Stock Movement Analysis Based on Social Media Sentiment

Introduction

This project involves predicting stock movements based on sentiment analysis of data scraped from social media platforms such as Twitter, Reddit, or Telegram. Sentiments like positive, neutral, or negative are extracted to infer stock trends.

Steps Implemented

1. Data Scraping:

- Twitter data was scraped using the Tweepy API.

- Text preprocessing techniques were applied to clean tweets.

2. Sentiment Analysis:

- Sentiments (positive, neutral, negative) were calculated using TextBlob.

3. Model Training (Upcoming):

- The processed data will be used to train ML models like Random Forest or LSTM.

4. Evaluation Metrics:

- Accuracy, Precision, Recall, and F1-Score will be computed.

Challenges

1. Handling noisy data and irrelevant tweets from the Twitter API.

2. Balancing sentiments in the dataset to avoid skewed predictions.

3. Efficient integration of scraped sentiment data with stock price data.

Future Work

Future iterations may integrate data from multiple platforms like Reddit or Telegram, and advanced

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ML techniques like transformers for sentiment analysis to improve accuracy.