

Project Report: Sentiment Analysis on Financial News

Objective

The objective of this project is to analyze the sentiment of financial news articles and classify them as Positive, Neutral, or Negative. The goal is to understand how news sentiments may influence investor perception and decision-making in financial markets.

Tools

- Python: Main programming language
- Pandas: for data loading and preprocessing
- NumPy: for numerical operations
- Matplotlib and Seaborn: for data visualization
- NLTK / TextBlob / VADER: for sentiment analysis
- Scikit-learn: for model evaluation
- BeautifulSoup / Requests: for web scraping (optional)

Data

Source: Financial news articles scraped or from public datasets.

Features:

- Title or Content of the article
- Date of publication (optional)
- Sentiment (derived using NLP tools)

Sample Data:

1. 'Market rallies as inflation slows down' - Positive
2. 'Investors remain cautious amid global slowdown' - Neutral
3. 'Stocks plummet due to geopolitical tension' - Negative

Methodology

1. Data Collection: Scraped or downloaded financial news headlines.
2. Text Preprocessing: Lowercasing, removing punctuation/stopwords, tokenization.

3. Sentiment Analysis: Used VADER (NLTK) with compound scores to classify as:

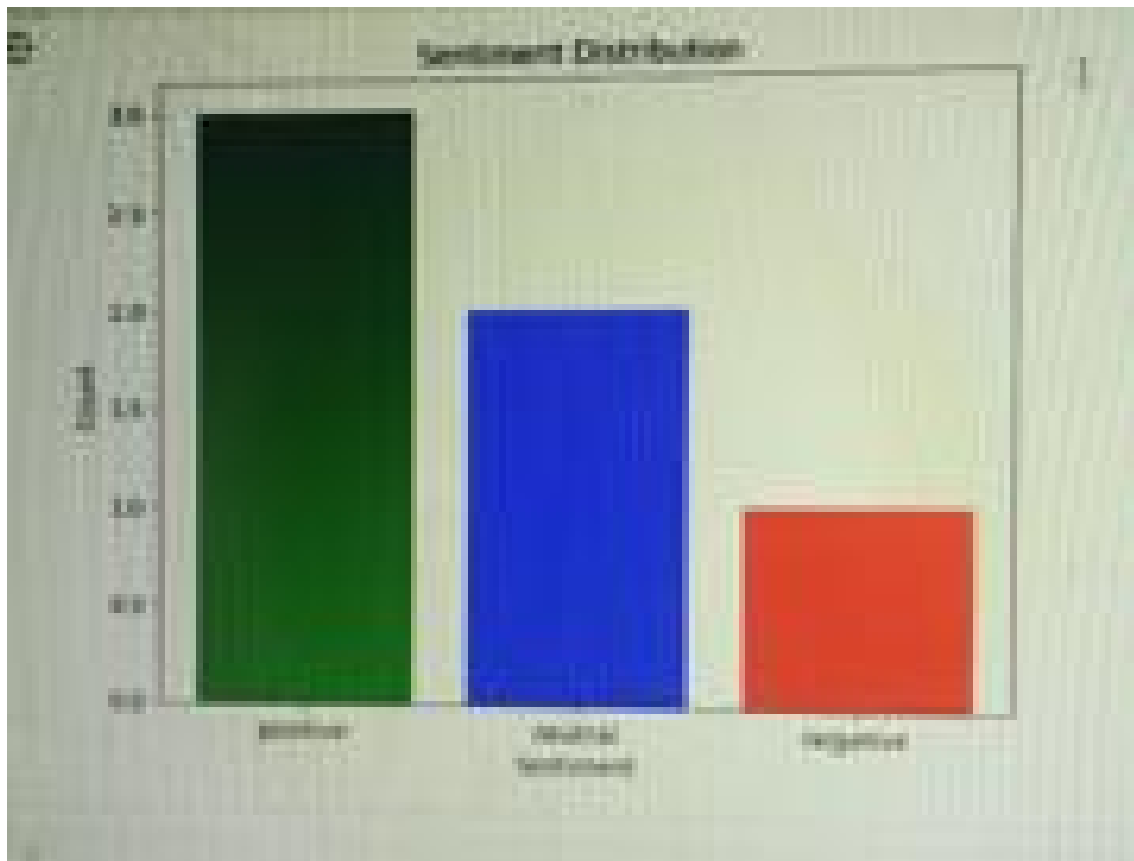
- Positive (score > 0.05)
- Neutral (between -0.05 and 0.05)
- Negative (score < -0.05)

4. Visualization: Created bar chart showing sentiment distribution.

Visualization

A bar chart displays the Sentiment Distribution:

- Green (Positive): 3 articles
- Blue (Neutral): 2 articles
- Red (Negative): 1 article



Conclusion

Majority of the financial news articles had positive sentiment. This insight is valuable for investors, traders, or analysts factoring sentiment into strategies. Future steps could include:

- Using ML models (e.g., Logistic Regression, BERT) for advanced analysis
- Linking sentiment to stock market trends over time.