Stock Market Analysis and Prediction Using Machine Learning

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The thesis examines the application of machine learning to financial data analysis and stock market movement prediction. The research frames the problem within the complexity and volatility of financial markets and analyses the potential of algorithmic models to identify patterns in historical data that can be used for forecasting. The methodology includes data preparation, selection of relevant variables, application and comparison of machine learning models, and evaluation of their predictive performance. The results are interpreted with due consideration of model limitations and market uncertainty. The thesis shows that machine learning can be a useful analytical tool, but forecasts must be used critically and in combination with a broader financial context.

Keywords: Machine learning · Financial markets · Predictive analysis