# WANDERLUST

TRAVEL RECOMMENDER

DISCOVER, EXPLORE, TRAVEL

Fung Xue Feng

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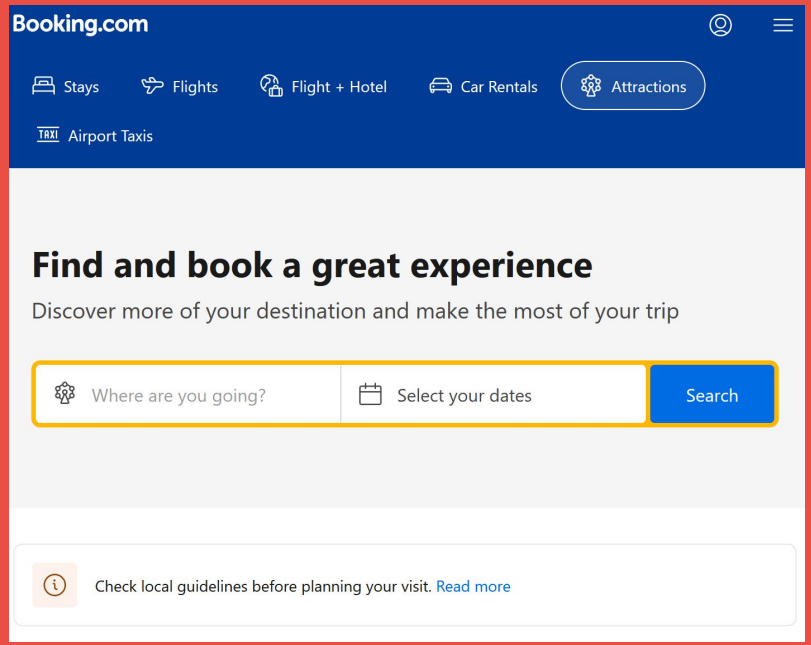
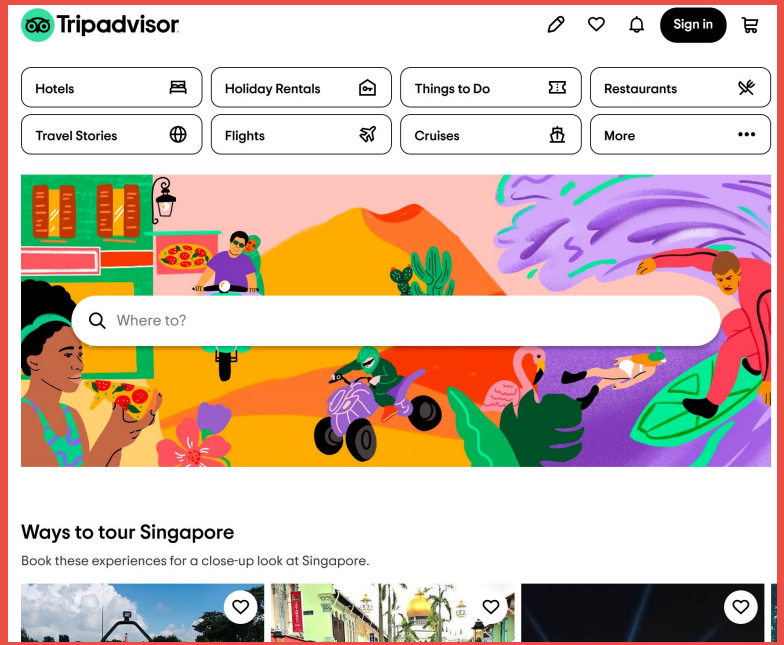
# CURRENT COMPETITORS



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# PROBLEM STATEMENT

- **What if, the user has not decided where to go?**
  **Or prefers to choose based on their hobby(ies) or interest(s)?**

- That's where **my** Travel Recommender comes in.
  It pulls out a list of 6 things that a user is likely to enjoy, based on what they like to do when they travel and how important it is to do a genre of activity when overseas.

# PROJECT GOALS

1. To achieve accurate recommendations based on user's selection of categories of activities they would like to do, especially for new users (cold start issue)

2. Incorporate sentiment analysis of reviews to modelling - feature engineering

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Incorporate Feature Engineering in Base Model

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# DATASET

Tripadvisor

Attractions
Attractions Categories
Attractions Reviews

Selenium 4

Attraction Descriptions
Attraction Image

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# Dataset - Canada

1705 Activities

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# DATA CLEANING

| Attraction | |
|---|---|
| Attraction_id | Location_Lat |
| Name | Location_Lng |
| Country | Price |
| Province | Rating |
| City | |

| Attraction Reviews |
|---|
| Attraction_id |
| Rating |
| Review |
| Review_date |
| User |

| Attraction Categories | Attraction |
|---|---|
| Attraction_id | Category |

| Scraped Data | Description |
|---|---|
| | Image |

| Legend | Dropped | For Analysis |
|---|---|---|

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# ORIGINAL CATEGORIES

| CATEGORIES | | | | |
|---|---|---|---|---|
| Featured Tours And Tickets | Local Experiences | Air, Helicopter & Balloon Tours | Cruises, Sailing & Water Tours | Cultural & Theme Tours |
| Day Trips & Excursions | Food, Wine & Nightlife | Holiday & Seasonal Tours | Sightseeing Tickets & Passes | Outdoor Activities |
| Shopping & Fashion | Shows, Concerts & Sports | Tours & Sightseeing | Theme Parks | Transfers & Ground Transport |
| Walking & Biking Tours | Water Sports | Weddings & Honeymoons | Family Friendly | Shore Excursions |
| Multi-day & Extended Tours | Private & Custom Tours | Classes & Workshops | Recommended Experiences | |

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# RE-LABELLED CATEGORIES

| CATEGORIES | | | | |
|---|---|---|---|---|
| Accommodation | Adventure | Air Tour | Beach | Brewery/ Distillery/ Winery |
| Camping | Classes & Adventure | Entertainment | Equipment Rental | Food |
| Hiking | Includes Transport | Land Tour | Located In City | Located In Nature |
| Mountain Views | Park | Photoshoot | River Cruise | Sea Tour |
| Sightseeing | | Unique Experience | Wildlife Spotting | |

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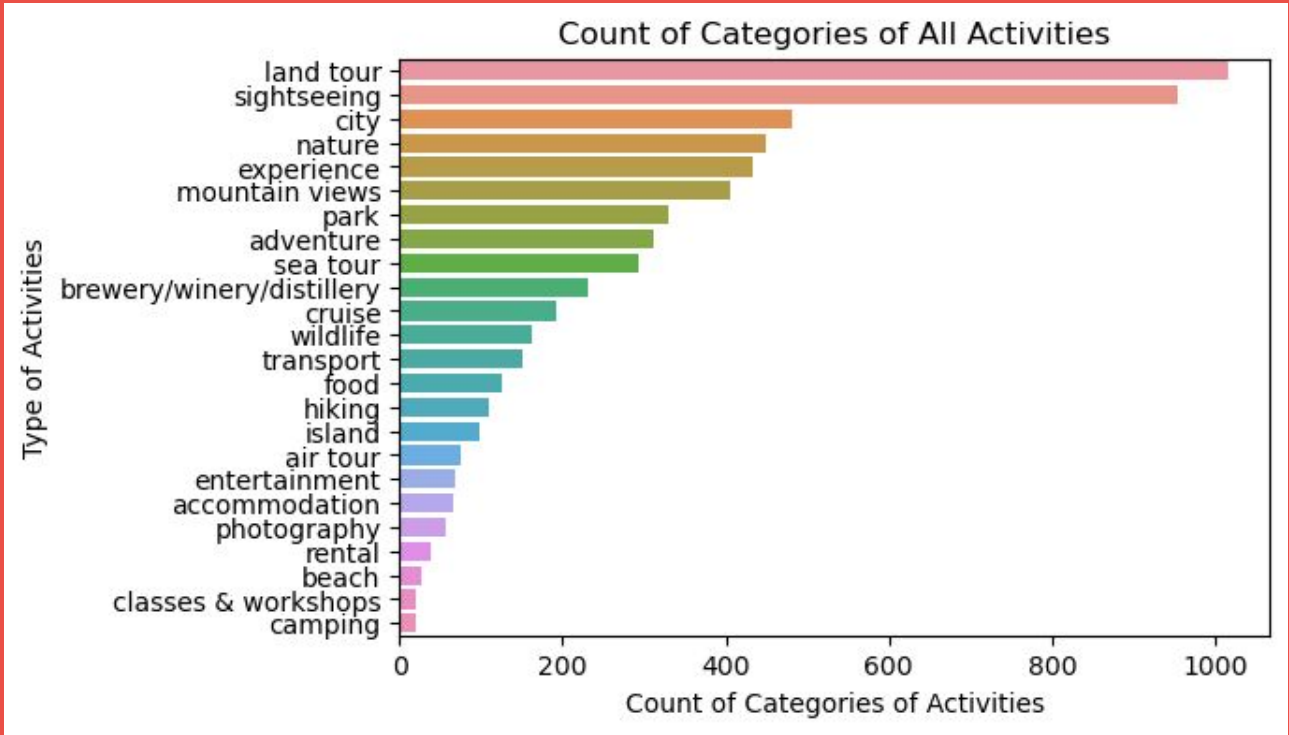
# EDA COUNT OF CATEGORIES



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# MODELLING (Base - Cosine Similarity)

- Cosine similarity model (Content-Based)

| Banff Day Trip From Calgary | Score |
|---|---|
| Fatbike Frozen Waterfall Tour | 0.9354 |
| Banff national park tour with a small group | 0.9354 |
| Triple c adventure | 0.9258 |
| Summer tour to lake louise, moraine lake & yoho national park from calgary | 0.9258 |
| Calgary and banff mountain biking adventure | 0.8819 |
| Banff national park summer tour from calgary | 0.8571 |
| Calgary, banff (in-depth), jasper & yoho national parks tour from calgary | 0.8571 |
| High spirits adventure | 0.8571 |
| Jasper city sightseeing tour | 0.8571 |
| Banff national park, cave & basin national historic site tour from calgary | 0.8571 |

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# USER REVIEWS

- Venting frustrations (Negative Experience)
- Praising the company, wanting to give back (Positive Experience)
- 75% of people trust a business after seeing a positive review
- 95% of all travellers read online reviews before booking
- 97% of consumers report that the customer reviews they read influence their purchasing decisions.

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# NLP – User Reviews

Hugging Face

## Which?

cardiffnlp/twitter-roberta-base-sentiment

## Why?

Twitter has a mix of noisy text and formal text

## Parameters

Emotion Recognition & Sentiment Analysis

## Output

Positive
Neutral
Negative

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# Feature Engineering

## User Rating * Sentiment Value

| | Sentiment Value | User Rating | User Rating * Sentiment Value |
|---|---|---|---|
| Positive | 2 | 1 to 5 | 0.5 to 10 |
| Neutral | 1 | | |
| Negative | 0.5 | | |

MinMaxScaler

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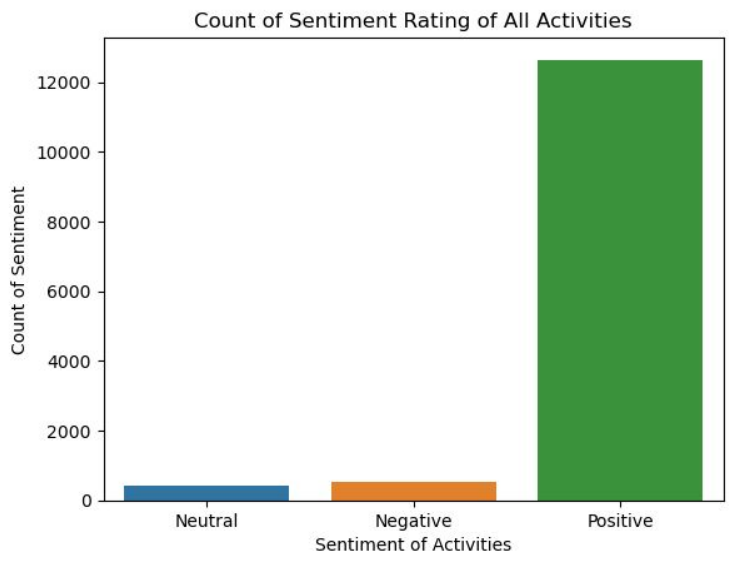
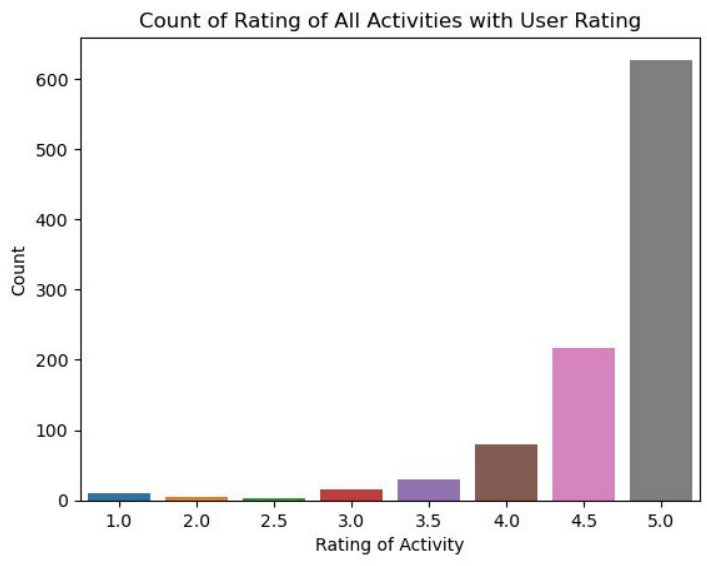
# EDA SENTIMENT RATING & USER RATINGS



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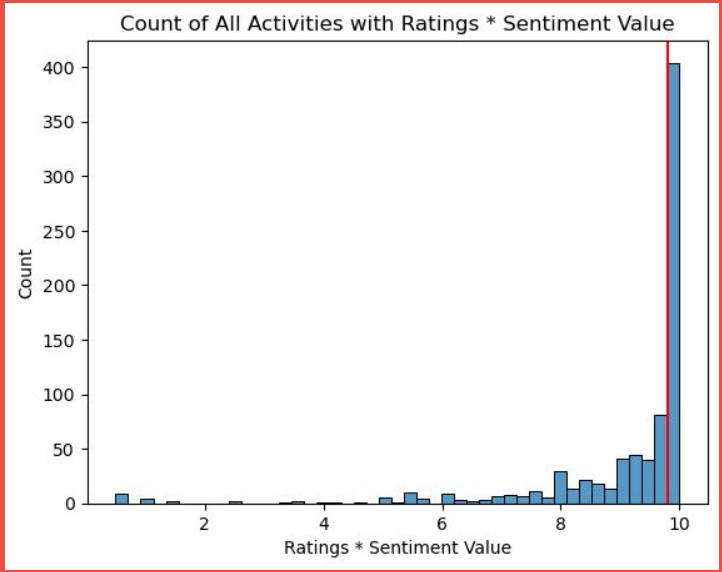
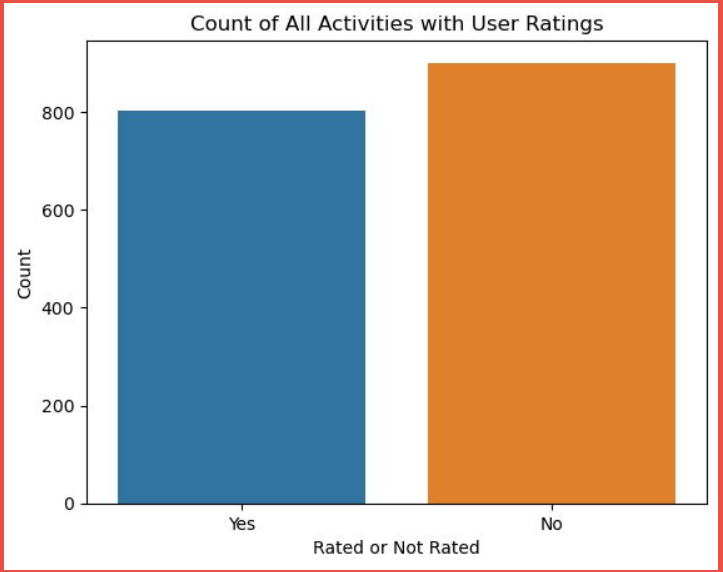
# EDA OVERALL RATINGS ON ACTIVITY




- Only 47% of Activities has reviews

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# MODELLING + Rating & Reviews

- Content Based Model (Including User Ratings and Reviews)

| Banff Day Trip From Calgary | Base | Model |
|---|---|---|
| Fatbike Frozen Waterfall Tour | 0.9354 | 0.9421 |
| Banff national park tour with a small group | 0.9354 | 0.9428 |
| Triple c adventure | 0.9258 | 0.9354 |
| Summer tour to lake louise, moraine lake & yoho national park from calgary | 0.9258 | 0.9354 |
| Calgary and banff mountain biking adventure | 0.8819 | 0.8944 |
| Banff national park summer tour from calgary | 0.8571 | 0.8746 |
| Calgary, banff (in-depth), jasper & yoho national parks tour from calgary | 0.8571 | - |
| High spirits adventure | 0.8571 | 0.8746 |
| Jasper city sightseeing tour | 0.8571 | 0.8746 |
| Banff national park, cave & basin national historic site tour from calgary | 0.8571 | 0.8746 |
| Foothills Adventure | - | 0.8746 |

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# STREAMLIT

https://fungxf-travel-recommender.streamlit.app/

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# Step 1 : Select 5 Categories

## Welcome to my Travel Recommender!

## Select the top 5 categories you would like to do as part of an activity when you are travelling!

By: Fung Xue Feng (GitHub)(Linkedin)

Tour in the Air with Guide

| | | | | |
|---|---|---|---|---|
| ☐ Accommodation | ☑ Adventure | ☐ Air Tour | ☐ Beach | ☐ Brewery/ Distillery/ Winery |
| ☐ Camping | ☐ Classes and Workshop | ☐ Entertainment | ☐ Equipment Rental | ☐ Food Tour |
| ☑ Hiking | ☐ Includes Transport | ☐ Island Hopping | ☐ Land Tour | ☐ Located In City |
| ☑ Located In Nature | ☑ Mountain Views | ☐ Park | ☐ Photoshoot | ☐ River Cruise |
| ☐ Sea Tour | ☑ Sightseeing | ☐ Unique Experience | ☐ Wildlife Spotting | |

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# Step 2 : Rate Them!

**Activity needs to include Sightseeing:**

On a scale of 1 (Its ok to have) to 5 (Must Have)

1 — 5 — 5

**Activity needs to include being in nature:**

On a scale of 1 (Its ok to have) to 5 (Must Have)

1 — 4 — 5

**Activity needs to be adventurous:**

On a scale of 1 (Its ok to have) to 5 (Must Have)

1 — 3 — 5

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# Voilà!

[Peyto Lake Snowshoe Tour]

Read More

[Dog Mountain Snowshoeing And Photography Tour]

Read More

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# PROJECT GOALS & CONCLUSIONS

Recommender is able to give an accurate recommendation based on user selection of categories of activities

## Recommender

Hugging Face

Feature Engineered Ratings and Reviews into the Model

## NLP

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# LIMITATIONS & RECOMMENDATIONS

Getting more user reviews and rating → Transform to a hybrid recommender

Expand the recommender to existing users

Scale up to have user-based recommendation

Scale up to include World Dataset

Ability to set a budget

Ability to set date of travel

Adding in other attributes to have a more inclusive recommender

Expand to an itinerary planner

# THANKS

Do you have any questions?

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