

A Project Report On

“**TRADON”**

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Tradon, an AI-powered stock forecasting tool, blends Time Series Analysis and Natural Language Processing (NLP) for accurate predictions. It integrates historical data analysis with sentiment insights from news and social media. The goal is to empower investors with informed decisions in dynamic markets.

Project:

Tradon is developed by pre-final year BCA students exploring AI, finance, and UX design. It aims to offer a sophisticated forecasting tool for modern investors. Components include NLP, time series analysis, engaging frontend, and MongoDB cloud for data management.

Key Features:

1. AI Forecasting: Utilizes advanced algorithms for precise stock predictions.

2. NLP Integration: Extracts market sentiment from news and social media for nuanced insights.

3. Captivating Frontend: Offers intuitive navigation, interactive visuals, and real-time updates.

4. MongoDB Cloud: Ensures scalable and reliable data storage and retrieval.

Technical Approach:

1. NLP and Time Series Analysis: Extracts insights from textual data and historical stock prices.

2. Frontend Development: Uses modern web technologies for responsive and appealing interfaces.

3. MongoDB Cloud Integration: Provides scalable data management solutions.

Conclusion:

Tradon is a collaborative effort to create an innovative AI stock forecasting tool. With continuous improvements, it aims to be a leading solution for informed decision-making in financial markets.

Recommendations:

- Validate and refine predictions for accuracy.

- Enhance sentiment analysis and frontend features.

- Update AI algorithms to adapt to market changes.

Developer Profile: Arya Pratap Singh

Arya excels in market research and non-technical task management. He conducts in-depth analysis and ensures project efficiency.

Key Skills:

1. Market Research: Identifies trends and analyzes market dynamics.

2. Task Management: Plans, schedules, and allocates resources effectively.

3. Communication: Conveys complex ideas clearly and fosters collaboration.

Developer Profile: Abhishek Kumar

Abhishek leads backend development, model training, and deployment. As a team leader, he ensures seamless project execution.

Key Skills:

1. Backend Development: Designs and implements robust backend solutions.

2. Model Deployment: Deploys and monitors machine learning models.

3. Leadership: Guides the team and integrates project components.

Developer Profile: Ayush Khatri

Ayush specializes in frontend development and login page implementation, focusing on user experience and security.

Key Skills:

1. Frontend Development: Creates intuitive and engaging interfaces.

2. Authentication: Implements secure login and registration processes.

3. Testing: Conducts thorough testing to ensure functionality and security.

Developer Profile: Tezodipta

Tezodipta is an expert in backend development and database implementation, ensuring efficient data management.

Key Skills:

1. Backend Development: Builds scalable and reliable server-side solutions.

2. Database Implementation: Designs and optimizes database systems.

3. Data Management: Manages data migration, transformation, and integration.

Developer Profile: Gunjan

Gunjan excels in UI/UX design, crafting visually appealing interfaces and branding elements for seamless user experiences.

Key Skills:

1. UI/UX Design: Creates intuitive and engaging interfaces.

2. Branding: Develops visual identity and branding elements.

3. Usability: Prioritizes usability and accessibility for all users.

Capstone Project Report: Tradon - AI-Powered Stock Forecasting Tool

Introduction:

Tradon is a cutting-edge AI tool designed to revolutionize stock market forecasting by seamlessly integrating Time Series Analysis and Natural Language Processing (NLP) techniques. With a primary goal of delivering unparalleled accuracy in predicting stock movements, Tradon adopts a multidimensional approach that combines quantitative data analysis with qualitative insights extracted from news and social media platforms. By leveraging advanced AI algorithms, Tradon aims to provide investors with a comprehensive understanding of market dynamics, thereby empowering them to make informed decisions and optimize their investment strategies.

Project Overview:

Tradon is the result of a collaborative effort by a team of pre-final year BCA students, embarking on a capstone project to explore the intersection of AI, finance, and user experience design. The project aims to develop a sophisticated stock forecasting tool catering to the evolving needs of investors in today's dynamic financial landscape. Key project components include NLP and time series analysis methodologies, complemented by an engaging frontend interface and MongoDB cloud integration for efficient data management.

Key Features:

1. AI-Powered Forecasting:

Tradon utilizes state-of-the-art AI algorithms to analyze historical stock data and identify patterns indicative of future price movements. By incorporating machine learning models trained on vast datasets, Tradon offers predictive capabilities with high levels of accuracy and reliability.

2. Integration of NLP:

In addition to numerical data analysis, Tradon incorporates NLP techniques to extract sentiment and emotion from news articles and social media posts related to financial markets. By interpreting the collective mood of market participants, Tradon enhances its predictive capabilities, capturing nuanced insights that traditional quantitative models may overlook.

3. Captivating Frontend Design:

Tradon prioritizes user experience by implementing a captivating frontend interface designed to engage and empower users. The frontend interface features intuitive navigation, interactive visualizations, and real-time updates, ensuring a seamless and enjoyable experience for investors seeking to leverage Tradon's forecasting capabilities.

4. MongoDB Cloud Database:

Tradon utilizes MongoDB cloud as its database solution, offering scalability, flexibility, and reliability for efficient data storage and retrieval. The cloud-based architecture ensures seamless integration with Tradon's AI algorithms and frontend interface, enabling real-time access to curated datasets and analysis results.

Technical Approach:

1. NLP and Time Series Analysis:

The project employs advanced NLP techniques, including sentiment analysis and topic modeling, to extract relevant information from textual data sources such as news articles and social media posts. Time series analysis methods, such as ARIMA and LSTM, are applied to historical stock price data to identify patterns and trends for predictive modeling.

2. Frontend Development:

Tradon's frontend is developed using modern web technologies such as HTML, CSS, and JavaScript, supplemented by frameworks like React.js for building interactive user interfaces. The frontend design emphasizes responsiveness, accessibility, and visual appeal, ensuring a seamless experience across devices and platforms.

3. MongoDB Cloud Integration:

MongoDB cloud is employed as the backend database solution, providing a scalable and flexible storage infrastructure for Tradon's data management needs. The cloud-based architecture enables secure data storage, efficient querying, and seamless integration with Tradon's AI algorithms and frontend interface.

Conclusion:

Tradon represents a collaborative endeavor by a team of pre-final year BCA students to develop an innovative AI-powered stock forecasting tool. By integrating Time Series Analysis, NLP techniques, captivating frontend design, and MongoDB cloud integration, Tradon aims to provide investors with actionable insights and predictive capabilities to navigate the complexities of financial markets effectively. Through continuous iteration and refinement, Tradon seeks to establish itself as a leading solution for informed decision-making and optimized investment strategies.

Recommendations for Future Work:

- Conduct extensive testing and validation to ensure the accuracy and reliability of Tradon's predictions.

- Explore additional sources of data and incorporate more advanced NLP techniques for improved sentiment analysis.

- Enhance the frontend interface with more interactive features and customization options to cater to diverse user preferences.

- Continuously update and refine Tradon's AI algorithms to adapt to changing market conditions and incorporate new research developments in AI and finance.

By diligently following these recommendations, Tradon can further solidify its position as a leading AI-powered stock forecasting tool, providing investors with invaluable insights and predictive capabilities in the dynamic world of financial markets.