TECHNICAL APPROVAL COMMITTEE – REPORT SUBMISSION FORMAT

Youtube Comments Sentiment Analysis Web Application

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Abstract:

This project involves building a sentiment analysis tool using the YouTube Data API. Through Natural Language Processing (NLP), the application will analyze sentiments within video comments and transcripts. By harnessing API capabilities, it aims to uncover emotional patterns and trends in YouTube content. This project serves to provide valuable insights for content creators and marketers, enhancing their understanding of audience sentiments and engagement dynamics on the platform.

Introduction:

In the digital age, online platforms like YouTube have evolved into dynamic spaces where content creators engage with diverse audiences worldwide. Understanding audience sentiments towards videos is pivotal for creators and marketers aiming to tailor content strategies effectively. This project introduces a sentiment analysis tool leveraging the YouTube Data API and Natural Language Processing (NLP) techniques. By analyzing comments and transcripts, it aims to unveil emotional trends, offering valuable insights into viewer perceptions and engagement dynamics within the YouTube ecosystem

Design:

The design encompasses a user-friendly web interface allowing input. Utilizing the YouTube Data API, it retrieves video data such as comments and transcripts. Employing NLP techniques, sentiment analysis algorithms decode emotional tones, presenting insights for user engagement

Methodology:

1. **Data Retrieval :**Utilize YouTube Data API to gather video details, including comments and transcripts.
2. **Preprocessing :** Cleanse and tokenize text data, removing noise and formatting inconsistencies.
3. **NLP Analysis :** Apply sentiment analysis algorithms (like NLTK or spaCy) to interpret emotional tones in comments and transcripts.
4. **Insight Generation:** Compile results into actionable insights, presenting emotional trends and correlations between sentiment and user engagement metrics.

Results and Discussion:

1. Results demonstrate a varied emotional spectrum within YouTube content.
2. Scrapped youtube comments could be downloaded as csv using the web applications

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Outcome of project:

The outcomes of this project include:

1. **Insightful Sentiment Analysis:** Providing a comprehensive understanding of emotional trends within YouTube content, aiding creators in crafting emotionally resonant videos.
2. **Enhanced Engagement Strategies:** Empowering content creators and marketers with data-driven insights to tailor strategies that align with audience sentiments, potentially boosting user engagement.
3. **Validating NLP Techniques:** Demonstrating the effectiveness of Natural Language Processing (NLP) algorithms in deciphering emotions within large volumes of user-generated content on online platforms like YouTube.
4. **Identification of Limitations:** Highlighting potential limitations in sentiment analysis methods, paving the way for future refinements and improvements in NLP-based approaches for online sentiment assessment.

Cost Analysis:

The project incurred zero software expenses as it extensively utilized open-source tools, resulting in a cost-effective development approach.

References:

Dataset :

https://www.kaggle.com/datasets/abhi8923shriv/sentiment-analysis-dataset

API:

https://cloud.google.com/apis

Streamlit :

https://streamlit.io/