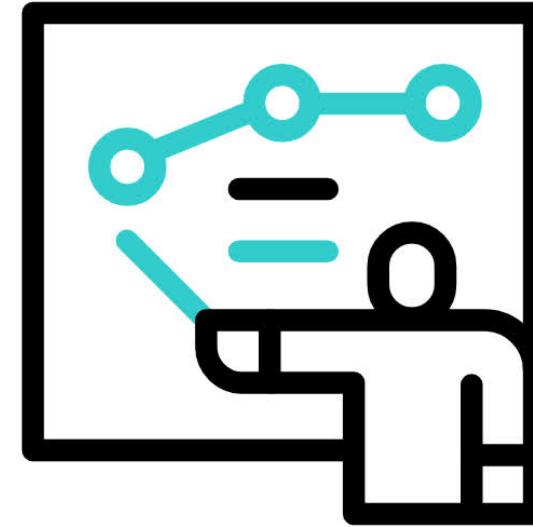


Marriott Hotel

NLP & Sentiment Analysis

Mohamed Katherhassan

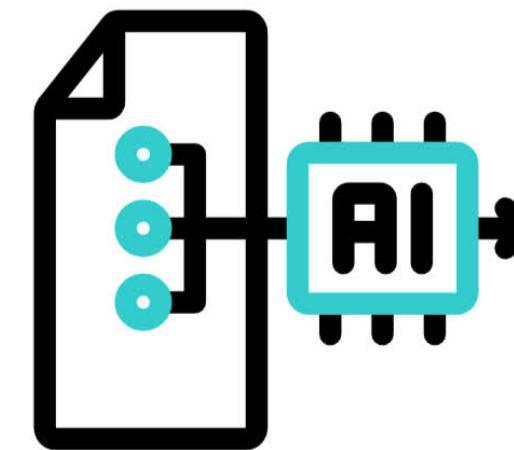
Overview



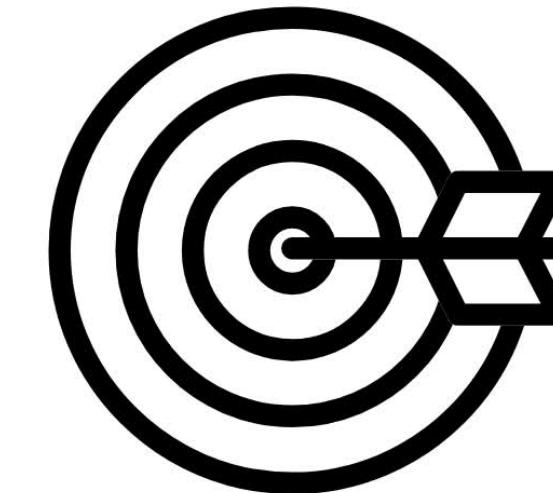
Business Understanding



Data Insights



Model



Recommendation

Business Understanding

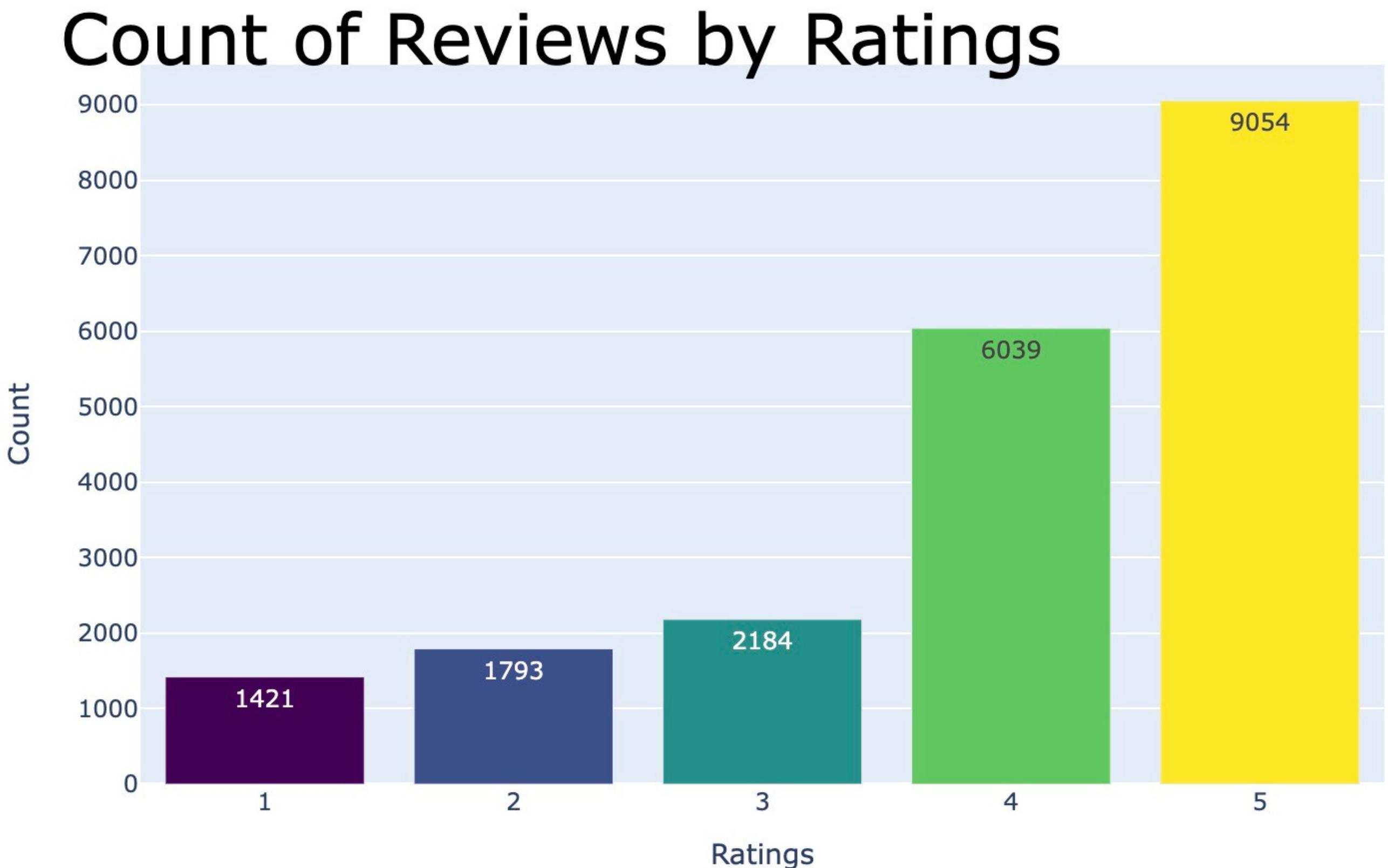
- To analyze customer feedback reviews, to predict whether the overall experience was positive or negative.
- Utilizing natural language processing techniques, we gain insights into customer satisfaction and provide actionable recommendations.



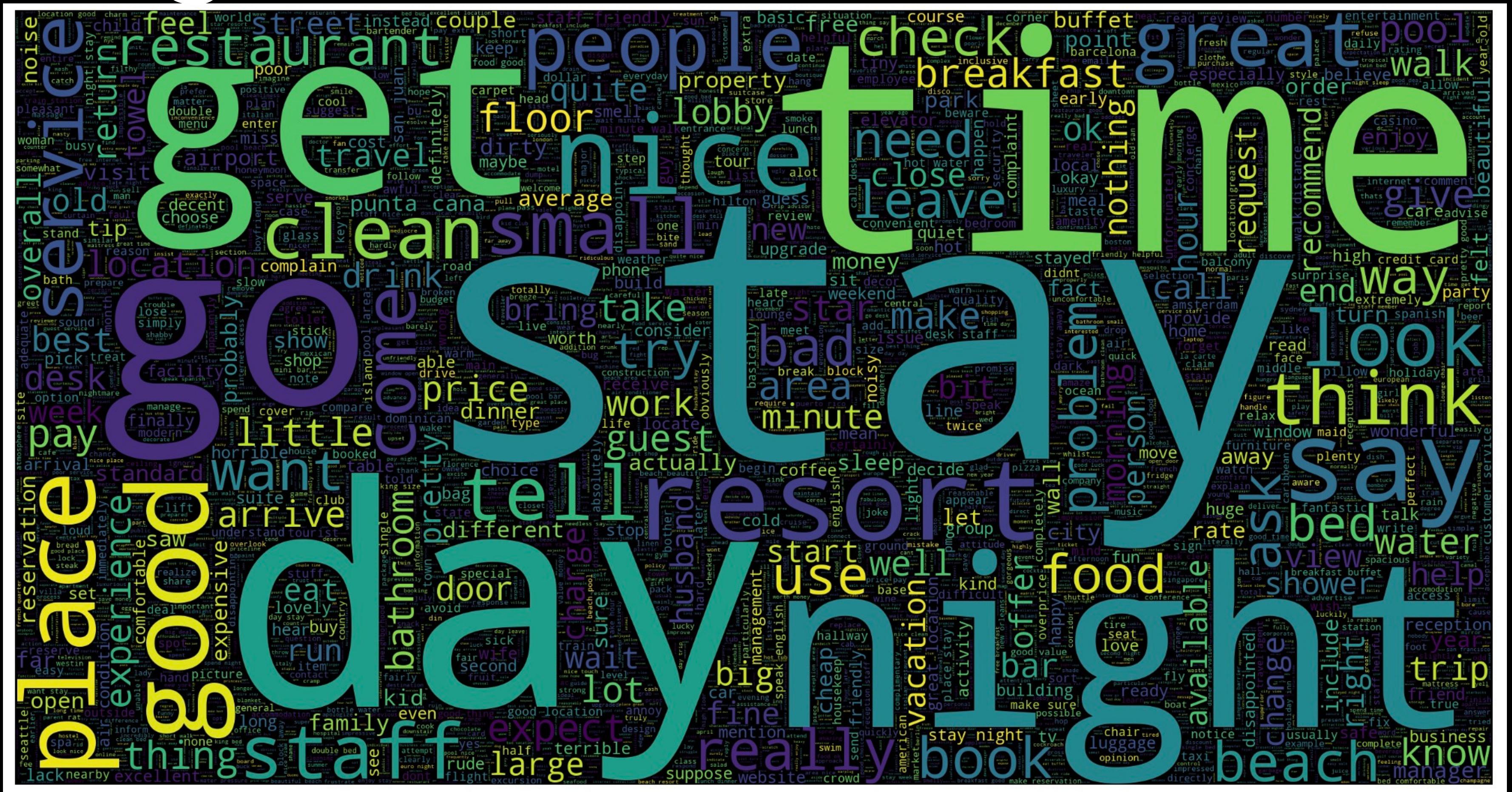
Data Insights

- The Data consisted of Text, The reviews of what the customer wrote
- The Star Rating of what the customer thought about the hotel
- From the Star Rating we derived a Positive or Negative Label

Count of Reviews by Ratings



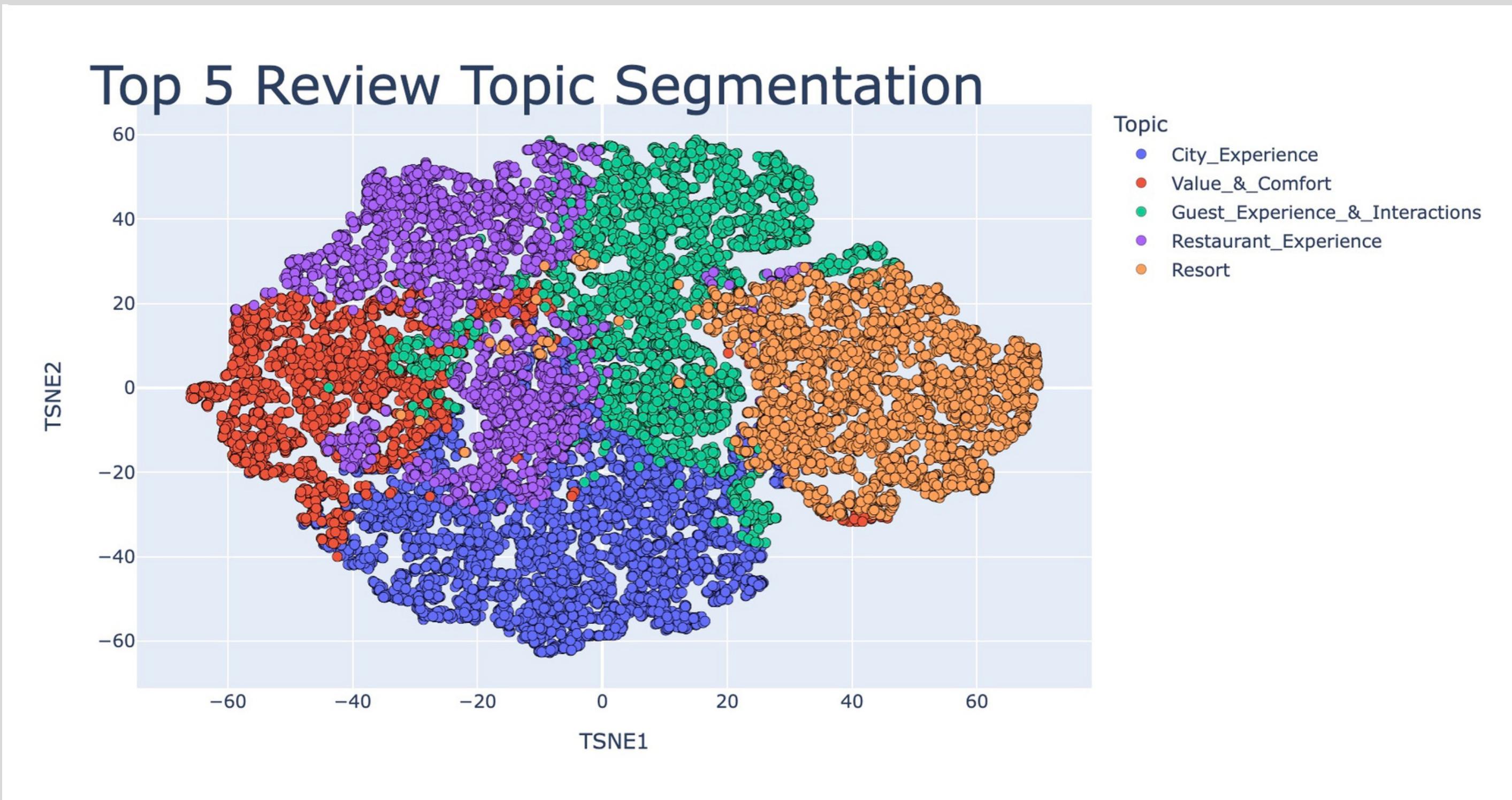
Negative Review Word Cloud



Positive Review Word Cloud



Top 5 Review Topic's

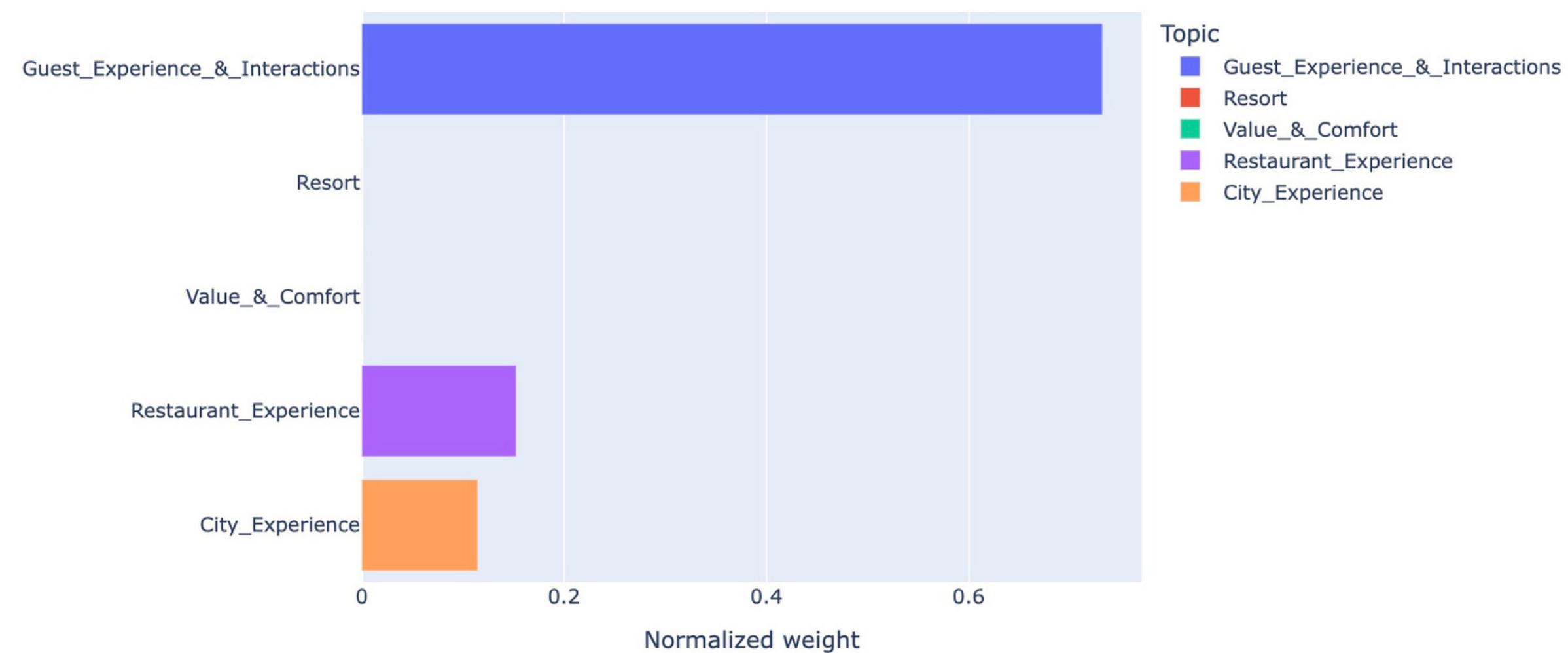


Negative Topic Valuation

choose airport hotel busy triparound australia arrive place rude receptionist corridor room look bombsite warning room mid expensive room service mini crazy air key fail shuttle driver miss drop wrong terminal

Rating: 1

Distribution of topics for review no. 4



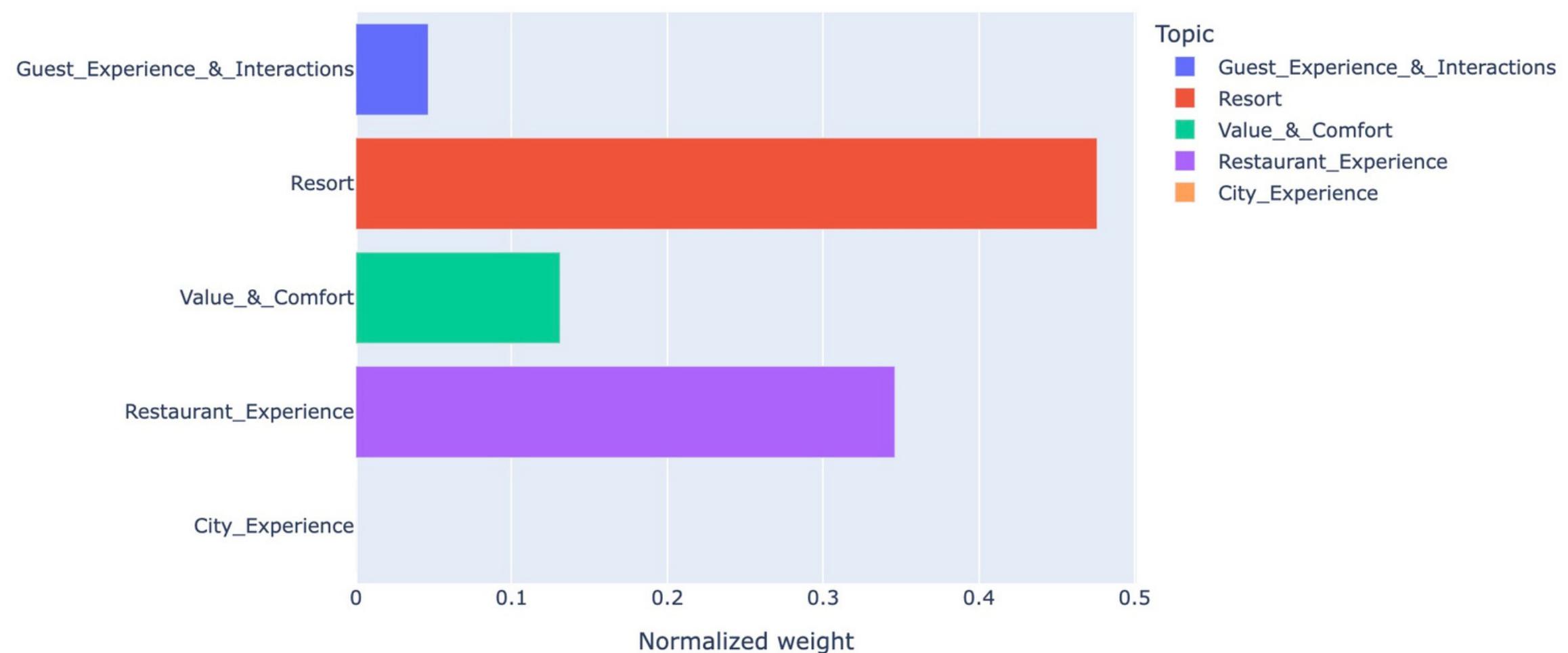
- **The majority of negative reviews stem from what the guest experience and their interactions during their stay.**
- **These findings highlight the importance of focusing on guest experience and improving interactions.**

Positive Topic Valuation

absolutely lovely place truly heaven atmosphere stun people amaze stayed feb wonderful memory service personal help s
mile remember damai locate nicely hill fantastic view overlook sea meal fantastic taste beautiful creative tasty food
star good work bos damai look employee bestest worker see cleaner service staff supervisor contract worker work const
ruction site absolutely fabulous

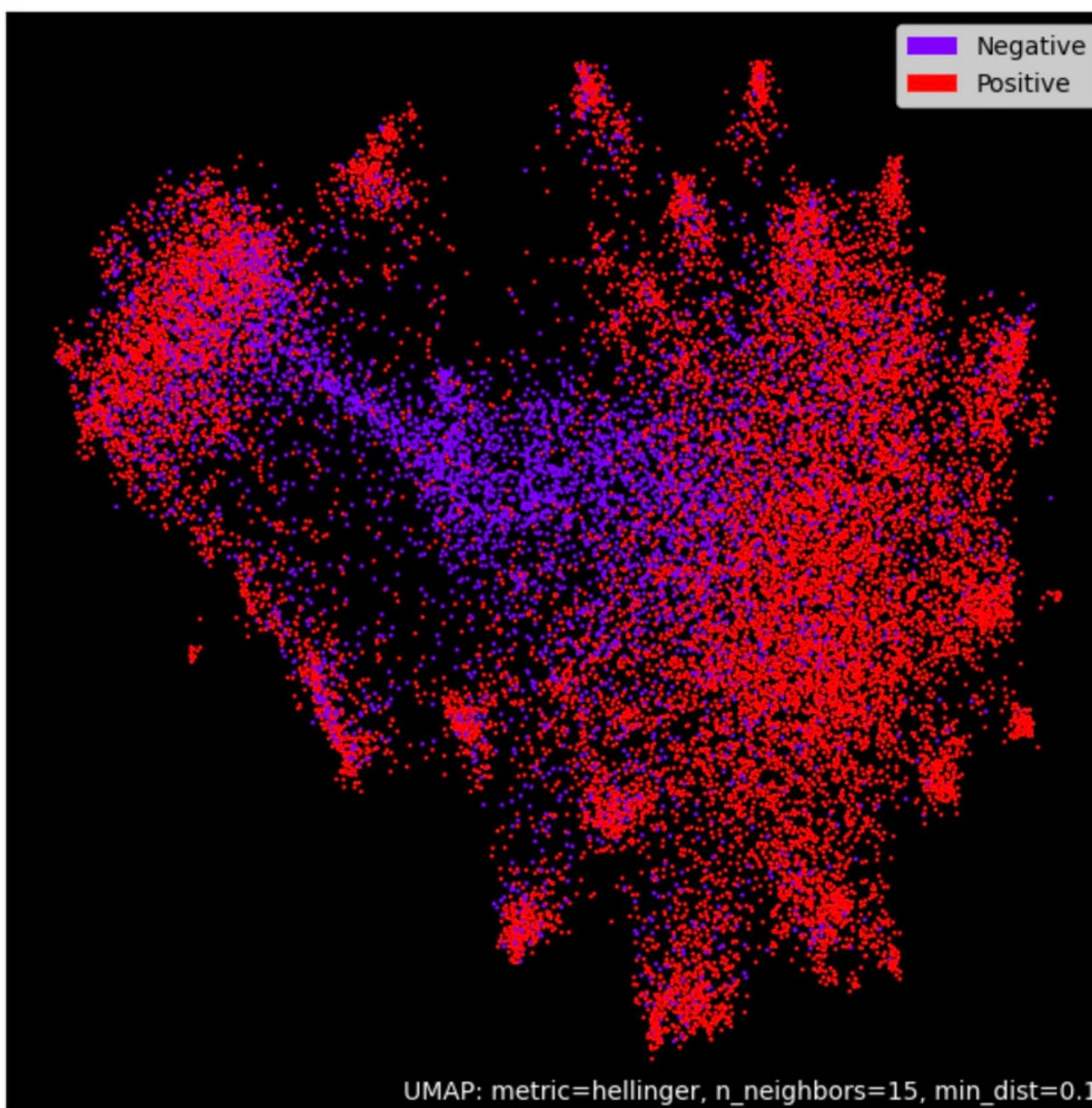
Rating: 5

Distribution of topics for review no. 20488



- We found that the majority of positive reviews were associated with the specific resort where the guest stayed and its overall setup.
- These findings emphasize the significance of resort selection and the overall setup of a hotel in generating positive guest experiences.

UMAP of Labels

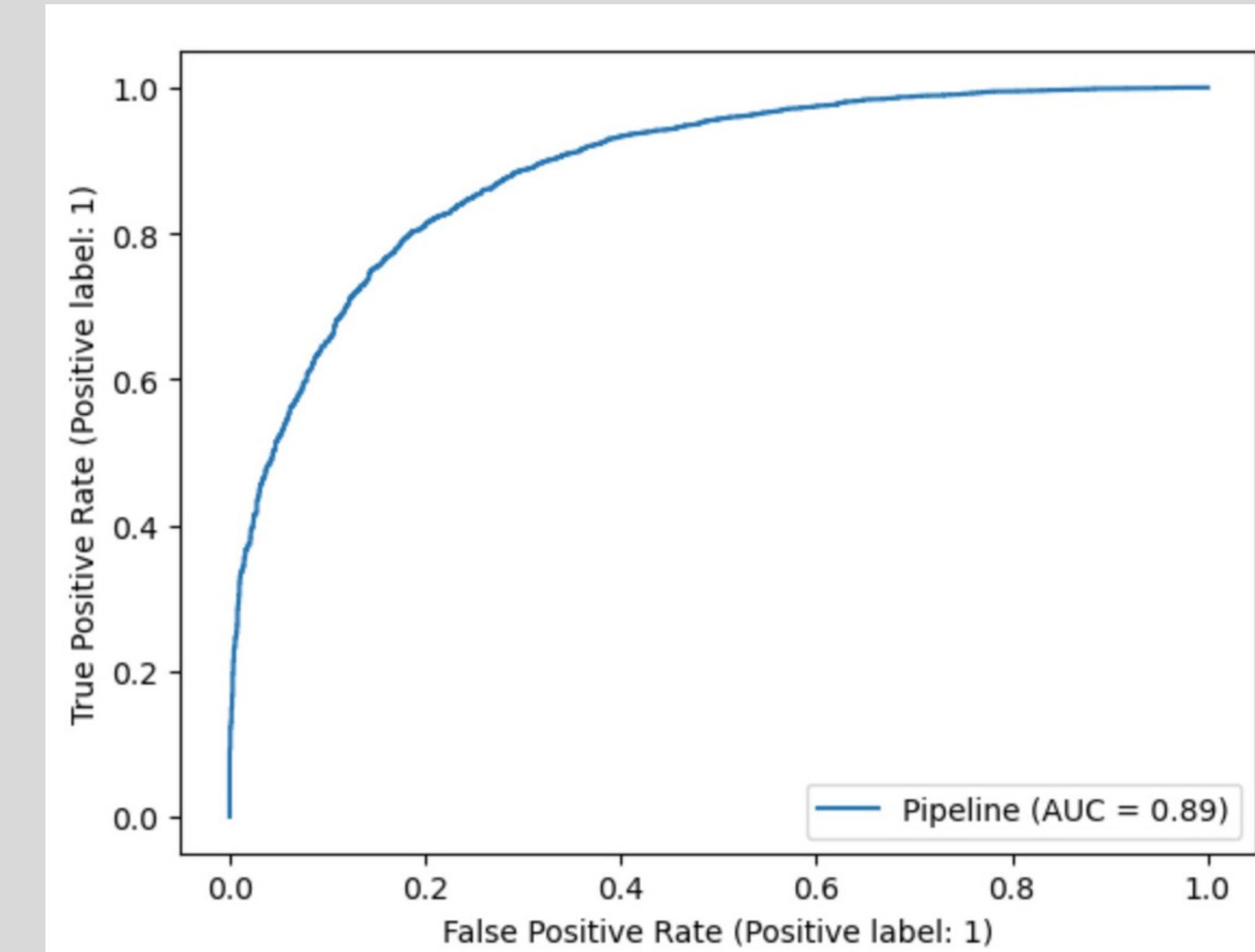
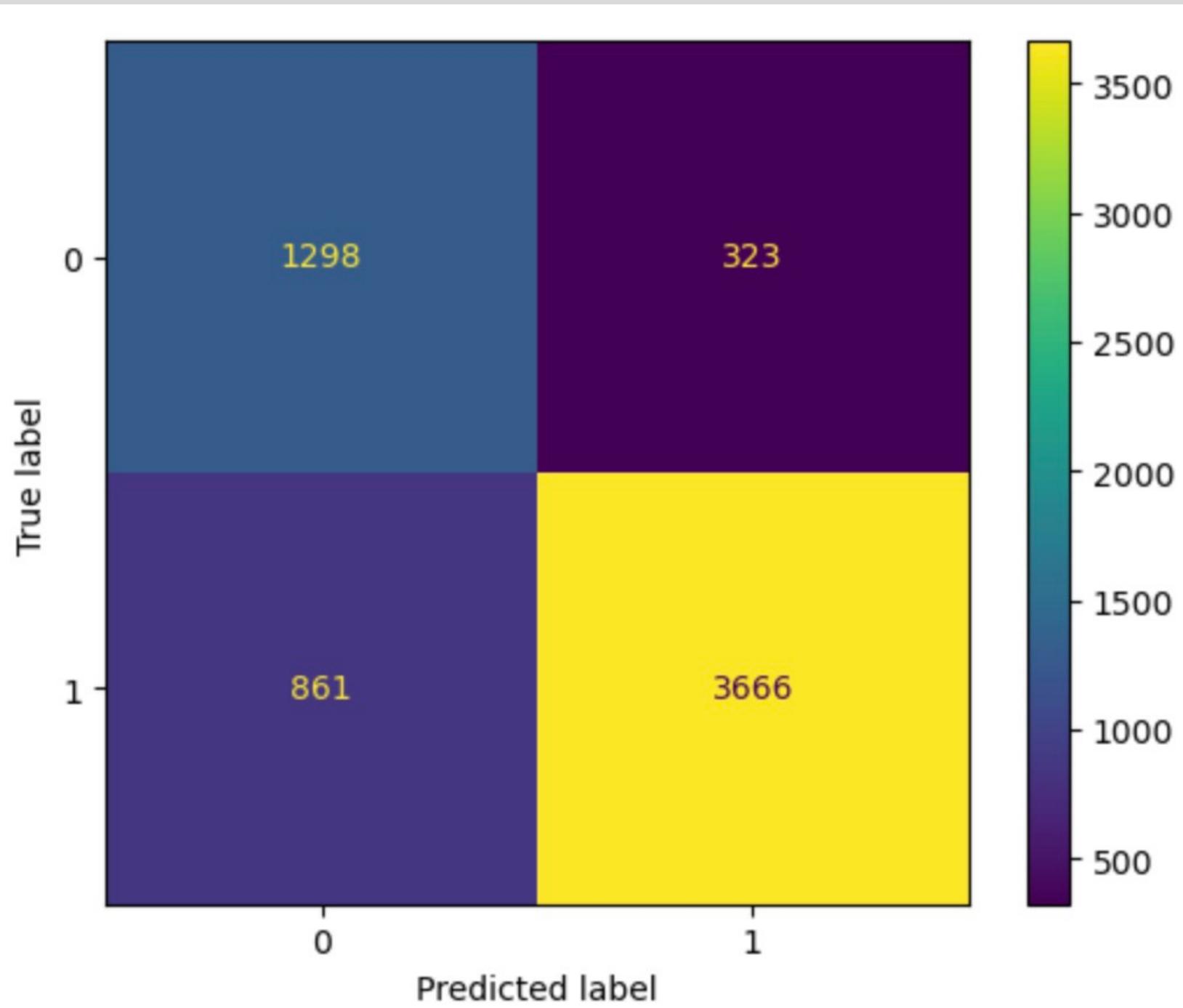


- The goal of Umap is to create a low-dimensional graph of data that preserves the high-dimensional clusters and their relationship to each other
 - The Labels are what our model will predict
 - Left: Closer points, High Dimensional Clusters
 - Right: Sparse points, Low Dimensional Clusters

Modeling

Complement Naive Bayes
Model: Only Text

Accuracy: 80%
AUC: 89%



Sentiment Analysis

Avg Connotation Scores



- Using a Sentiment Intensity Analyzer, we were able to get connotations scores for each review

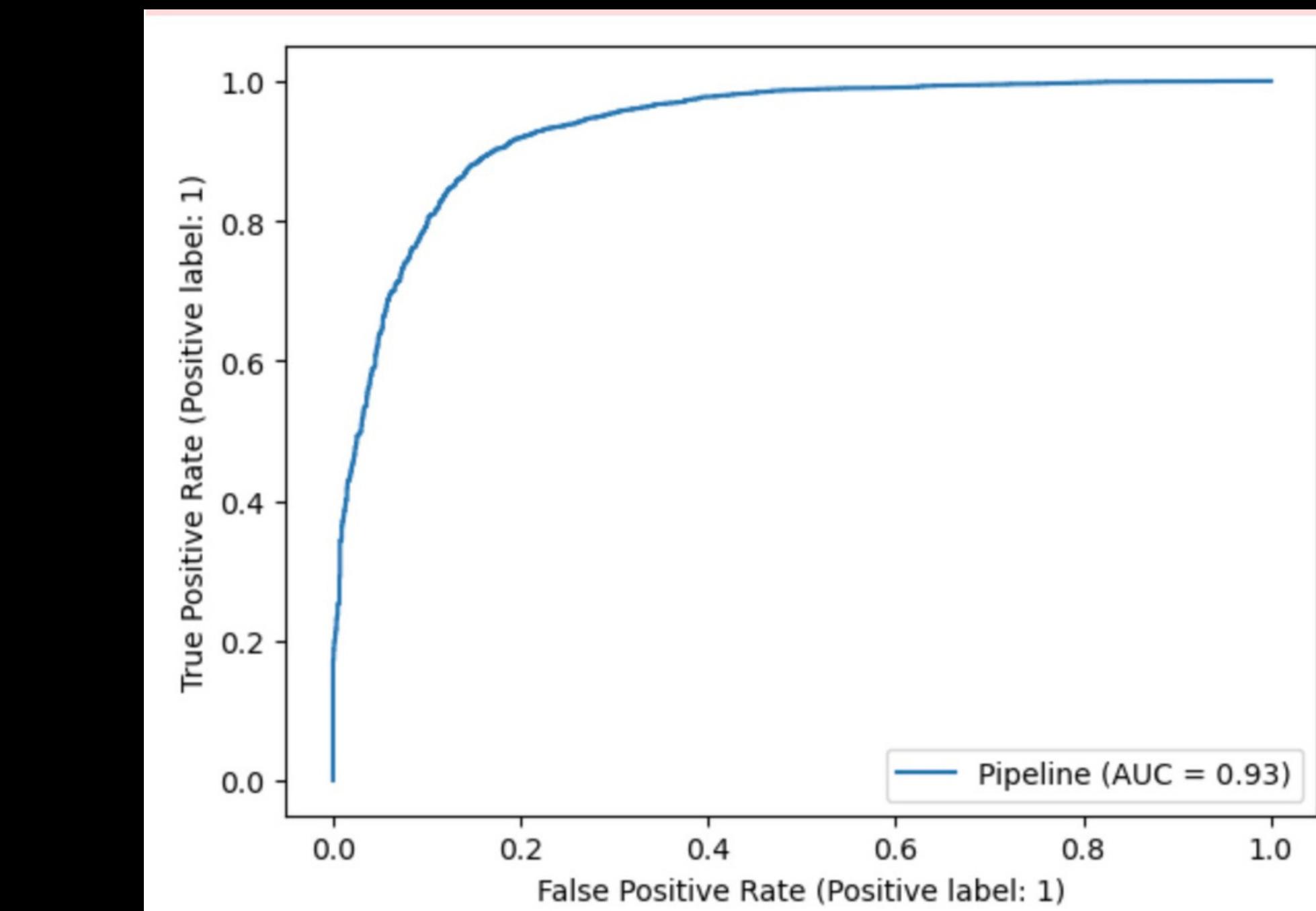
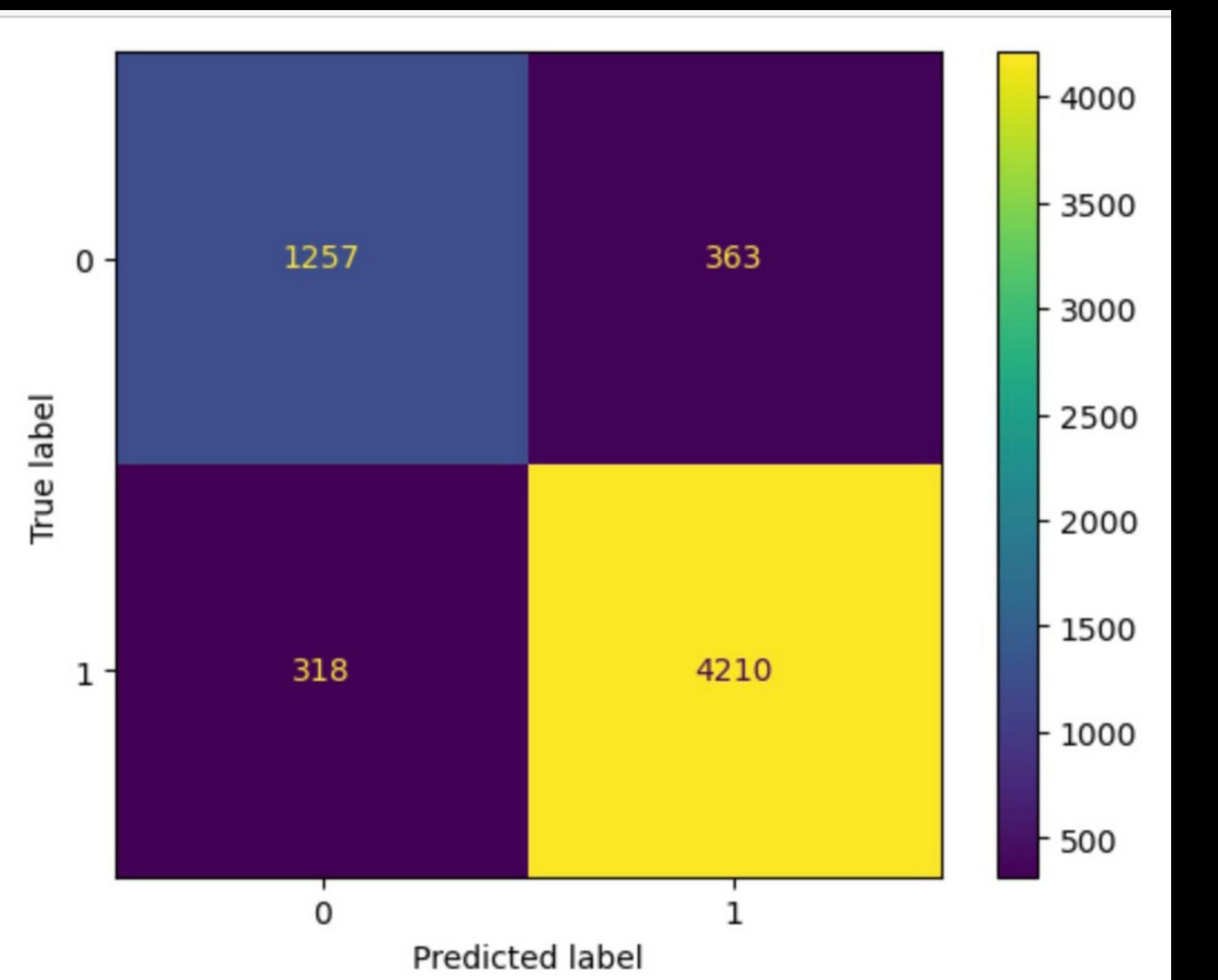
Example: 'I am so happy!!'

Negative: 0.0, Neutral: 0.304, Positive: 0.696, Compound: 0.6785

Modeling

**Logistic Regression Model:
Sentiment Intensity Score & Text**

Accuracy: 89%
AUC: 93%



Recommendations

Negative Valuations Improvement

Guest Experience and Interactions

Customer Service:

- poor customer service experiences (ie. such as rude or unhelpful staff)
- Delayed responses to requests.

By addressing these factors:

- Our Hotels can mitigate negative reviews, enhance guest satisfaction, and foster positive reviews.

Management Issues:

- Difficulties in communicating with hotel management, ie. (receiving contradictory information)
- Experiencing a lack of transparency in policies.



Recommendations

Positive Valuations Improvement Resort and Interactions

- Hire Gardner and Landscapers to help with more greenery
- Hire Project Planner for planning involved activities for beachgoers.
- By focusing on these enhancements our hotels can cultivate positive reviews and build a favorable reputation.



Langkawi, Malaysia

Questions?



Langkawi, Malaysia

Same
Place



'Just landed in Jurassic Park, send help if anything happens to me.' - Me, 2018