

A photograph of a traditional Korean street, likely Bukchon Hanok Village in Seoul, showing traditional wooden buildings with tiled roofs and modern skyscrapers in the background.

Seattle Airbnb Reviews Sentiment Analysis

By Tech Overs

Business Understanding

Reviews are integral for earning super host status.

Sentiment analysis helps businesses understand the overall opinions of their customers.



Problem statement



Due to the time consumed reading through long comments of reviews, conducting text summarisation enhances a quick understanding of the reviews.

Business Objectives

To identify accommodation attributes used to rate experience.

To extract sentiments from unstructured review texts.

To build a word cloud with key attributes used in reviews.



Data Understanding



The dataset comprises
three CSV files;

- listing
- reviews
- calendar

The dataset of interest
was reviews while the
remaining two were used
for EDA analysis.

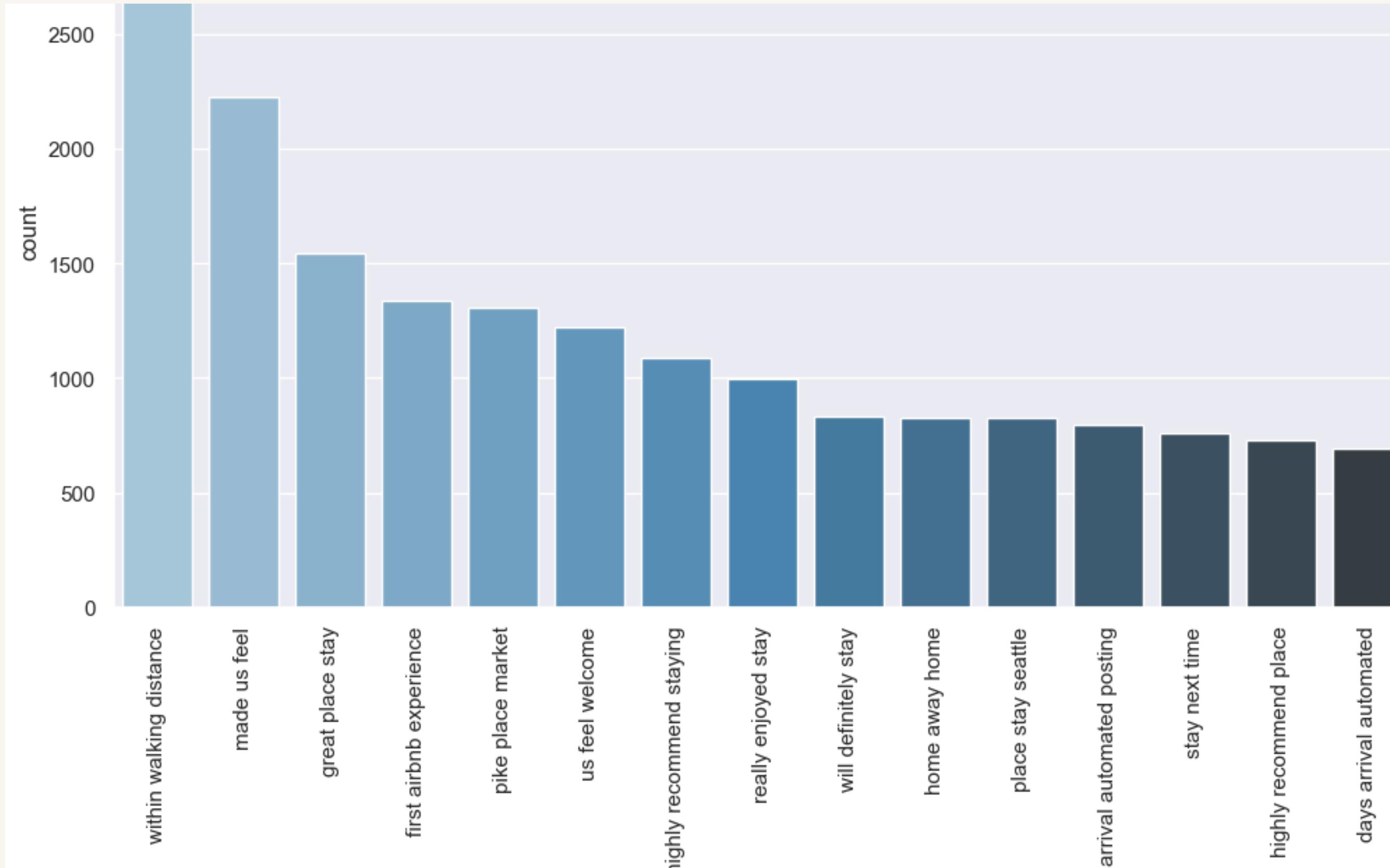
Data Cleaning

The process will be conducted using the following steps:

- Cleaning text
- Tokenize
- Document term matrix

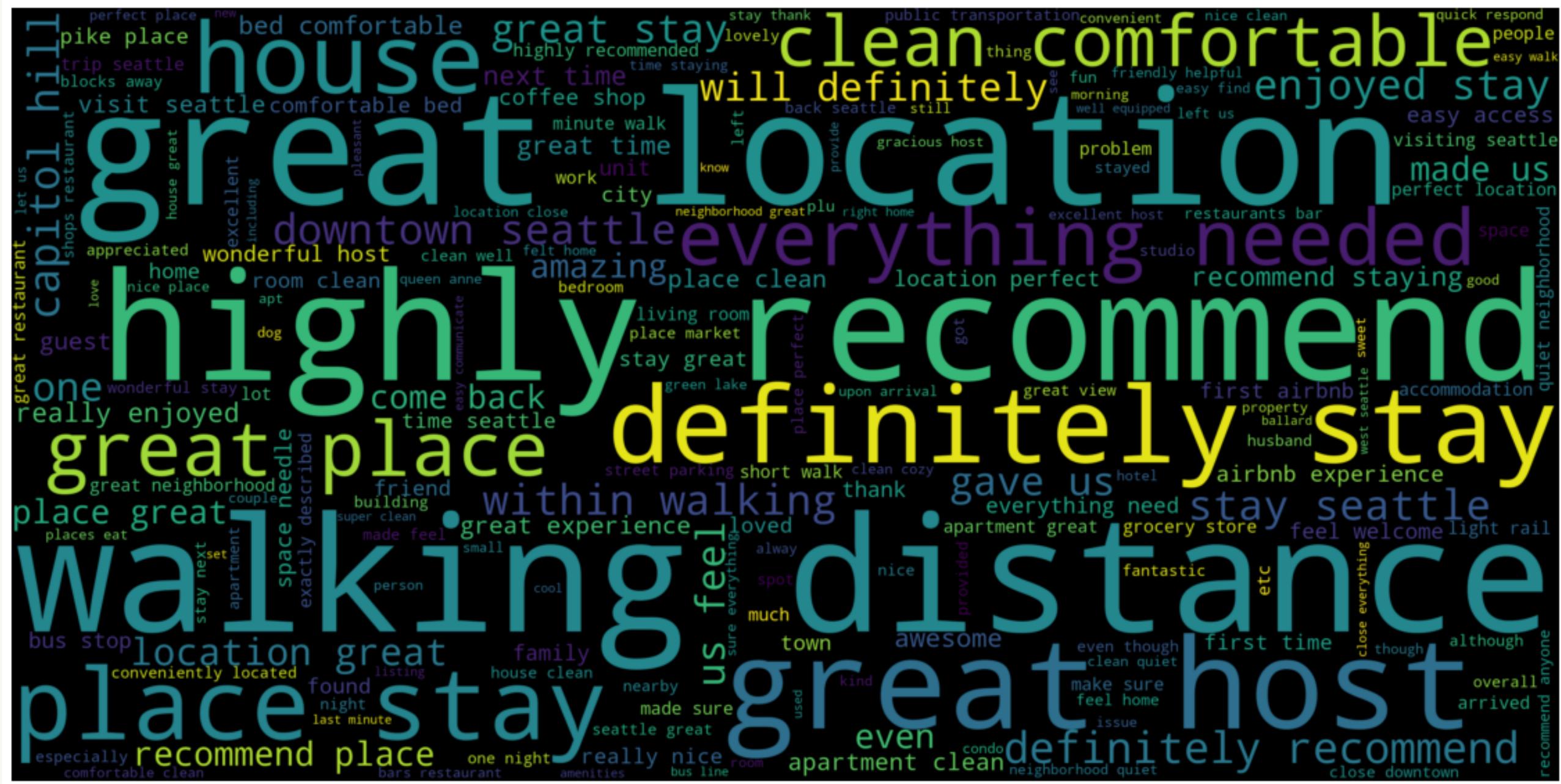


commonly used 3 words combination(Trigram)



The commonly used words in the reviews; with walking distance and made us feel, imply concern for the surroundings and services rendered.

Word Cloud



The most commonly used words were displayed in a word cloud

Data Preprocessing

Machine Model	Training Accuracy %	Testing Accuracy %
TensorFlow_Hinge	99.08	98.97
TensorFlow_binary_crossentropy	99.08	98.96
NaiveBayes	81.07	80.67
XGBoost	99.48	99.20

The models created passed the success criteria of 75% hence they effectively predict reviews up to the accuracy displayed and therefore fit for deployment.

Conclusion

Location and amenities are commonly preferred factors when booking an Airbnb.

Super hosts tend to rank higher compared to regular hosts during summer.

The model displayed an accuracy score of 76%



Recommendations



- Hosts should ensure the accessibility of Airbnb to social amenities.
- Ensure quality hospitality services are offered for comfort.
- Quick response to inquiries and complaints.

A photograph of a traditional Korean street, likely Bukchon Hanok Village in Seoul. The street is paved with grey stones and lined with traditional wooden houses (Hanok) with tiled roofs and intricate carvings. In the background, modern skyscrapers rise against a clear blue sky. The lighting suggests it's either sunrise or sunset, casting long shadows.

Thank you

Belinda Nyamai
Ryan Musasia
Kinyanjui Kamaau
Marjorie Opiyo
Abduba Galgalo