

# Machine Learning-Based Stock Market Prediction: A Comprehensive Study on Forecasting Future Market Trends

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**Abstract:** *Stock market price prediction is a challenging task due to its complex and volatile nature, influenced by numerous factors. With the advancements in machine learning techniques, researchers have increasingly explored the use of these algorithms to forecast stock prices accurately. This abstract presents a novel approach to stock market price prediction utilizing machine learning, focusing on the absence of plagiarism to maintain ethical research practices. The proposed methodology involves a multi-step process, beginning with comprehensive data collection from reliable sources such as financial databases, market indices, and news sentiment analysis. Various features, including historical price trends, trading volumes, technical indicators, and macroeconomic variables, are extracted and preprocessed to ensure data quality*

**Keywords:** Random forest, SVM, Neural Networks, Deep Learning

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