

Machine Learning for Stock Market Prediction: Opportunities and Pitfalls

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Abstract: Machine learning (ML) has transformed numerous industries, and its application to stock market prediction is both promising and complex. This paper explores the role of ML in forecasting stock prices, identifying patterns, and supporting investment strategies. It discusses various ML techniques, the types of data employed, and both the advantages and limitations of using ML in this volatile domain. The paper emphasizes the balance between leveraging computational power and understanding market dynamics, with a special focus on interpretability and ethical implications.

Keywords: Machine Learning, Stock Market Prediction, Deep Learning, Financial Time Series, Technical Indicators, Sentiment Analysis, Algorithmic Trading, Data Integration, Model Interpretability, Financial Forecasting.

