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Analyzing Customer reviews on Trip Advisor using Sentiment Analysis

Introduction

Overview of Trip Advisor:

• TripAdvisor is a popular travel website that provides reviews, ratings, and recommendations for hotels, restaurants, and other travel-related services. Millions of traveller use Trip Advisor to plan their trips, book accommodations, and make reservations. Trip Advisor is an important platform for businesses to showcase their services and get feedback from customers.

Explanation of Sentiment Analysis:

• Sentiment analysis is a technique used to identify customer opinions and emotions from text data. It uses NLP, ML algorithms, and other computational methods to classify sentiment as positive, negative, or neutral. It is used in various industries to understand customer feedback, improve strategies, and enhance satisfaction. For Trip Advisor, sentiment analysis can analyze customer reviews to identify areas of improvement and enhance the customer experience.
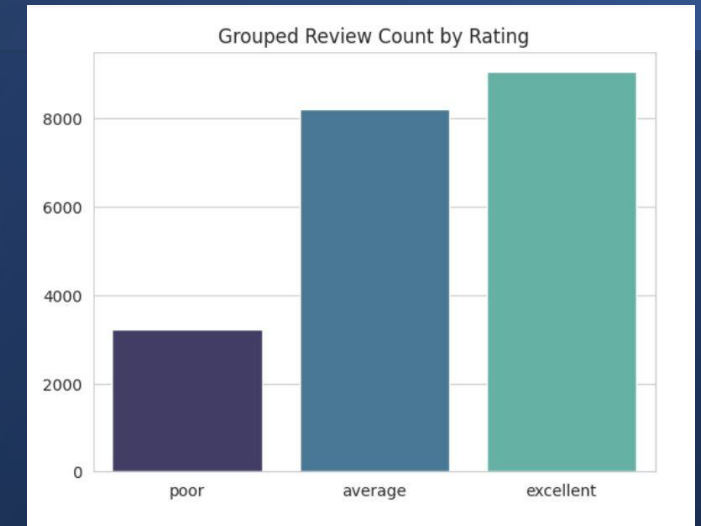
Importance of Sentiment Analysis on TripAdvisor

**Helps in Understanding Customer Feedback:**

Sentiment analysis helps businesses to identify customer feedback, analyze preferences, understand expectations, and identify areas for improvement. By understanding customer sentiment, businesses can make data-driven decisions to enhance their services and build trust with customers.

Exploratory Data Analysis

How Sentiment Analysis Works on Trip Advisor

- Sentiment analysis on Trip Advisor is a process of collecting customer reviews, pre-processing the data, applying sentiment analysis techniques, and interpreting the results to identify areas for improvement. The collection of reviews can be done via the TripAdvisor API or web scraping tools. The pre-processing step involves removing any irrelevant information and cleaning the text data by removing stop words, stemming and lemmatizing. Two approaches to sentiment analysis are lexicon-based analysis and machine learning-based analysis. Finally, the results are interpreted to identify the most common complaints or trends and the insights are used to improve the customer experience.
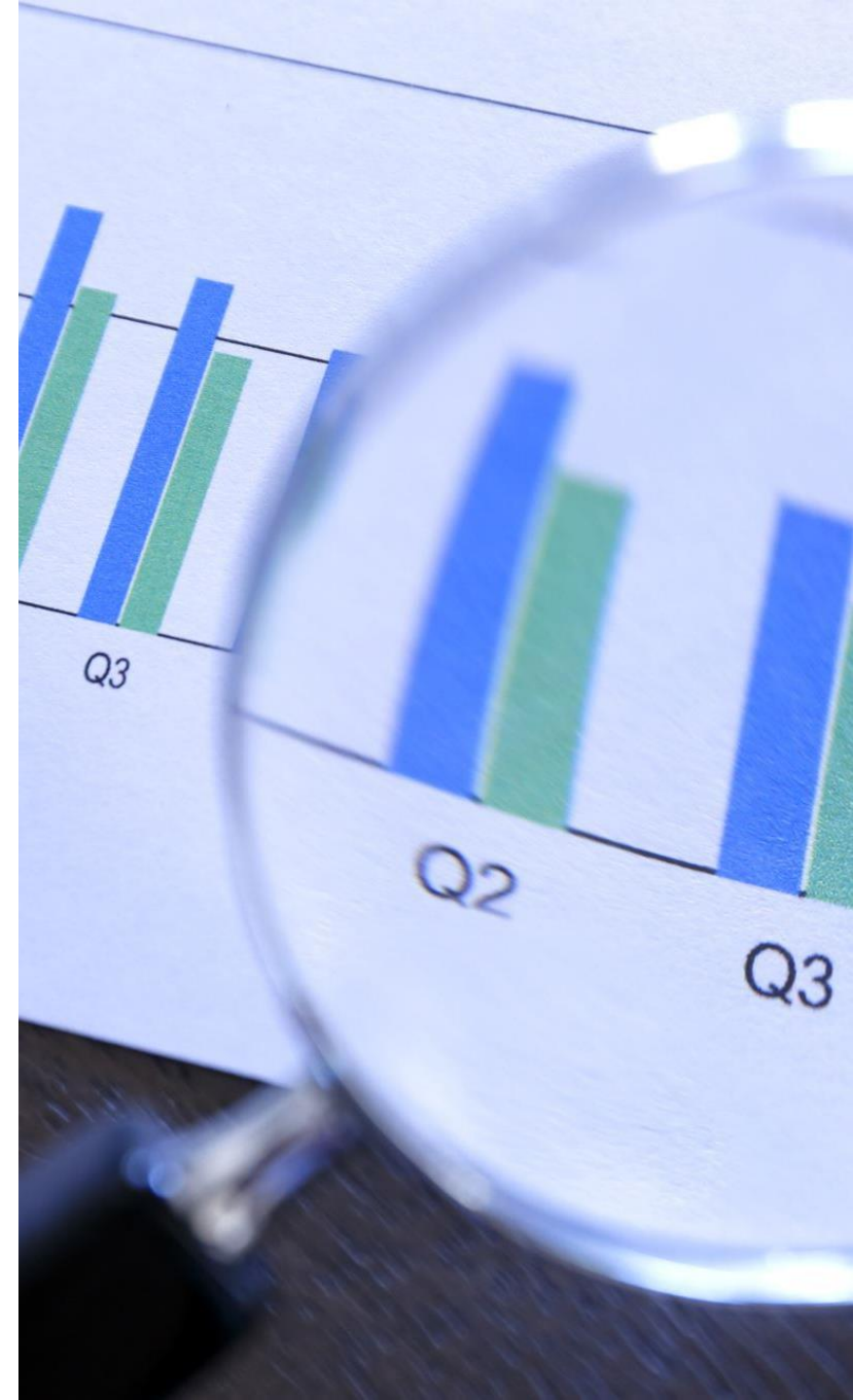
Benefits of Sentiment Analysis on TripAdvisor

- Sentiment analysis on TripAdvisor can provide businesses with valuable insights into customer opinions and emotions. This can help them to identify areas that need improvement and make data-driven decisions to enhance the overall customer experience. It can also provide businesses with a competitive advantage by allowing them to differentiate themselves from their competitors and attract and retain customers. Ultimately, sentiment analysis on TripAdvisor can lead to improved customer satisfaction, better decision-making, and increased revenue and success.

Challenges of Sentiment Analysis on Trip Advisor

- Sentiment analysis on Trip Advisor has challenges such as interpreting figurative language, handling sarcasm and irony, and understanding the context of reviews. It is also limited by natural language complexity and the subjective nature of human emotions.

Examples of Sentiment Analysis on TripAdvisor

Positive Reviews

I had an amazing experience at this hotel. The staff were friendly and helpful, the rooms were clean and comfortable and the location was ideal for sightseeing. The food at the restaurant was delicious, especially the pasta dishes and the desserts were heavenly. The service was also outstanding. Positive experience overall.

Negative Reviews

Both experiences were negative; a hotel stay was characterized by a dirty room, rude staff, and unbearable noise, while a restaurant visit was marked by overpriced, bland food, slow service, and an uninviting atmosphere.

Reviews

|	Review	Rating	new_rating	words	word_count	tokenized
0	nice hotel expensive parking got good deal sta...	4	average	[nice, hotel, expensive, parking, got, good, d...	87	nice hotel expensive parking get good deal sta...
1	ok nothing special charge diamond member hilto...	2	poor	[ok, nothing, special, charge, diamond, member...	250	ok nothing special charge diamond member hilto...
2	nice rooms not 4* experience hotel monaco seat...	3	average	[nice, rooms, not, 4*, experience, hotel, mona...	217	nice room experience hotel monaco seattle good...
3	unique, great stay, wonderful time hotel monac...	5	excellent	[unique,, great, stay,, wonderful, time, hotel...	89	unique great stay wonderful time hotel monaco ...
4	great stay great stay, went seahawk game aweso...	5	excellent	[great, stay, great, stay,, went, seahawk, gam...	191	great stay great stay go seahawk game awesome ...

Word cloud for the Ratings
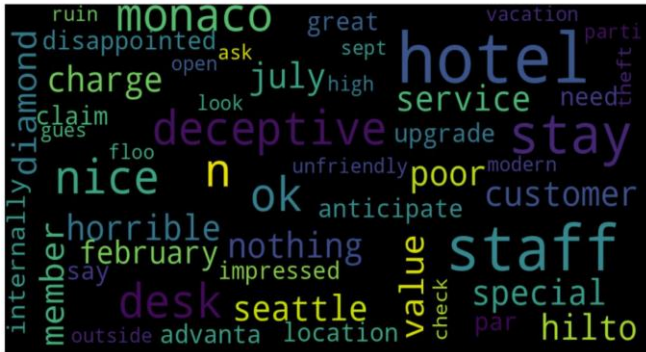
poor

average

excellent

The logistic regression model did the best at identifying the 'poor' reviews, where 'average' and 'excellent' were relatively similar across the three models. Therefore, the logistic regression model is our final model.

name	accuracy score	f1 score
Naive Bayes	0.624787	0.604537
Logistic Regression	0.655526	0.653858
Logistic Regression (PCA)	0.650159	0.648494
Decision Tree	0.572091	0.571000
Decision Tree (PCA)	0.595755	0.593609
Random Forest	0.616004	0.599506
Light GBM	0.647963	0.645438
KNN	0.601610	0.592157

Confusion Matrices for Top 3 Models

DATA SET :
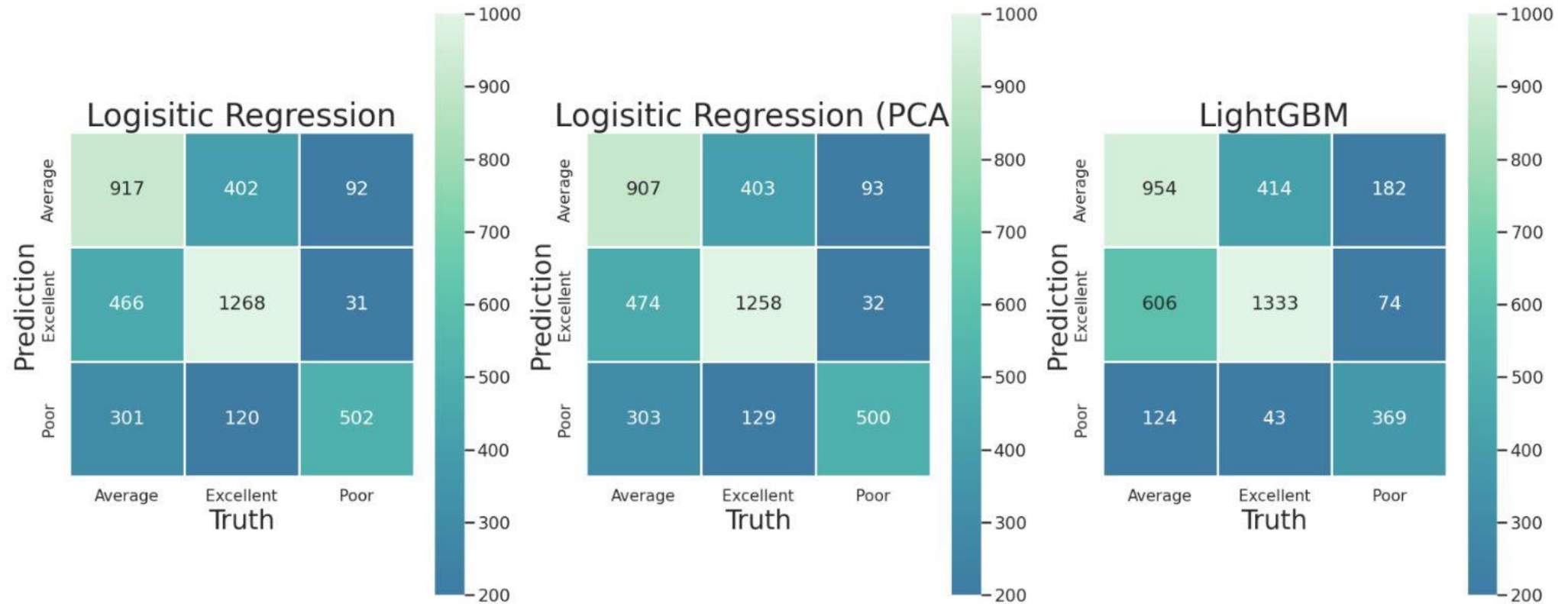
- https://www.kaggle.com/code/mmaguero/tripadvisor-sentiment-analysis-for-hotel-reviews/input

CONCLUSION

In this project, we have discussed the importance and benefits of sentiment analysis on Trip Advisor. We have also highlighted some of the challenges and limitations of sentiment analysis and provided examples of positive and negative reviews. Sentiment analysis on Trip Advisor can help businesses to understand customer feedback, identify areas of improvement, and make data-driven decisions to improve their services and stay competitive in the market

The future of sentiment analysis on Trip Advisor looks promising, as advancements in natural language processing and machine learning are improving the accuracy of sentiment analysis algorithms. Moreover, sentiment analysis can also be combined with other data analytics techniques, such as text mining and predictive modeling, to gain a deeper understanding of customer feedback and improve the overall customer experience. Therefore, sentiment analysis on Trip Advisor is likely to play an increasingly important role in the hospitality and tourism industry in the years to come