

PROJECT REPORT

WHICH MACHINE LEARNING ALGORITHM IS BETTER AT PREDICTING THE STOCK MARKET



ABRAHAM NATHANAEL KRISTIAN TO

21.K1.0001

Information Technology

Faculty of Computer Science

SOEGIJAPRANATA CATHOLIC UNIVERSITY

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WHICH MACHINE LEARNING ALGORITHM IS BETTER AT PREDICTING THE STOCK MARKET

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ONE OF THE REQUIREMENTS TO OBTAIN THE
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**ABRAHAM NATHANAEL KRISTIANTO
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ABSTRACT

In this digital era, stock trading has become increasingly accessible and is no longer limited to professional brokers, attracting many individuals seeking alternative or passive income sources. However, manual stock analysis and psychological biases—such as the disposition effect—often lead traders, especially beginners, to make suboptimal decisions that result in financial losses and emotional stress. To address these challenges, machine learning-based stock forecasting has emerged as one of the solutions for solving challenging prediction issues. The effectiveness of a number of machine learning models, such as Long Short-Term Memory (LSTM), Convolutional Neural Network (CNN), and Random Forest, in processing nonlinear datasets is assessed in this thesis. The studies show that Random Forest performs worst because it does not model time dependencies and treats each sample independently, making it less suitable for sequential stock datasets. CNN performs best because its convolutional layers can automatically capture local temporal patterns and short-term trends in time-series datasets, leading to more accurate predictions. The findings highlight the importance of selecting time-aware models for stock forecasting and demonstrate the potential of deep learning approaches to support more accurate and automated trading decisions.

Keyword: Stock_Prediction, Machine_Learning, LSTM, CNN, Random_Forest, Time_Series_Dataset

