IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 8, April 2025
Impact Factor: 7.67

Stock Price Prediction Using MERN Stack

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Abstract: *The Stock Price Prediction project using the Machine Learning web application to predict future stock prices. The application allows users to input stock tickers, retrieve historical price data, and view interactive charts. The back-end, built with Express.js, connects the front-end to external financial APIs for real-time data and stores historical data in Database. For predictions, a machine learning model based on Long Short-Term Memory (LSTM) neural networks is deployed using Python and Flask. This model analyzes historical stock trends and forecasts future prices, with predictions displayed on the front-end built in React. The project provides a comprehensive platform for stock market analysis, offering users insights for decision-making. Future improvements could include enhanced model accuracy, real-time stock tracking, and personalized user features like watchlists and dashboards. This project demonstrates how modern web technologies can be integrated with machine learning to solvereal-world financial challenges.*

Keywords: stock price prediction, machine learning, financial forecasting, LSTM, regression

Abbreviations—LR: Linear Regression, SVM: Support Vector Machine, RF: Random Forest, LSTM: Long Short-Term Memory, MAE: Mean Absolute Error, RMSE: Root Mean Squared Error, R^2: Coefficient of Determination, SMPP-UML: Stock Market Price Prediction Using Machine Learning

DOI: 10.48175/IJARSCT-25594