

**PREDIKSI HARGA SAHAM BERDASARKAN ANALISIS
FUNDAMENTAL MENGGUNAKAN *LONG SHORT-TERM MEMORY*
DAN *LINEAR REGRESSION***

SKRIPSI

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar Sarjana
Komputer Program Studi Rekayasa Perangkat Lunak



oleh

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**PROGRAM STUDI REKAYASA PERANGKAT LUNAK
KAMPUS UPI DI CIBIRU
UNIVERSITAS PENDIDIKAN INDONESIA
2024**

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Sebuah skripsi yang diajukan untuk memenuhi sebagian syarat untuk memperoleh
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Universitas Pendidikan Indonesia
Agustus 2024

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PERNYATAAN KEASLIAN SKRIPSI DAN BEBAS PLAGIARISME

Dengan ini saya menyatakan bahwa skripsi dengan judul “Prediksi Harga Saham Berdasarkan Analisis Fundamental Menggunakan *Long Short-Term Memory* Dan *Linear Regression*” ini beserta seluruh isinya adalah benar-benar karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika ilmu yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung risiko/sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

Bandung, 11 Agustus 2024

Yang membuat pernyataan,



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Bandung, 11 Agustus 2024

Sanjaya Wisnu Ramadhan

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ABSTRAK

Investasi saham menjadi salah satu instrumen yang paling populer di kalangan masyarakat. Meskipun begitu, hadirnya berbagai faktor dan ketidakpastian membuat pasar saham sulit diprediksi. Salah satu cara dalam memprediksi harga saham adalah analisis fundamental. Analisis fundamental merupakan analisa yang dilakukan untuk mencari nilai wajar suatu saham. Data fundamental akan suatu perusahaan diambil berdasarkan kondisi saham seperti pada laporan finansial. Sehingga analisis fundamental berkaitan terhadap faktor rasional dan sebab-akibat terjadinya perubahan harga saham. *Long Short-Term Memory* (LSTM) dan *Linear Regression* merupakan model yang dapat membantu dalam melakukan prediksi harga saham. Penelitian ini mengevaluasi penerapan kedua model tersebut dalam memprediksi harga saham berdasarkan analisis fundamental. Faktor fundamental yang digunakan meliputi EPS, P/E, ROA, ROE, *Debt/Equity*, *Market Cap*, *Price/Sales Ratio*, *Price/Book Ratio*, *Book Value Ratio*, *Total Assets Turnover Ratio*, dan harga penutupan pada saham BBKA, TLKM, dan ASII. Hasil penelitian menunjukkan bahwa kedua model dapat diterapkan dengan baik dengan rasio pembagian dataset 80:10:10. Model LSTM menunjukkan nilai R² sebesar 0,987 untuk BBKA, 0,814 untuk TLKM, dan 0,78 untuk ASII. Sementara itu, model *Linear Regression* menunjukkan hasil yang lebih baik dengan R² masing-masing 0,994; 0,997; dan 0,994. Kesimpulan penelitian ini menunjukkan bahwa model *Linear Regression* lebih unggul dibandingkan LSTM dalam memprediksi harga saham berdasarkan analisis fundamental. Temuan ini memberikan kontribusi terhadap pengembangan strategi investasi yang lebih baik untuk mengurangi risiko dan meningkatkan keuntungan.

Kata Kunci: Investasi Saham, Analisis Fundamental, *Long Short-Term Memory* (LSTM), *Linear Regression*, Prediksi Harga

STOCK PRICE PREDICTION BASED ON FUNDAMENTAL ANALYSIS USING LONG SHORT-TERM MEMORY AND LINEAR REGRESSION

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ABSTRACT

Stock investment has become an important instrument among society. Even though, there is various factors and uncertainties makes the stock market difficult to predict. One way to predict stock prices is fundamental analysis. Fundamental analysis is an analysis carried out to find the fair value of a stock. The fundamental data about a company is taken based on stock condition such as financial reports. So fundamental analysis is related to rational factors and causes of changes in share prices. Long Short-Term Memory (LSTM) and Linear Regression are models that can help in predicting stock prices. The aim of this study is to evaluate both algorithm methods in predicting prices based on a fundamental analysis. Fundamental factors used include EPS (Earning per Share), P/E (Price to Earning), ROA (Return on Assets), ROE (Return on Equity), Debt/Equity, Market Cap, Price/Sales Ratio, Price/Book Ratio, Book Value Ratio, Total Assets Turnover Ratio, and closing prices on BBCA, TLKM and ASII share. Research results show that the two model can be well implemented with dataset split ratio of 80:10:10 Which gives the best results . LSTM model shows the R2 of 0,987 for BBCA, 0,814%for TKLM, and 0,78 for ASII. Then for the Linear Regression model shows a better R2 with 0,994, 0,997, and 0,994 for respective share. The conclusion of the results of this research shows that Linear Regression models are superior to LSTM in predicting share price based on fundamental analysis. these findings contribute to the development of better investment strategies to reduce risk and increase returns.

Keywords : Stock Investment, Analysis Fundamental, Long Short-Term Memory (LSTM), Linear Regression, Price Prediction

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