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**Stock Price Prediction using ML algorithms**

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***Abstract :*** *Predicting the future value of stocks traded on exchanges is a critical task in the financial industry, aimed at maximizing gains and minimizing losses. This endeavor is challenging for many business analysts and researchers due to the volatile and complex nature of stock markets. Accurate prediction plays a vital role in the stock business, and the scope of this task has gradually expanded.*

*Traditional time series models often fall short in capturing the non-linear aspects of stock data, making them less effective for long-term predictions. In contrast, LSTM (Long Short-Term Memory) neural networks are better suited for handling both sequential and non-sequential data, providing more accurate long-term predictions. This advantage is reflected in the lower root mean square error (RMSE) of LSTM predictions compared to time series models, demonstrating that LSTM is a superior system for stock price forecasting.*

*Machine learning approaches are also employed to track and predict stock market behavior, including indices like Sensex. One effective model is the Random Forest, which predicts stock prices and analyzes the interactions between buyers and sellers in the market.*

***Keywords: LSTM –*** *Long Short-Term Memory, ANN – Artificial Neural Network, RNN – Recurrent Neural Network, TSLM – Time Series Linear Model, SVM – Support Vector Machine, ML – Machine Learning, CNN – Convolutional Neural Network, NN – Neural Network.*