Project Title : Investigate sentimental data from twitter for business strategies using machine learning

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ABSTRACT :

The aim of this project is to analyze the sentiments of expressed in tweets, categorizing them as positive , negative or neutral. The data will consists of Twitter data, and the analysis will provide insights into public opinions ,trendsand emotions on different topics. The project contributes to the field of social media analytics and showcases the practical application of machine learning in understanding sentiment patterns on a large scale.

Sentimental analysis is a fast track area of research in high demand for business giving them the ability to understand and adapt their business stratagies. This research contributes to the application of machine learning in business intelligence,fostering a more informed and responsive approach to customer satisfaction and market trends.

Existing system & proposed system :

Existing system:

The current scenario often lacks an efficient mechanism for businesses to guage and understand customer sentiments on social media,particularly on twitter.Manual analysis is time consuming,subjective and may be provide a comprehensive overview of the sentiments expressed. Business may struggle to extract actionable insights from the vast amount of twitter data.

Proposed System:

1. Advanced Feature Extraction:

- **NLP Techniques:** Utilize advanced NLP techniques like word embeddings (Word2Vec, GloVe) for richer semantic representations.

- **Deep Learning:** Experiment with deep learning models like Recurrent Neural Networks (RNNs) or Transformers (e.g., BERT) to capture context and dependencies.

2. Customized Sentiment Analysis Model:

- **Deep Learning Architecture:** Train a custom sentiment analysis model using a deep learning architecture tailored to Twitter data.
- **Transfer Learning:** Fine-tune the model using transfer learning on a pre-trained language model for improved performance.

3. Real-time Analysis and Visualization:

- **Real-time Pipeline:** Implement a real-time analysis pipeline to handle incoming tweets.
- **Visualization:** Provide visualization tools for sentiment trends, word clouds, and other insights in real-time.

Requirements :

Software requirements:

- Twitter API Access
- Data cleaning and preprocessing
- Natural language processing
- Machine leaning frameworks
- Data Visualization
- Web Framework

Hardware requirements:

- Processor
- RAM
- Storage
- GPU
- Internet connection