

Jan'25-May'25

O7 Services, IT Company,  
Jalandhar



# Unleashed

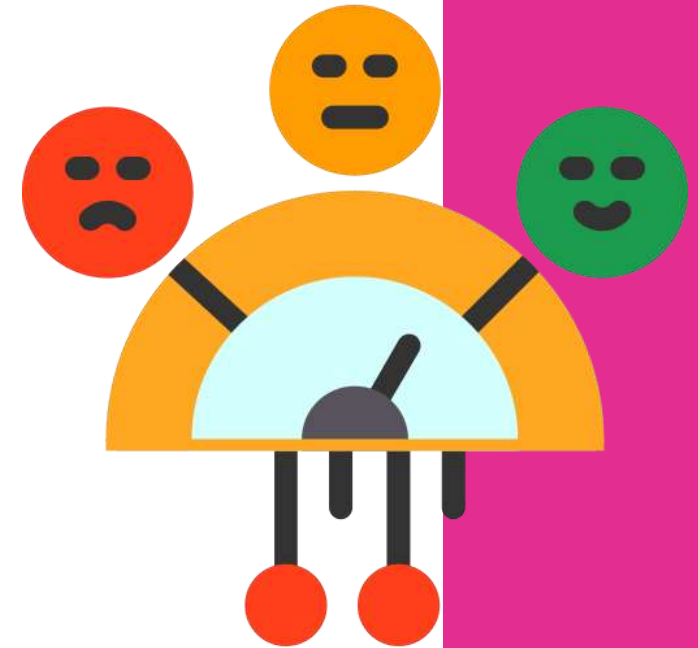
## Sentiment Analysis for Consumer Electronics

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# Sentiment Analysis

Determining the Sentiment or Emotion behind a piece of text.





# Problem Statement

## **01 Understand Customer Perception**

Gain insight into how users truly feel about products.

## **02 Identify Product Strengths & Weaknesses**

Pinpoint features that customers praise or complain about.

## **03 Competitive Benchmarking**

Compare sentiment across rival brands.

## **04 Support Data-Driven Decisions**

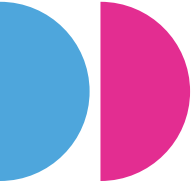
Empower managers with sentiment-backed feedback.

## **05 Detect Emerging Trends**

Track evolving consumer concerns by sentiment patterns over time.

## **06 Improve Customer Satisfaction & Loyalty**

Use sentiment insights to address negative feedback faster.



# What Unleashed Offers?



## **Snapshot**

Concise overview featuring sentiment counts.



## **The Deep Dive**

Get Deeper insights into the data.



## **Competitive Landscape**

Compare product sentiment across brands.



## **NLPfication**

Performing NLP operations and get familiar with text processing.



## **Analysis Hub**

Analyze text in real time or via csv upload.



# Tech Stack

Streamlit  
TextBlob  
NumPy  
Pandas  
spaCy

NLTK  
Plotly  
Plotly Express  
Matplotlib  
Seaborn

# Data Collection and Handling

- Datasets collected from Kaggle
- Data Cleaning, Transformation, Integration and Analysis using NumPy and Pandas
- Data Presentation using matplotlib and seaborn



# Visualization



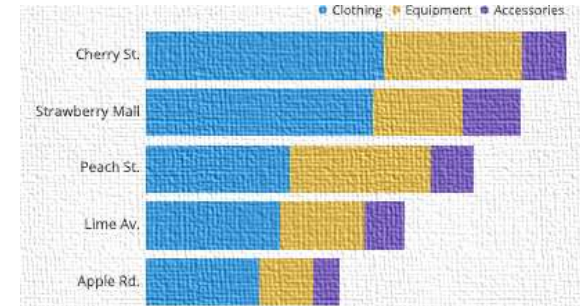
## Bar Charts

Displayed Sentiment Label counts using bar chart.



## Pie Chart

Showed different distributions within data using pie and donut chart.



## Stacked Bar Chart

Utilized in competitive analysis to compare different brands.



# Text Processing and Labelling

## Stop Word Removal

Cleaning Text using stop word from NLTK.

## Lemmatize

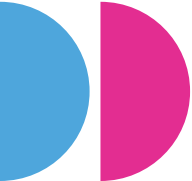
Using word net lemmatizer to perform lemmatization.

## Lower Case

Converting words to lower case for consistency.

## Labelling

Assigning polarity scores and sentiment labels using textblob.





# Deployment and Installation



- Deployed in Streamlit Community Cloud by creating GitHub repository.
- Added requirements.txt and stopwords.txt files.

## Installation:

# Clone the repo

git clone <https://github.com/prachikohlai/Unleashed-Sentiment-Analysis-For-Consumer-Electronics.git>

`cd Unleashed-Sentiment-Analysis-For-Consumer-Electronics`

# Run the app

`streamlit run 1_Welcome_Aboard.py`

# Challenges Faced



## Biased Dataset

The dataset bias was a great challenge as more than 50% of the dataset consisted of positive comments representing real life scenario.

## Grouped Bar Charts

Not more than 4 category “grouped bar chart” could be plotted due to increased complexity.

## Deployment errors

A lot of deployment errors encountered during deployment on streamlit community cloud.

# Future Enhancements



## Emoji Detection

Adding emoji detection and classification along with text classification as reviews contain emojis also.



## Multilingual Sentiment Analysis

Supporting multiple languages enable diverse users to use the project.



## Real Time Sentiment Analysis

Integrating with real time data or APIs can provide great advantages.

# Acknowledgement

I would like to express special thanks of gratitude to my parents for supporting me always , as well as my mentor Er. Harkirat Singh Who gave me this golden opportunity which helped me in doing a lot of research and learn so many new things.

Secondly, I would also like to thank my friends who helped me a lot in finishing this project.

## Thank You to All Who Supported

