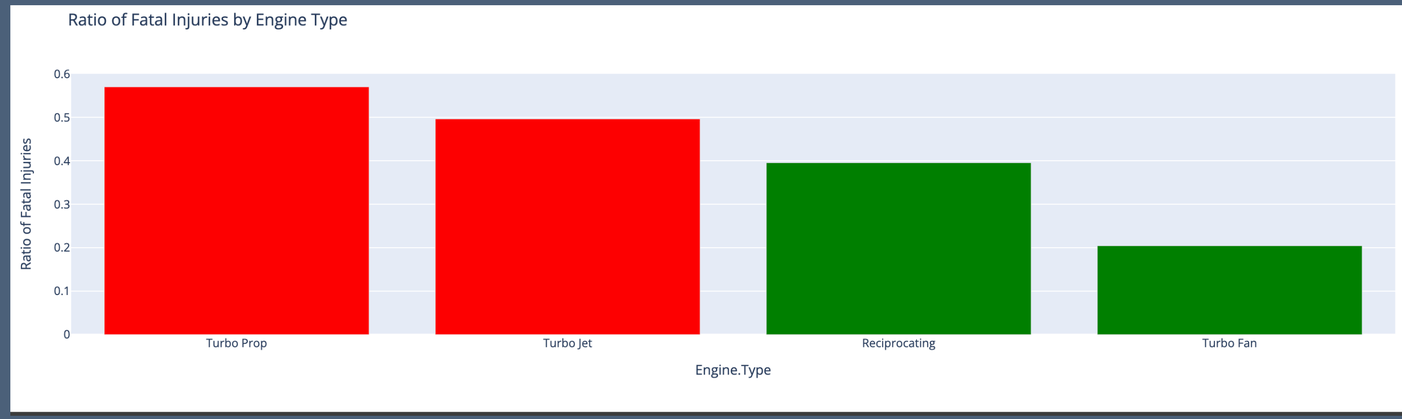
- **Banner Tow**
- **Instructional**
- **Aerial Application**



Findings

Safest Engine Types

- **Turbo Fan**
- **Reciprocating**



Problem Solution

& How Recommendations were determined

- Solve for **Risk** using **Fatality Rates**
- Consider **macro** and **micro features** in the dataset to determine:
  - *General trends*
  - *Specific feature analysis*

Recommendations

& Conclusions

- ***Do not*** recommend broad investment in aircraft
- Invest in the following industries to minimize risk:
  - **Banner Towing**
  - **Instructional**
  - **Aerial Application**
- Invest in manufacturers or industries using **Turbo Fan** based engine architectures

Considerations

& confidence, limitations and enhancements

- Using **other metrics** for ***risk***
- **Data Augmentation** & Heuristics
- **Verifying** Initial Assumptions
- **Testing** Statistical Significance

Questions and Answers

& Thank you

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