NPS Classifier based on Airline Reviews

Text and Social Analytics Project

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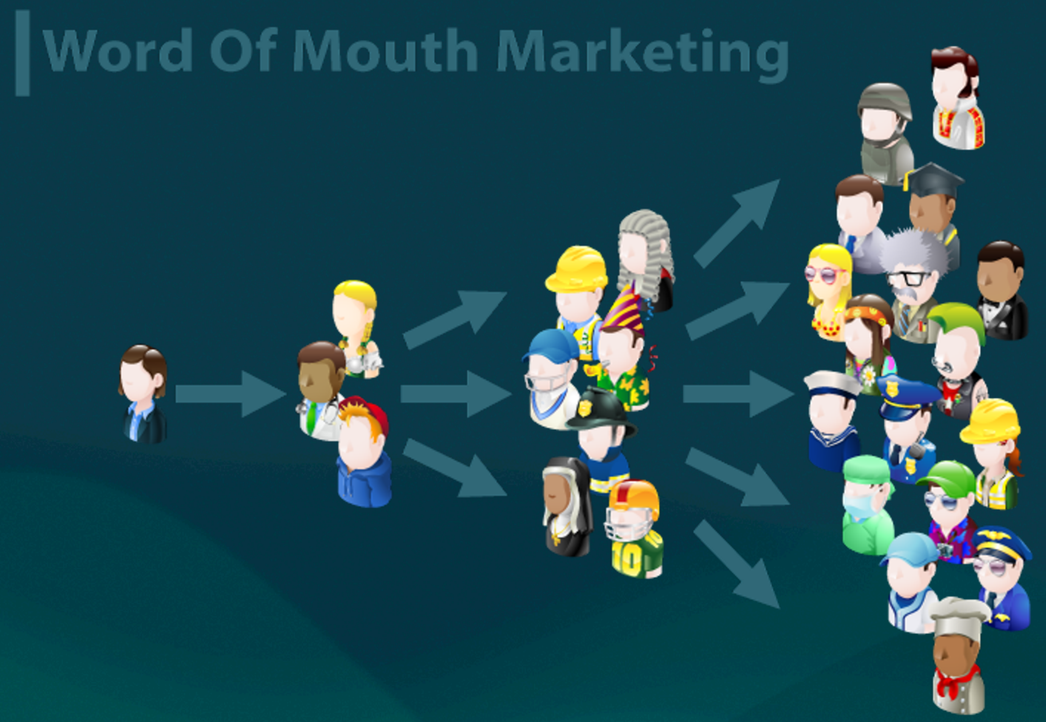
Agenda

- Business Understanding
- Data Collection and Preparation
- Modelling
- Evaluation
- Deployment

Business Understanding

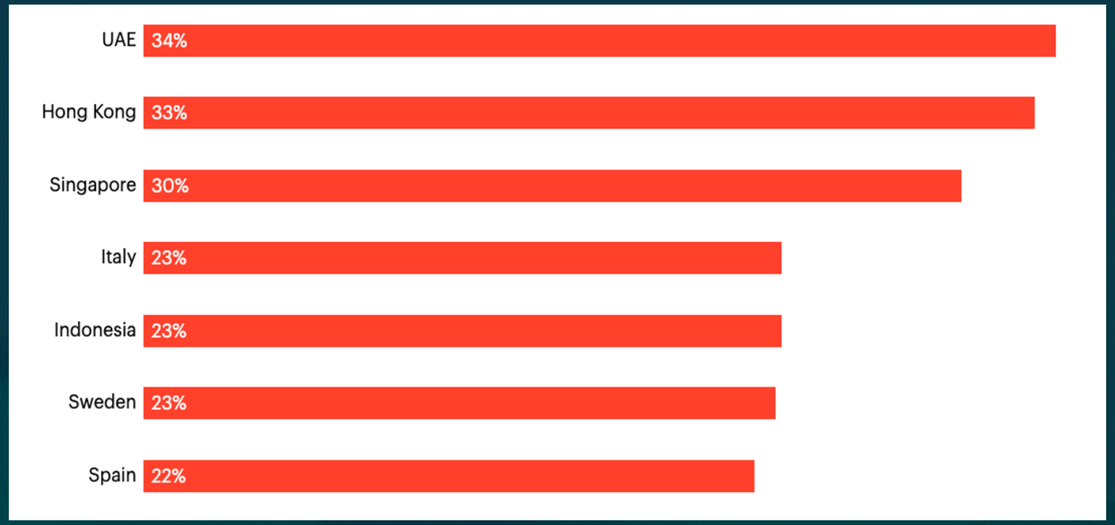
Evolution of WoM to eWoM

- Word of Mouth (WoM) is a form of communication that is highly trusted and influential in the consumer world.
- The digital age has transformed WoM into electronic WoM (eWoM).
- •Online reviews, social media, and forums have
  - Broadened accessibility
  - Longer lasting impact
- E-WoM is particularly valuable for services like airlines and hotels, where first hand experience is limited.
- Consumers increasingly rely on online reviews to gauge service reputation.



eWoM's Impact on the Airline Industry

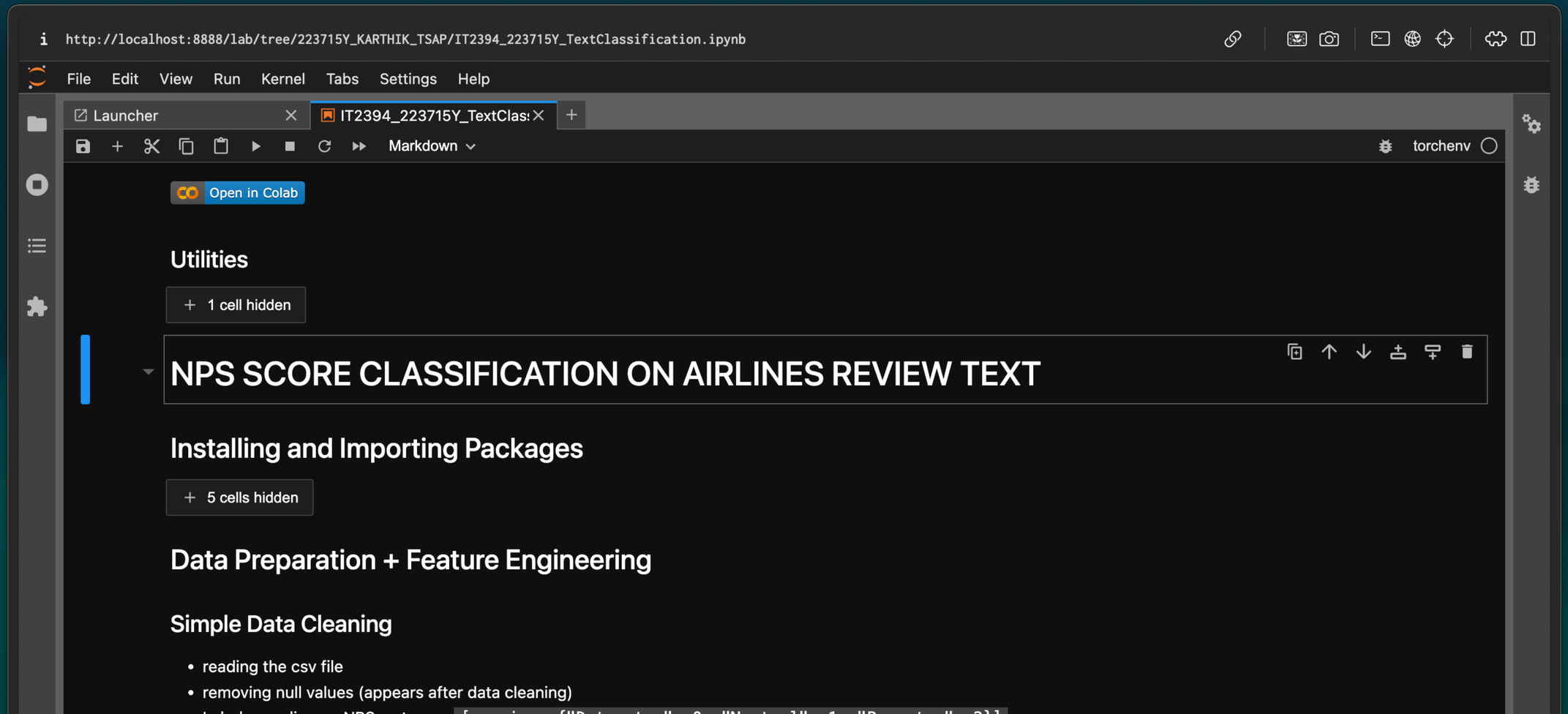
- 96% of customers consult online reviews before decisions.
- A one-star increase in ratings can enhance revenue by 5% to 9%.
- Online reviews are more critical in the airline industry than in many others.
- Safety-related reviews, especially post-COVID-19, have a profound effect on consumer choices.
- Airlines leveraging eWoM, like Qatar Airlines, witness significant sales growth.
- In Singapore, 30% of respondents use reviews to choose airlines, ranking it third behind UAE and Hong Kong.
- In the competitive airline market, understanding and influencing eWoM is key to sustaining customer relationships and achieving long-term growth.



Requirements

Data Sources	• Capable of processing reviews from multiple platforms. • Initially focusing on English language text for simplicity.
Data Labelling	• Utilize existing review ratings (from 5 and 10-point scales) to assign NPS labels. • Ratings will guide the determination of Promoters, Neutrals, and Detractors.
Model Selection	• Explore machine learning algorithms such as SVM, Gradient Boosting, and Random Forest for efficient and effective model development.
Performance Objectives	• Prioritize high recall to minimize false negatives, particularly for Detractors and Neutrals, as overlooking these can result in business loss. • Employ cross-validation techniques to ensure model robustness and consistent performance across different data subsets.

Project Demo

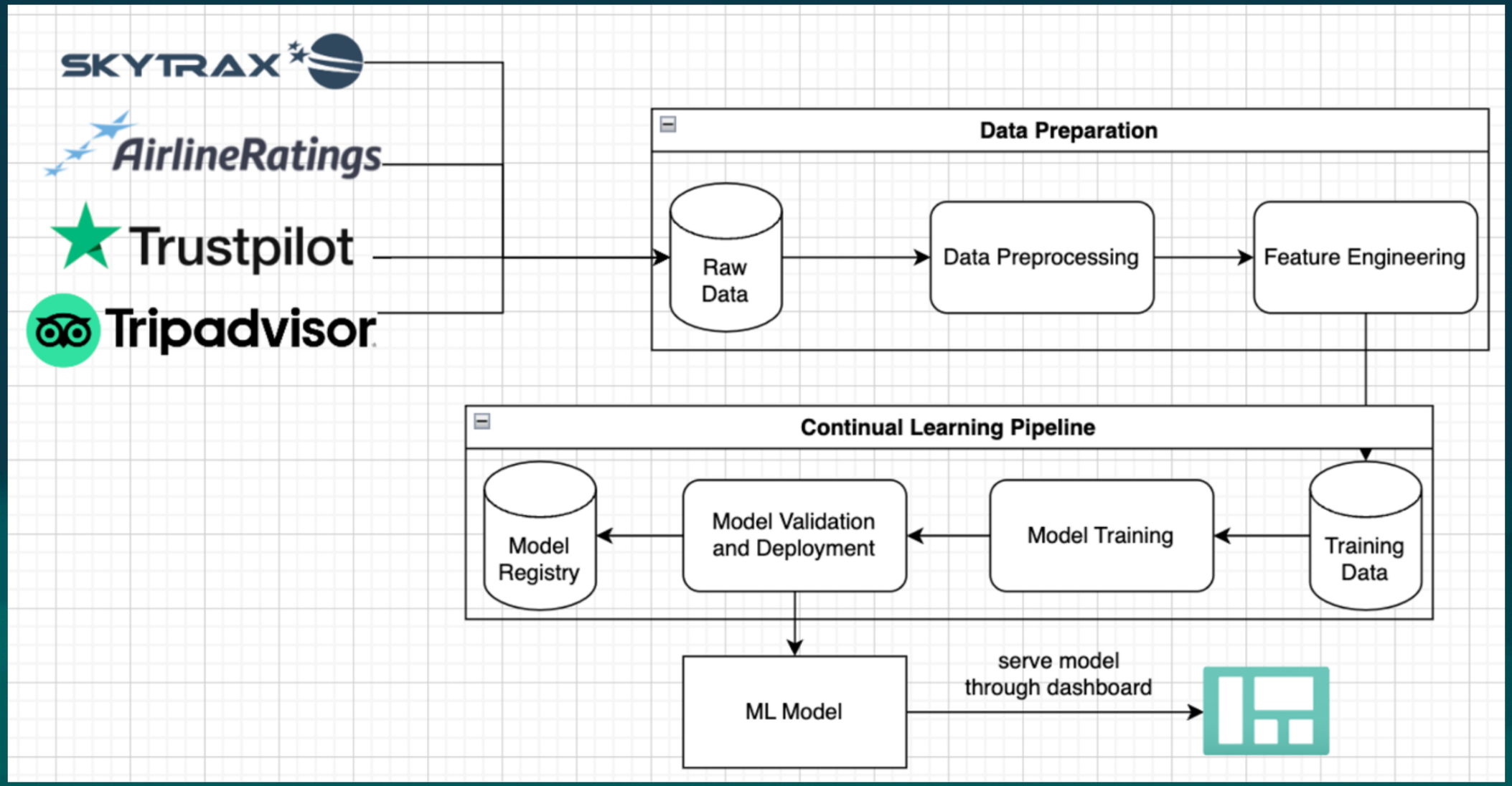


Deployment

Model Serving

1. Data Sources: Skytrax, Airline Ratings, Trustpilot, and TripAdvisor.
2. Raw Data: Collected raw review data is stored for processing.
3. Data Pre-processing: Cleansing and formatting the raw data to make it usable for the model.
4. Feature Engineering: Creating the text representations
5. Model Training: The pre-processed data is used to train the ML model to classify reviews.
6. Model Validation and Deployment: The trained model is tested and validated for accuracy, then deployed for use.
7. Model Registry: The validated model is stored in a repository for version control and retrieval.
8. The deployed ML model can be accessed and utilized through a dashboard interface for user interaction.

Model Serving



Proposed Application