

ECHO INSIGHTS

YouTube Sentiment Analysis

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Abstract



ECHO INSIGHTS utilizes YouTube API V3 and Vader models for sentiment analysis. It translates comments with Google Translate and presents results in a Streamlit dashboard. The dashboard visualizes sentiment patterns, including overall sentiment scores. A word cloud highlights prevalent topics within comments. ECHO INSIGHTS empowers content creators with actionable insights for optimized content strategy and audience engagement.

INTRODUCTION

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ECHO INSIGHTS is an advanced social media analytics tool tailored for YouTube. It utilizes cutting-edge technology, including the YouTube API and sentiment analysis algorithms, to extract and analyze audience interactions. The platform offers intuitive data visualization through Streamlit, allowing users to identify popular topics and sentiment patterns from comments. With comprehensive sentiment analysis results and easy PDF documentation, content creators, marketers, and researchers can make informed decisions to optimize their YouTube content strategies for success.

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EXISTING SYSTEM

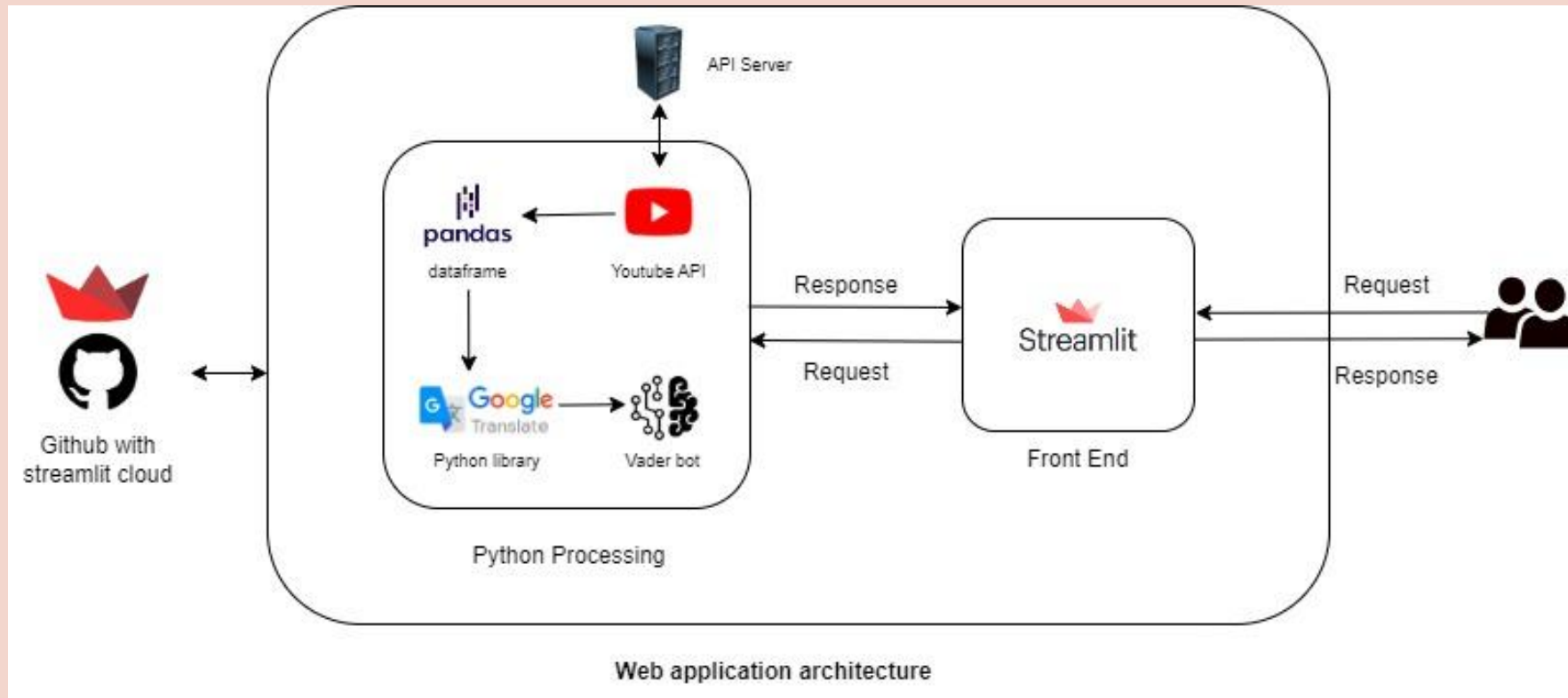
- Currently, analyzing sentiments and extracting meaningful insights from YouTube comments require manual effort, often limited by language barriers when dealing with diverse global audiences. Users typically have to sift through large volumes of comments without automated translation and sentiment analysis tools. This manual process is time-consuming, prone to errors, and lacks a streamlined visualization mechanism for efficient interpretation.

PROPOSED SYSTEM

- The proposed social media analytical tool addresses the limitations of the existing system by automating the process of extracting YouTube comments, translating them into English, and performing sentiment analysis using pre-trained models. This streamlined approach significantly reduces the time and effort required for sentiment analysis, allowing users to gain insights into the overall sentiment of the audience.

System Architecture

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Software / Hardware Used

Processor	Core i3 or more
RAM	4GB or more
Browser	Chrome 64+ or Edge 79+
OS	Any OS with supported browsers

The software requirements for "ECHO INSIGHTS" are as follows:

- 1) Any mobile or computing devices with a web browser
- 2) All the libraries installed or via req.txt (Streamlit, Vader, Google trans)

MODULES

1. DASHBOARD :

Streamlit-based dashboard allows easy integration with Python models and components, taking a YouTube video URL as input and presenting analysis results intuitively.

2. FETCH COMMENTS :

Utilizes YouTube API V3 to fetch up to 100 comments from a given video URL, extracting author, published time, like count, and comment text into a dataframe.

3. TRANSLATE :

Uses Google Translate's python library to translate comments from the fetched dataframe into a chosen language, outputting the translated comments for further analysis.

4. SENTIMENT :

Employs Vader bot, a pre-trained model, to assign sentiment values to comments, updating the dataframe with sentiment scores for each comment.

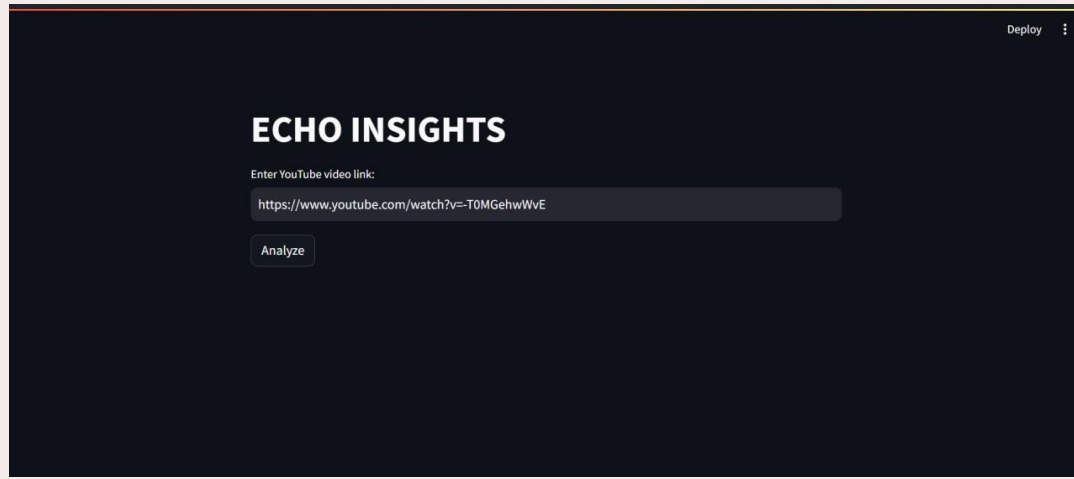
5. INSIGHTS :

Provides analysis of comments including top and worst comments, overall sentiment, sentiment distribution graph, and comment count over time graph.

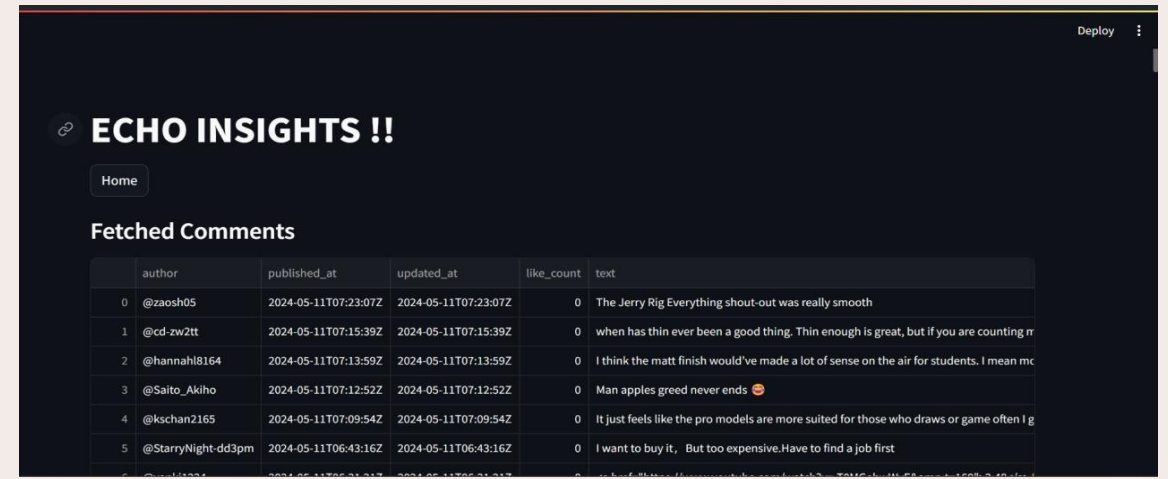
6. WORDCLOUD :

Visualizes most frequently used words in comments using Wordcloud python library, with word size indicating frequency, enhancing visual understanding of comment content.

Output Screenshots



Welcome Page

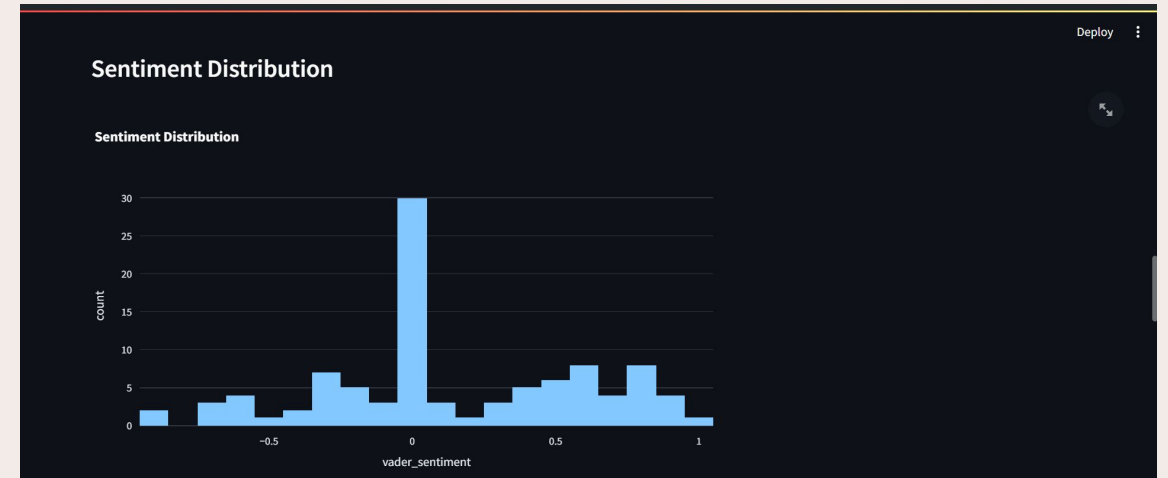


Display fetched comments

Output Screenshots

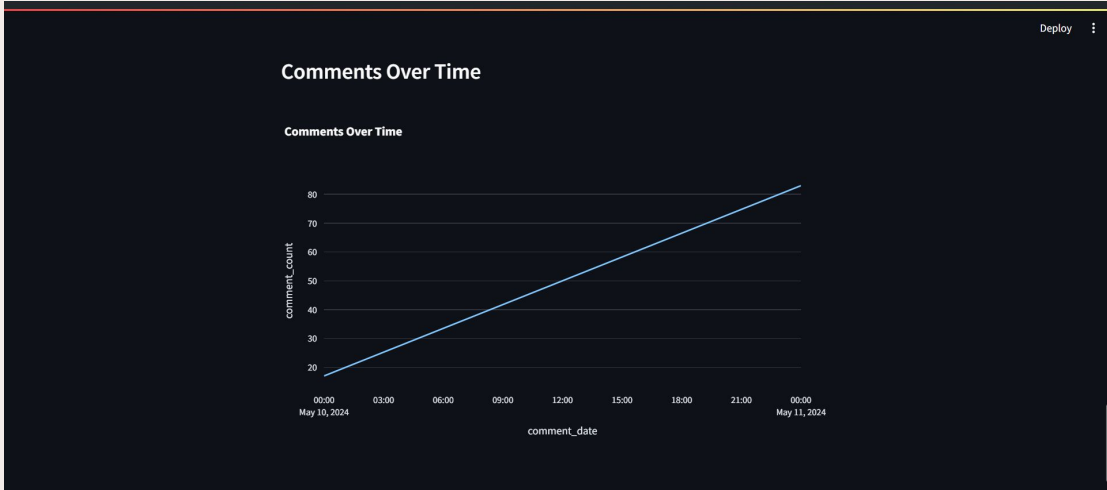
Translated Comments		Deploy
text	translated_text	
0 The Jerry Rig Everything shout-out was really smooth	The Jerry Rig Everything shout-out was really smooth	
1 when has thin ever been a good thing. Thin enough is great, but if you are counting r	when has thin ever been a good thing. Thin enough is great, but if you are counting r	
2 I think the matt finish would've made a lot of sense on the air for students. I mean mc	I think the matt finish would've made a lot of sense on the air for students. I mean mc	
3 Man apples greed never ends 🤔	Man apples greed never ends 🤔	
4 It just feels like the pro models are more suited for those who draws or game often I g	It just feels like the pro models are more suited for those who draws or game often I g	
5 I want to buy it, But too expensive.Have to find a job first	I want to buy it, But too expensive.Have to find a job first	
6 2:48	2:48	
7 Anyway, did we get a calculator?	Anyway, did we get a calculator?	
8 @MkHBD, it may not be relevant for you and it's ridiculous in terms of power. But, Voi	@MkHBD, it may not be relevant for you and it's ridiculous in terms of power. But, Voi	
9 Until Mac OS comes to iPad they can't do anything to make this thing worth it to me	Until Mac OS comes to iPad they can't do anything to make this thing worth it to me	

Displays translated comments

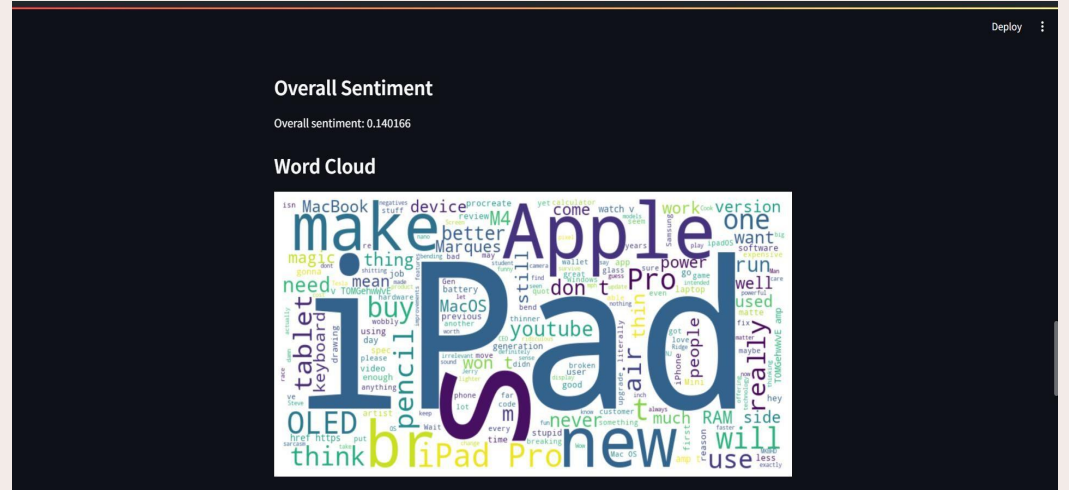


Sentimental Distribution Graph

Output Screenshots



Comments over time graph



Word count of comments

CONCLUSION :

ECHO INSIGHTS helps researchers, marketers, and content creators understand audience emotions on YouTube through YouTube API and sentiment analysis. It provides practical insights and interactive visualizations via a user-friendly Streamlit dashboard to optimize content strategies.

FUTURE ENHANCEMENT :

Multi-Platform Support: Expand ECHO INSIGHTS to analyze sentiment on Facebook, Instagram, and Twitter for a comprehensive digital footprint.

Report Generation: Introduce customizable reporting options in formats like interactive dashboards, CSV files, and PDFs.

Predictive Analytics: Integrate tools to predict future audience behavior, helping users optimize content strategies.

REFERENCE

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THANK YOU