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ChatGPT Reviews Sentiment Analysis

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Contents

1. Introduction

2. Problem

3. Objectives

4. Dataset

5. Methodology

6. Result

7. Importance/Conclusion

1. Introduction

Sentiment Analysis - AI Application

- Sentiment Analysis Overview
- The Significance of Analyzing User Reviews for Artificial Intelligence Tools (ChatGPT)
- Project Motivation: Public Perception of AI Applications

2. Problem

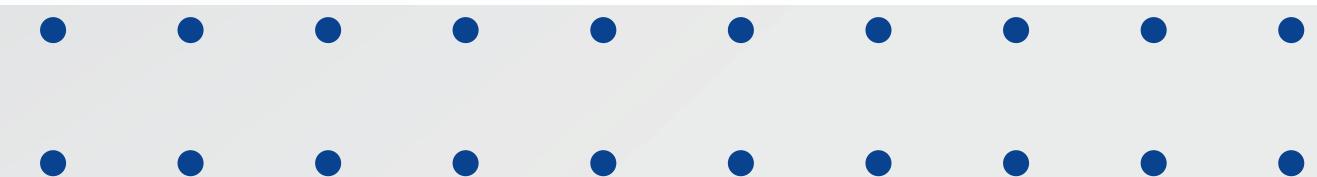
Problem

How Can Sentiment Analysis of ChatGPT Reviews help us understand user satisfaction and public perception of AI Applications?

4. Objectives

Objective

- Sentiment Classification: Positive, Neutral, and Negative
- Evaluate ML models with accuracy, precision, and matrices
- Identify trends and sentiment patterns in real-world user reviews using Feature Engineering
- Provide insight that supports AI application improvement and user experience analysis



Methodology

3. Dataset

ChatGPT reviews [DAILY UPDATED]

Data Card Code (15) Discussion (0) Suggestions (0)

chatgpt_reviews.csv (119.09 MB)

Detail Compact Column 8 of 8 columns

About this file
Remote source: <https://www.kaggle.com/code/ashishkumarak/chatgpt-google-play-reviews-scraping>

This file primarily contains a regularly updated collection of user reviews and ratings for the ChatGPT App, along with information about the relevancy of each review and the date it was posted.

reviewId	reviewer	content	score rating	thumbsUpCount	reviewDate
877105	746312	good nice Other (797234)	7% 3% 90%	5	[null] 1.2025.08 Other (77)
38180956-c757-4c43-9757-9d1a51d91630	Raja ayyan	So much helpful app must try it	5	0	1.2025.3
42eb6422-60d2-40da-9c3b-9c2081984b12	Sachin Verma	excellent	5	0	1.2025.3
5fdb8739-9441-42f3-a575-8bd0b57d6a58	Kamal uddin Vicky	it's realy good and helpful	4	0	1.2025.2
9c613a3c-2e11-47bd-ab70-16f47858dab5	Monaliza Monsalud	good	5	0	1.2025.3
5df3588a-626c-4572-800	dhanurjaya mohanta	It's best	5	0	1.2025.3

- Kaggle Dataset - ChatGPT Reviews, Updated Daily
- Size: ~ 60,000 Reviews
- Features:
 - Review Text
 - User Ratings (1-5 stars)
 - Timestamp
 - Likes & App Version

5. Methodology

Preprocessing

- Removal of punctuation, HTML tags, emojis, URLs, duplicates
- Text Normalization - lowercase, whitespace
- Tokenization, Stopword Removal, Lemmatization

	content	processed_txt
0	nice	nice
1	this is my best friend	this is my best friend
2	The best ai ever use	the best ai ever use
3	best	best
4	Really surprised that it can prepare question ...	really surprised that it can prepare question ...
5	amazing app	amazing app
6	wowwwwww	wo
7	muy buena	muy buena
8	good 😊	good smiling face with smiling eyes
9	best app	best app
10	ok	ok
12	fab	fab
13	so talented	so talented
14	very good not awesome	very good not awesome
15	suberb	suberb
16	Good	good
17	ChatGPT is my online bestfriend 😊🤖	chatgpt is my online bestfriend smiling face w...
18	👉👉	thumbs up thumbs up
20	Good enough, just the daily limit of images an...	good enough just the daily limit of images and...
21	it's very nice	it's very nice
22	chat gpt ❤️❤️❤️	chat gpt growing heart ribbon growing heart

5. Methodology

Feature Engineering

The process of creating or modifying features that machine models can understand. The process of creating new textual data into features

- This additional step is crucial for preparing the dataset to enhance the performance of machine learning models and to view trends in data

Feature Engineering Steps:

- Sentiment Analysis - Derive sentiment scores for each review to capture the mood of the reviews
- Review Count Extractions - Day of the week, month, and year from feature ‘review_date’ to infer certain days/weeks to obtain more reviews from users.

5. Methodology

Word Cloud of Positive ChatGPT Reviews



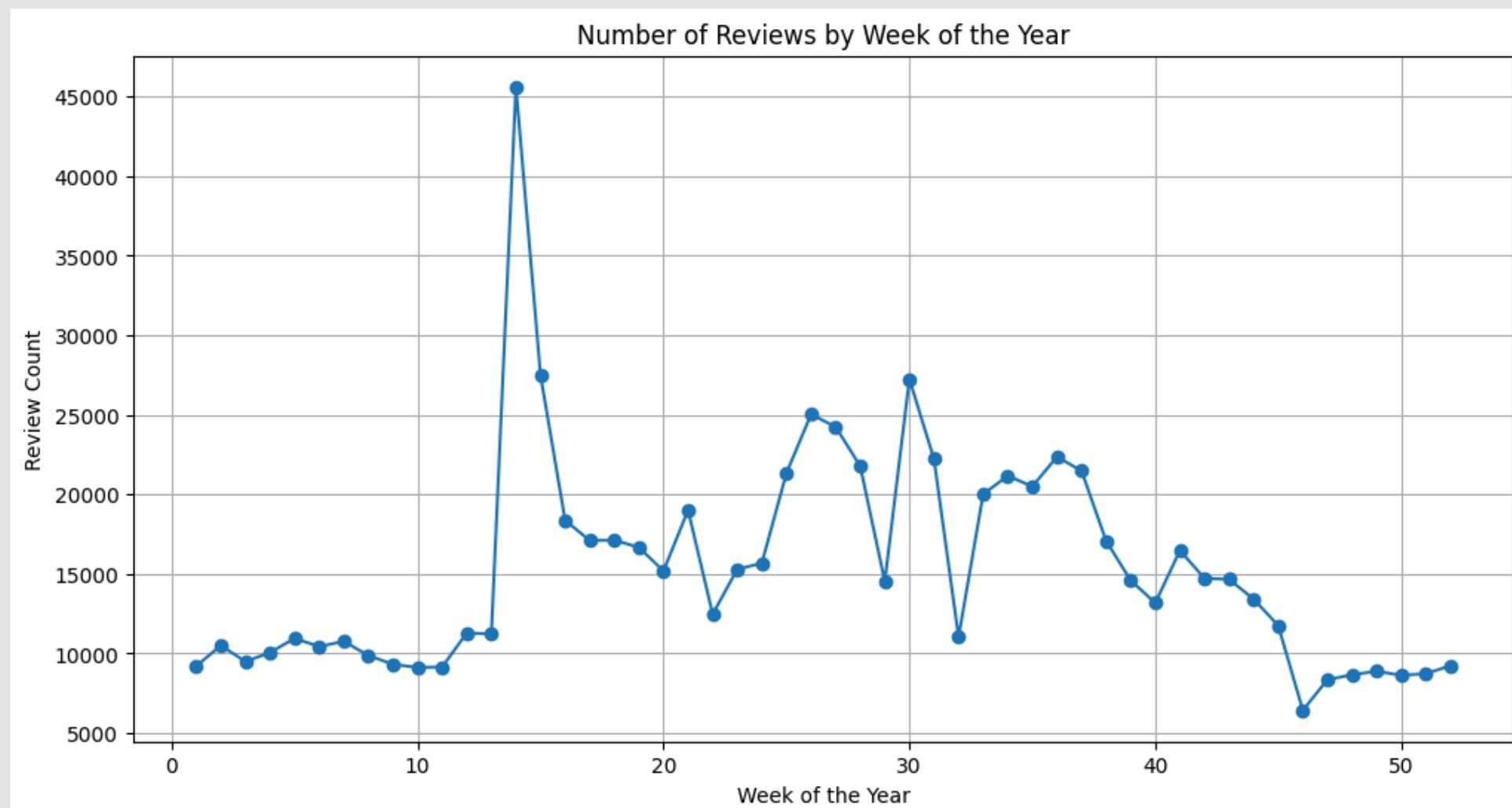
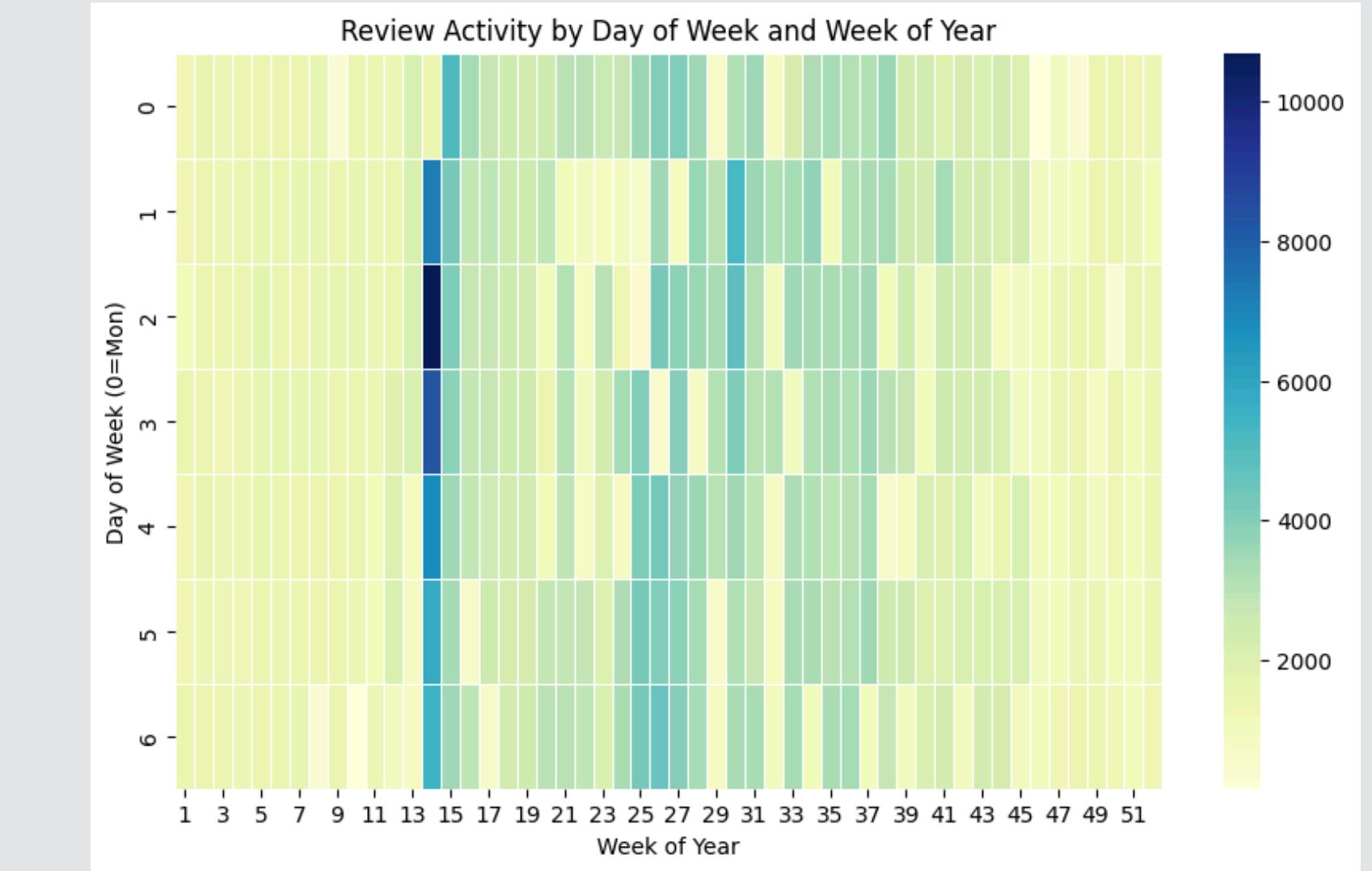
Word Cloud of Neutral ChatGPT Reviews



Word Cloud of Negative ChatGPT Reviews



5. Methodology



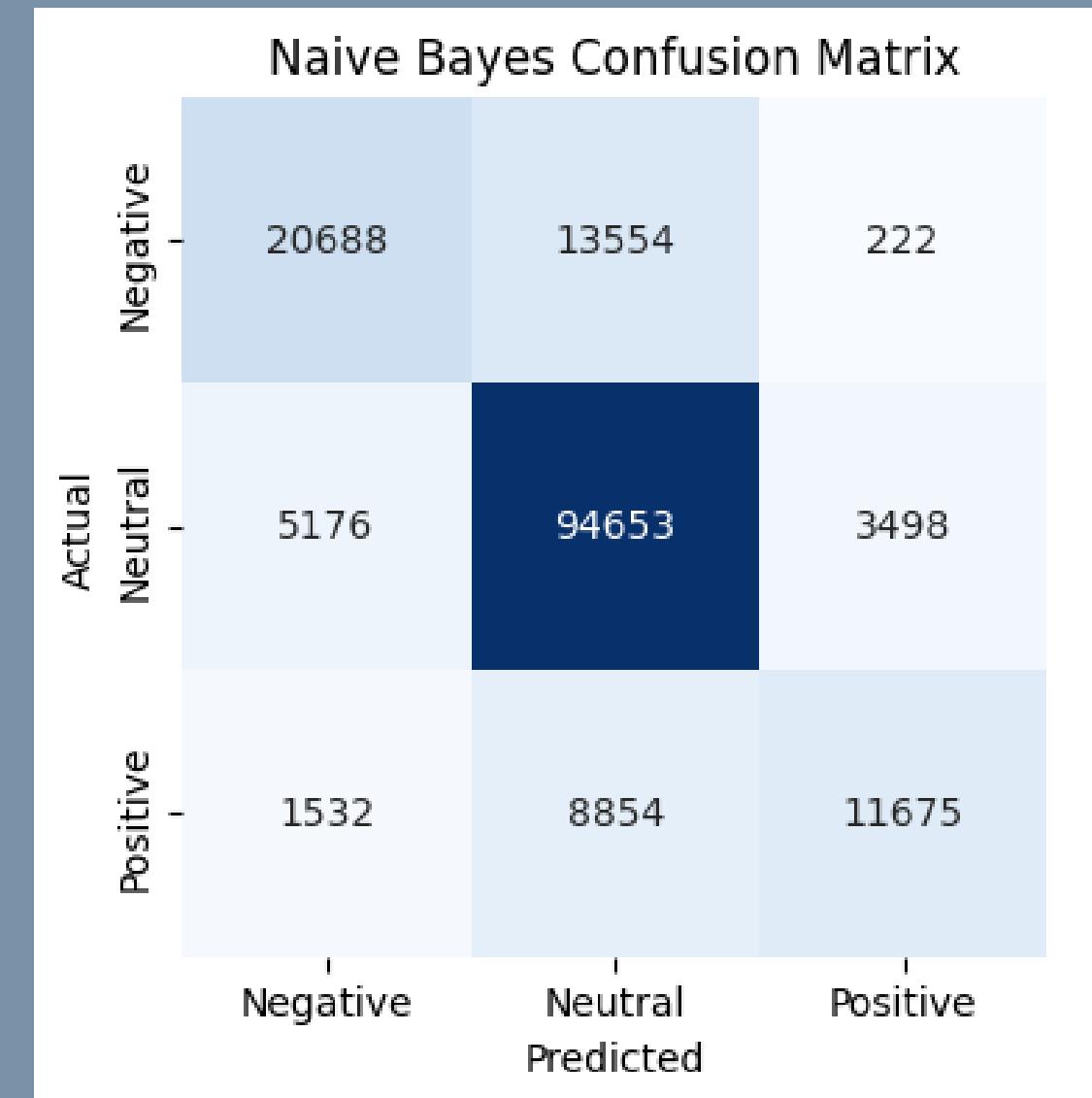
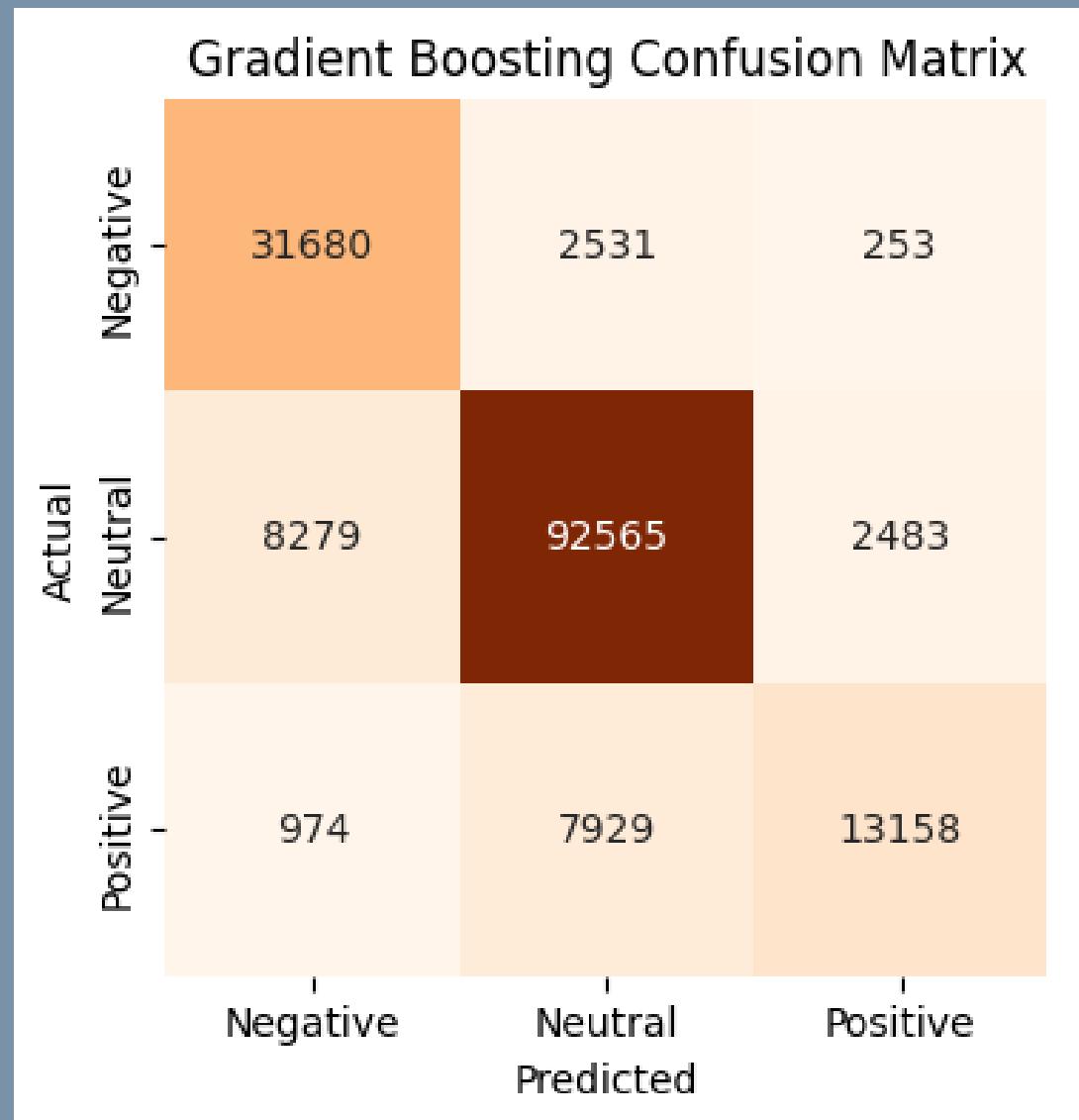
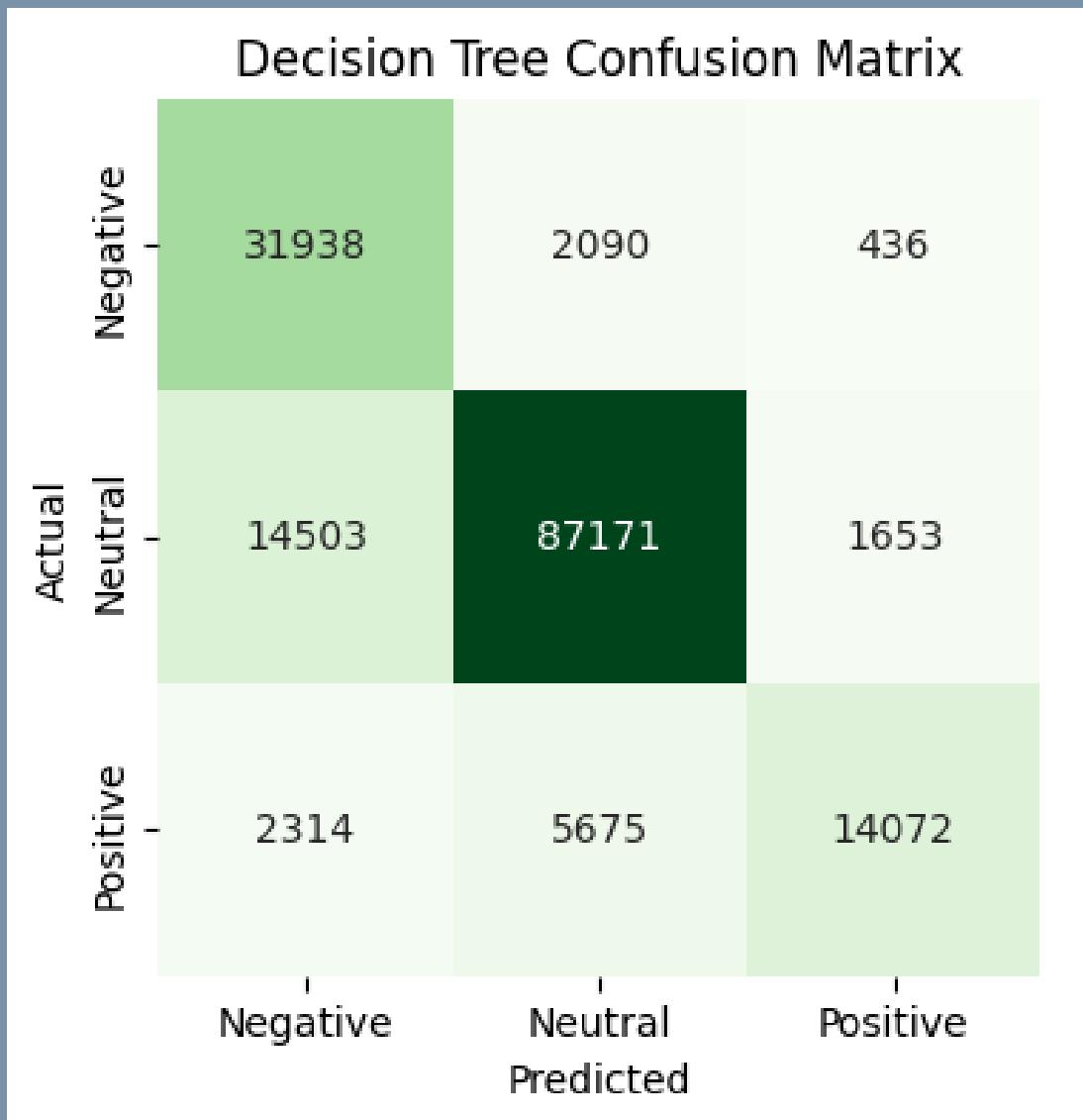
5. Methodology

Model Comparison

6. Result

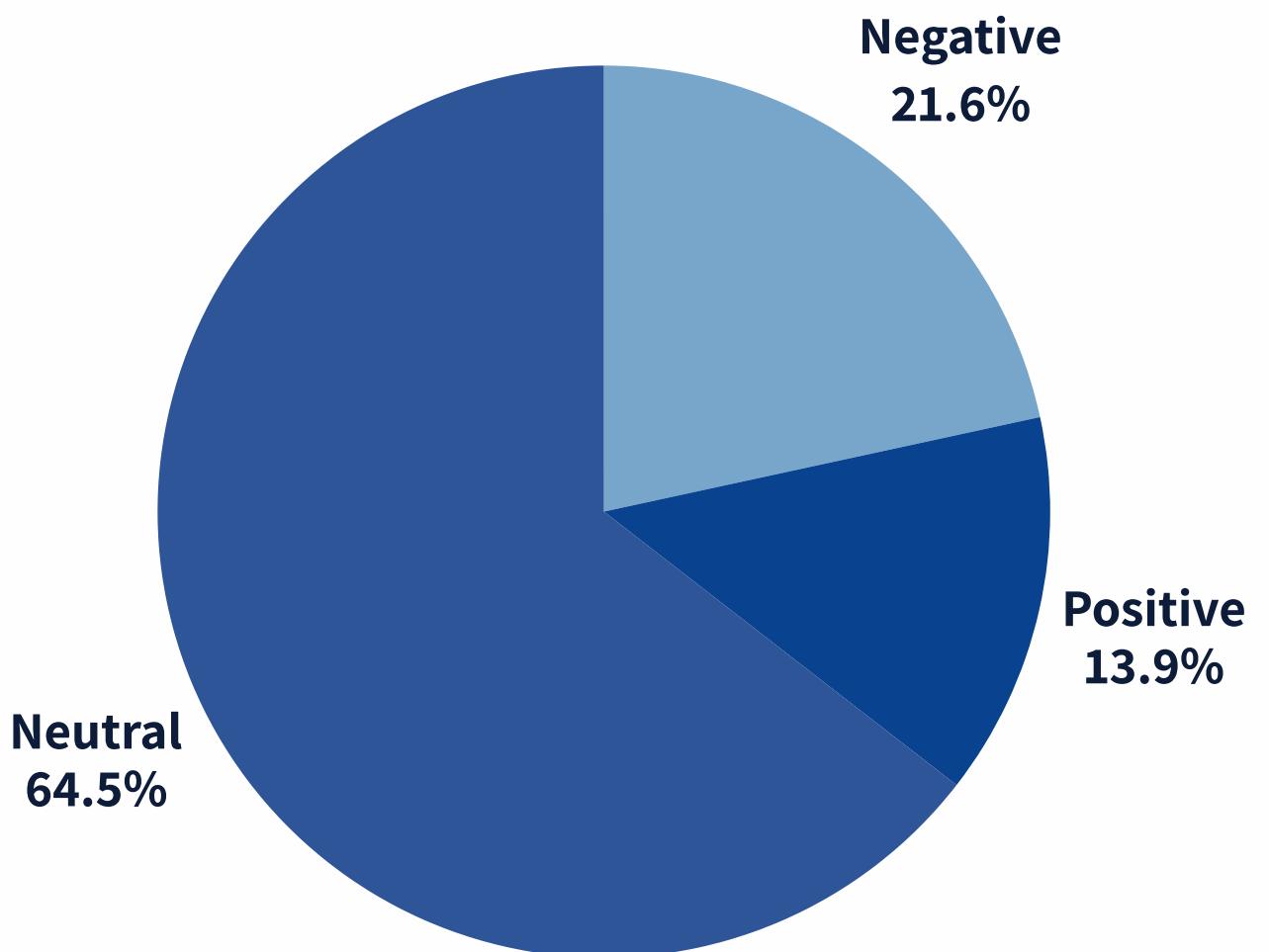
Model	Test Accuracy	Positive Prec/Recall	Neutral Prec/Recall	Negative Prec/Recall
<u>Naive Bayes</u>	79%	Precision: 81% Recall: 92%	Precision: 76% Recall: 53%	Precision: 76% Recall: 60%
<u>DT</u>	83%	Precision: 87% Recall: 64%	Precision: 92% Recall: 84%	Precision: 66% Recall: 93%
<u>Gradient Booster</u>	85%	Precision: 83% Recall: 60%	Precision: 90% Recall: 90%	Precision: 77% Recall: 92%

6. Result



Result

- Model Evaluations: Gradient Booster has the best accuracy of 85% of all sentiments
- With Sentiment Analysis, we can conclude that most reviews are neutral, with a 64.5% overall percentage



6. Result

Observations/Errors

- Why Neutral Reviews Dominate
 - Users often leave reviews like “works fine”, “okay”, “it’s good but...”, which do not hold strong sentiment words
 - Without emotional language, user star ratings are mostly classified as neutral when converted to text
- Positive Reviews Had Low Recall
 - $\frac{1}{3}$ models had high recall of positive reviews
 - Weak TF-IDF signals may occur due to short positive reviews; Positive and Neutral overlap words

7. Importance/Conclusion

Importance/Conclusion

- Provides Actionable Insights for Improving AI Systems
- Better Understanding of User Experiences
 - By analyzing sentiment trends through time with each app version and update, developers can identify patterns in users' trust and attitudes toward AI applications





THANK YOU

Questions?