

1. **What are the names and NetIDs of all your team members? Who is the captain? The captain will have more administrative duties than team members.**

Individual Project

Name- Richa Meherwal

Netid- meherwa2

Captain-Richa Meherwal

2. **What is your free topic? Please give a detailed description. What is the task? Why is it important or interesting? What is your planned approach? What tools, systems or datasets are involved? What is the expected outcome? How are you going to evaluate your work?**

Topic

Using Topic Mining and Sentiment Analysis to compare customer level satisfaction in Airbnb vs Hotels

Problem Statement

Ever wondered traveling to a city and choosing the best place to stay for a full blown and complete travelling experience? With the rise of Airbnb, travellers are usually drawn to this new type of accommodation. But does it satisfy what they are looking for. Similarly some travellers always chose to stay in expensive Hotels despite the price, why? What is it that attracts tourists to hotels over Airbnb. It is evident that price and some other quantifiable features play the deciding role, but. we can go deeper into understanding why customers might prefer one over the other by analysing the reviews.

I chose this topic because I was interested in learning what level of customer satisfaction present in Airbnb users vs Hotels. Although there are a lot of factors that would justify one over the other for example price. I

particularly wanted to compare the customer level satisfaction involved with these two types of accommodation using topic extraction and sentiment analysis.

Task

To compare the customer satisfaction between Airbnb and Hotels using LDA and Sentiment Analysis

Datasets

<https://www.kaggle.com/mrinaal007/reviews>

<https://zenodo.org/record/1219899#.X5Uic0Izba4>

Tools

jupyter notebook

Nltk toolkit

gensim

Approach

1. Complete the pre-processing of the datasets. This includes tokenisation, removing stop words, normalisation.
2. Use LDA to first extract the common topics that the customers review about in both the datasets.
3. Do a sentiment analysis on each of the sentences containing the extracted topic and assign a sentiment to it. Gather the associated sentiment and the topic over each dataset.
4. Now under each accommodation type we should be able to visualise the topics that it is positively credited for by the reviewers and also negatively.

My expected outcome is to show topic and sentiment level comparisons for each type of accommodation (Airbnb or Hotel). The idea is to see which topics are associated positively or negatively with each of the accommodation types and to gain insight into where each of these services perform better than the other.

3. Which programming language do you plan to use?

Python

4. Please justify that the workload of your topic is at least $20 \times N$ hours, N being the total number of students in your team. You may list the main tasks to be completed, and the estimated time cost for each task.

Tasks and hours

1. PreProcessing data - 5-6 hrs
2. Research methods for Sentiment Analysis and Topic Extraction and deploy it - 9-12 hrs
3. Post Processing and visualising the final data - 6-7hrs
4. Cleaning code ,demo, documentation - 4-5 hrs

$N=1$

Total estimated work hours- 24- 30 hrs