

STOCK SENTIMENT ANALYSIS

MCA Major Project

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Chandigarh University

Objective


- - Classify financial sentiment (positive, negative, neutral).
- - Explore sentiment vs. stock price correlation.
- - Build and deploy a web-based sentiment analysis system.



Introduction

- - Stock market influenced by public sentiment.
- - NLP helps extract sentiment from text.
- - Real-time analysis offers actionable insights.

Stock Sentiment Analyser



This tool predicts whether the stocks will increase or decrease or remain constant on basis of news headlines

Please Feed A Headline

Headline...

Analyze

Latest Headlines

- Fibre optic drones: The terrifying new weapon changing the war in Ukraine
- Liverpool parade: Man wrongly identified as driver speaks out
- Andrew and Tristan Tate to face 21 charges in UK, prosecutors say
- Heathrow Airport chief asleep as airport closed over outage - report
- Skittles-maker Mars phases out controversial colour additive
- Liverpool parade: Police get more time to question suspect
- French paedophile surgeon who abused hundreds sentenced to

SDLC – Overview

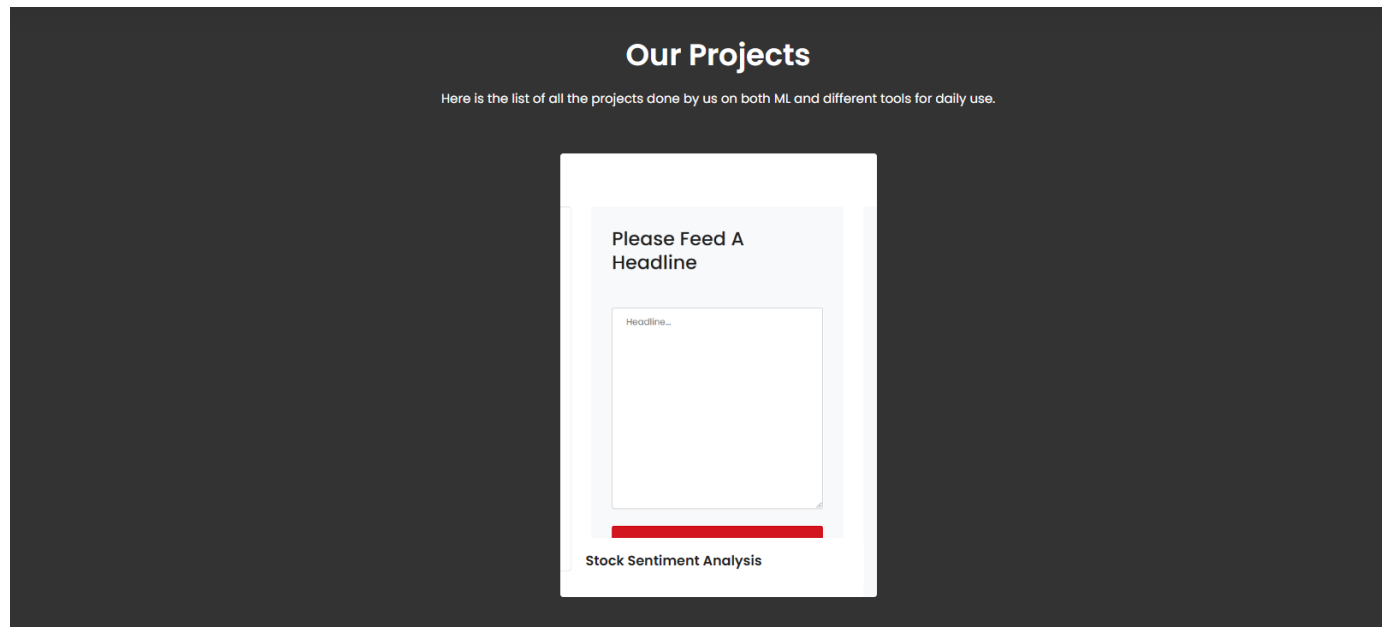
- - Requirement Analysis
- - System Design
- - Implementation
- - Testing
- - Deployment
- - Maintenance

System Requirements

- - Frontend: HTML, CSS, JS
- - Backend: Django (Python)
- - ML: NLTK, TensorFlow, Scikit-learn
- - Storage: SQLite, PyDrive
- - APIs: Twilio, Python-Decouple

System Architecture

- Include a visual of system architecture diagram
- Layers: Frontend → Backend → ML/NLP → Database/File Storage





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Stock Sentiment Analysis



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Harsh

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Fibre optic drones: The terrifying new weapon changing the war in Ukraine



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stocks may increase





This tool predicts whether the stocks will increase or decrease or remain constant on basis of news headlines

A1 Northumberland: Homes 'left to rot' on cancelled road route



Analyze

airport closed over outage - report

- › Skittles-maker Mars phases out controversial colour additive
- › Liverpool parade: Police get more time to question suspect
- › French paedophile surgeon who abused hundreds sentenced to 20 years in jail
- › Swiss glacier collapse buries most of village of Blatten
- › Comedian Andrew Lawrence's show axed after Liverpool parade joke
- › A1 Northumberland: Homes 'left to rot' on cancelled road route

stocks may decrease or remain same



Implementation

- - Django-based modular structure
- - ML model integration for sentiment
- - Preprocessing using NLTK
- - Real-time user interaction

ML Pipeline

- 1. Text Input
- 2. Preprocessing (tokenization, stopwords)
- 3. Sentiment Prediction
- 4. Output to User

Testing

- - Unit Testing
- - Integration Testing
- - Functional Testing
- - Sample Cases:
- - “Stocks are going up today” → Positive ☐

Challenges & Fixes

- - Biased sentiment output → Retrained with balanced data
- - UI didn't show empty input error → Added validation
- - Large inputs crashing → Added length limit

Results

- - High accuracy with real data.
- - Effective UI integration.
- - Real-world applicability validated.

Applications

- - For traders/investors to make data-backed decisions.
- - Can evolve into a real-time sentiment dashboard.
- - Foundation for automated trading systems.

Future Work

- - Real-time streaming from news/social media.
- - Integration of advanced models (RNNs, transformers).
- - Mobile app version.
- - Deeper financial data sources.

Conclusion

- - Demonstrated NLP/ML in stock sentiment analysis.
- - Practical system built and tested.
- - Foundation for further research in financial analytics.

THANK YOU

Questions?

Submitted by: Harsh

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