Skybound Insights: Decoding Passenger Feedback

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Introduction

Passenger feedback is vital for airline improvement. Leveraging Skytrax data, we aim to unearth valuable insights into the experiences and sentiments of travelers. Through sentiment analysis and insightful visualizations, we strive to extract meaningful patterns that can drive enhancements in customer satisfaction and fuel ongoing improvements across the aviation sector.
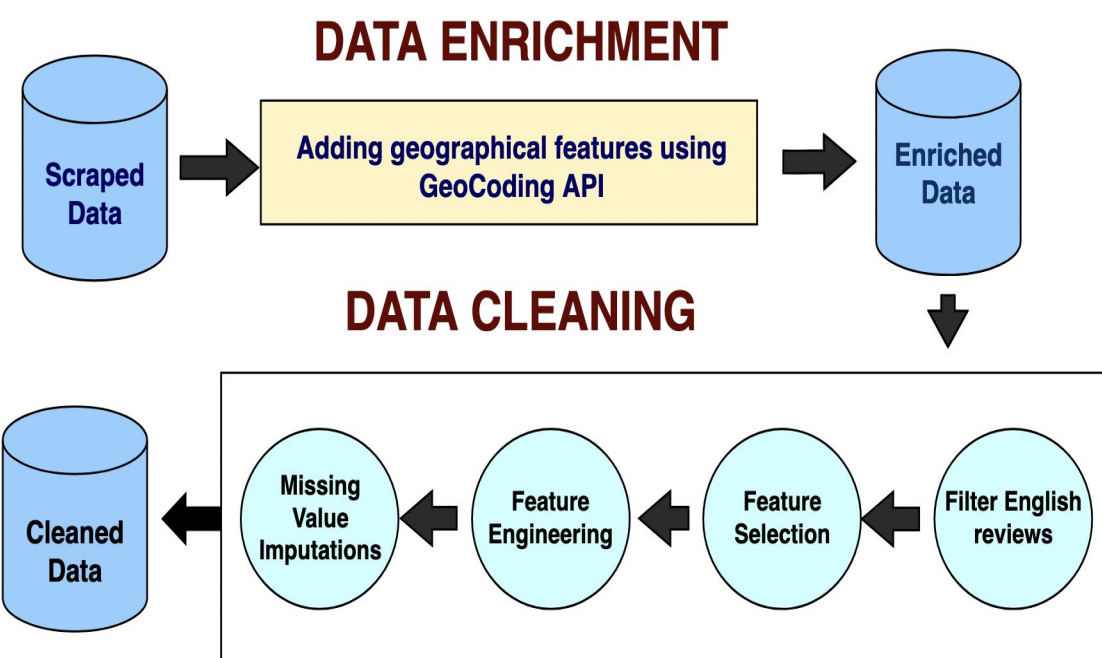
Data Retrieval

Utilizing BeautifulSoup, data was meticulously scraped from www.skytrax.com accumulating a comprehensive dataset of ~13,000 reviews. These reviews encapsulate the diverse experiences of passengers across seven major airlines.
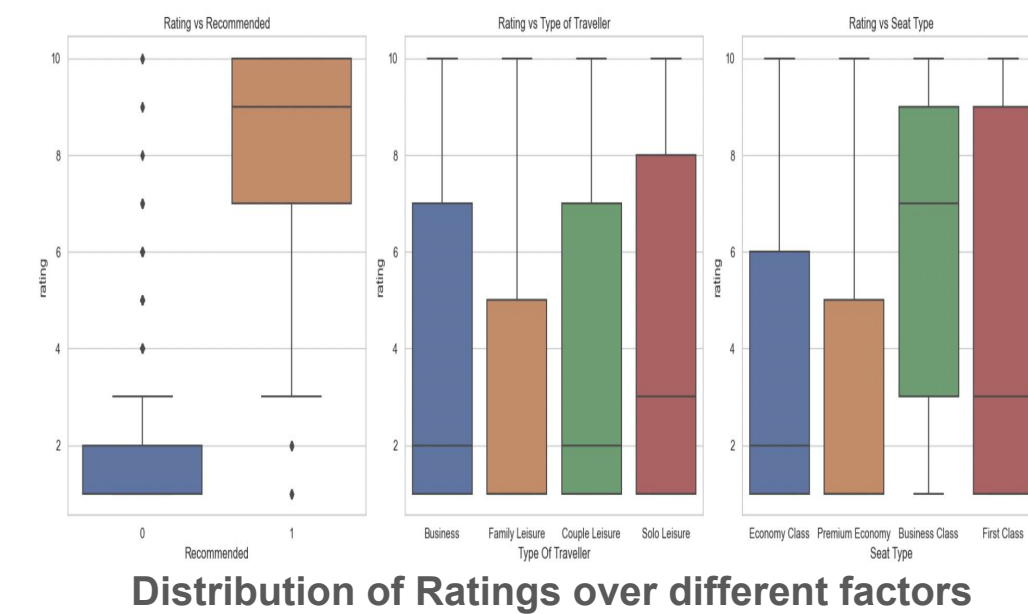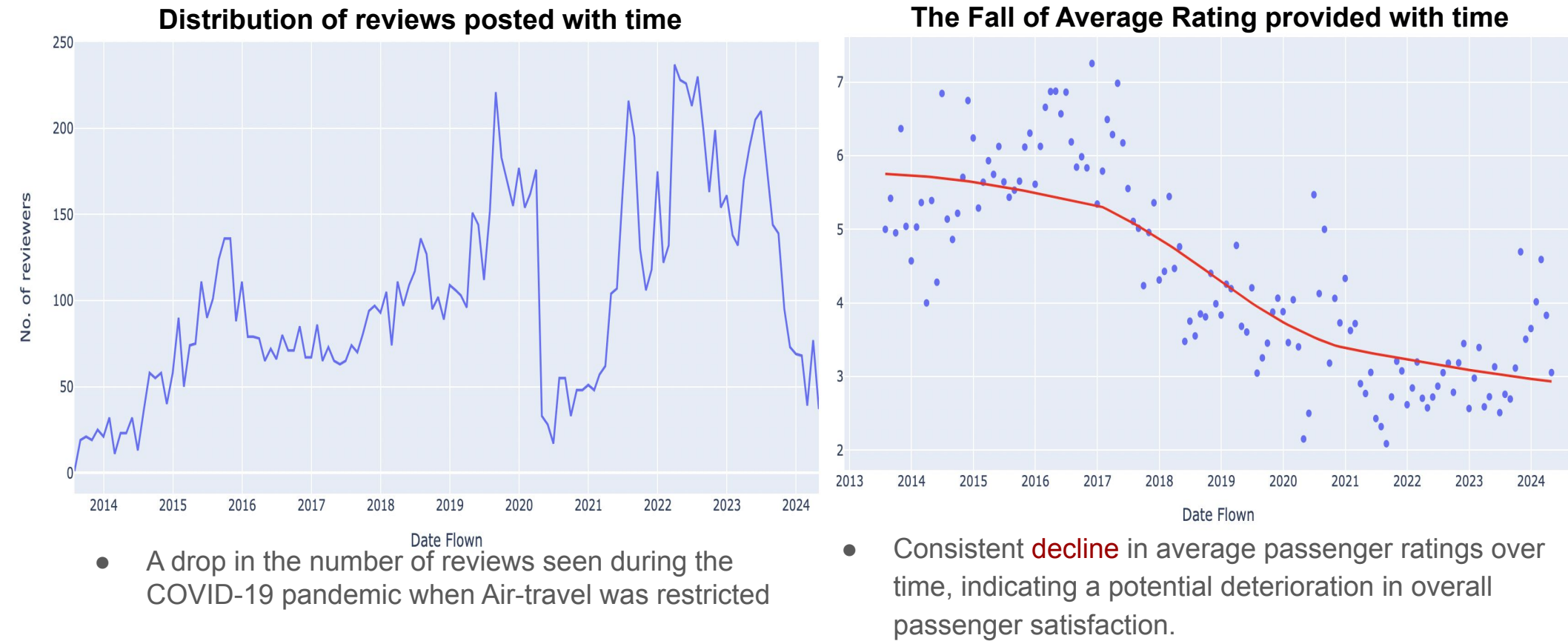
Data Attributes

- Rating
- Country
- Date Flown
- Route
- Review text
- Type of Traveller
- Seat type
- Date Flown
- Seat Comfort
- Cabin Staff Service
- Value For Money
- Food and Beverages
- Inflight Entertainment
- Ground Service
- Recommended
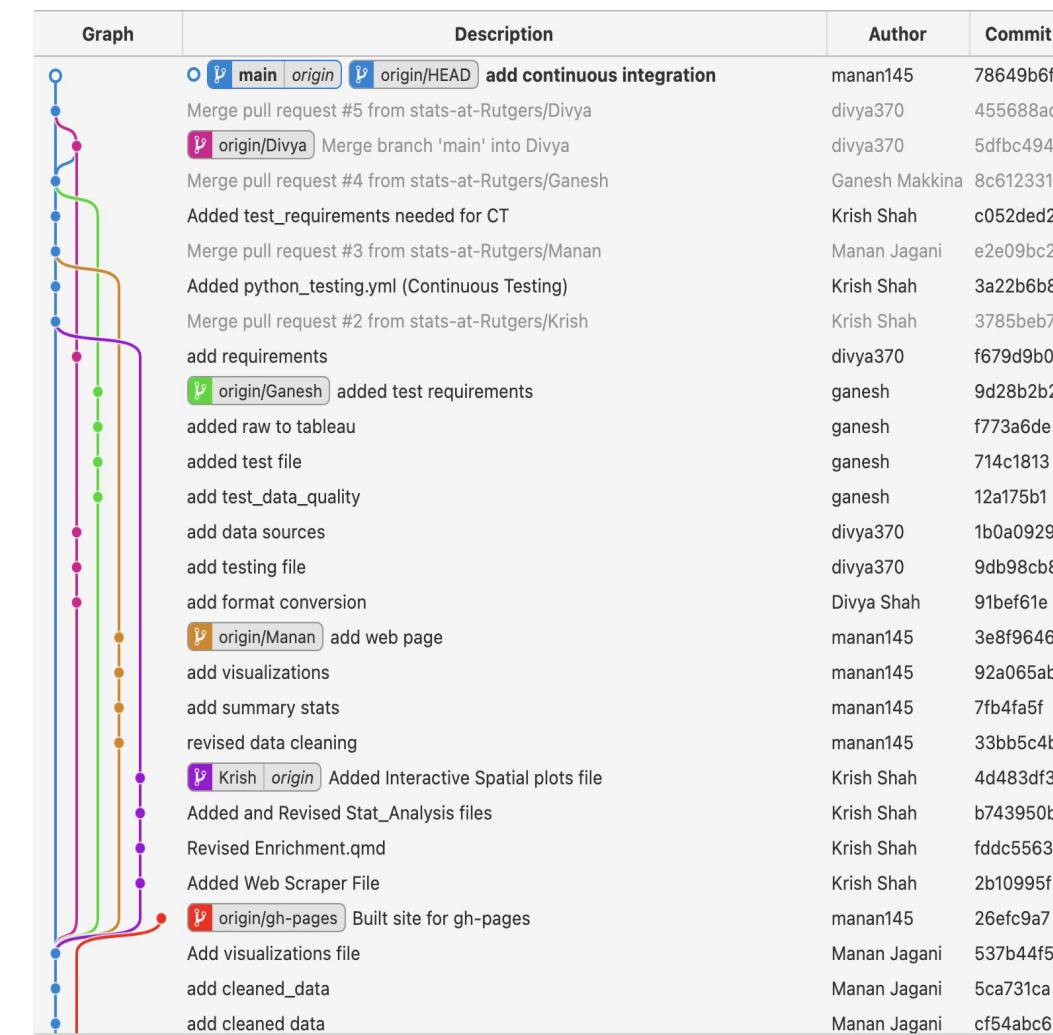- Airline Name
- Author

Data Processing

DATA ENRICHMENT

Scraped Data → Adding geographical features using GeoCoding API → Enriched Data

DATA CLEANING

Cleaned Data ← Missing Value Imputations ← Feature Engineering ← Feature Selection ← Filter English reviews

Exploratory Data Analysis

Distribution of reviews posted with time

- A drop in the number of reviews seen during the COVID-19 pandemic when Air-travel was restricted

The Fall of Average Rating provided with time

- Consistent decline in average passenger ratings over time, indicating a potential deterioration in overall passenger satisfaction.

Distribution of Ratings over different factors

Passenger Ratings

Spirit Airlines	1.65
Delta-Airlines	2.42
United Airlines	2.52
Etihad-airways	4.00
Ryanair	4.00
Emirates	5.12
Qatar-airways	7.29

Average Review Length — 146.68

Average Rating given by Passengers — 3.97

Sentiment Analysis

Passenger Sentiment Proportion vs Airlines

- We used RoBERTa model pre-trained on tweets data for Sentiment Analysis.
- Grouped Sentiments into Positive, Neutral and Negative based on polarity scores.
- Qatar Airways had the highest proportion of positive reviews while Spirit Airlines had the highest proportion of negative reviews.

Density of Positive Reviews by Country

High density of positive reviews in certain countries suggests strong markets and satisfied customers, offering valuable insights for airlines to reinforce successful strategies and enhance operations globally.

Positive Reviews

Negative Reviews

Density of Negative Reviews by Country

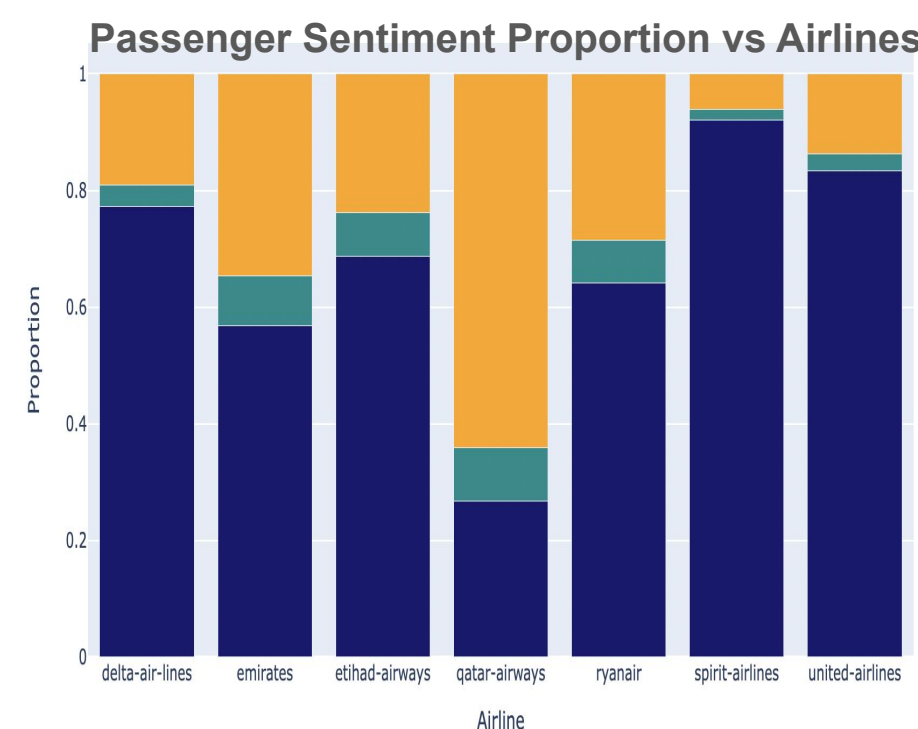For more Visualizations Scan Me

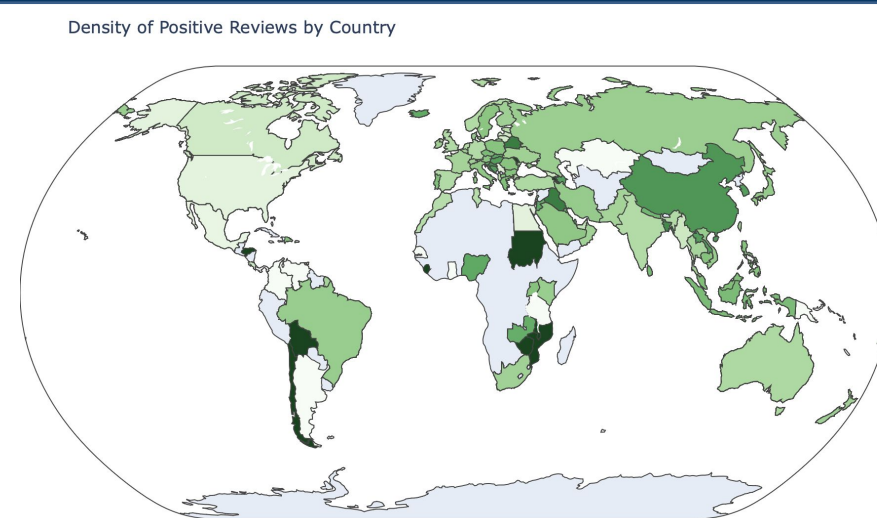## Commit History Graph

Inferences

- The analysis highlights a prevalence of negative reviews, emphasizing service disruptions and inconvenience.
- Positive feedback consistently underscores attributes such as cleanliness, comfort, and friendly service.
- Qatar Airways emerges as a leading performer, while Spirit Airlines faces notable hurdles.
- A troubling trend of declining review quality over time is evident, indicating potential shifts in passenger expectations.
- These findings offer airlines valuable opportunities to address weaknesses and capitalize on strengths, ultimately enhancing customer satisfaction and competitiveness.