

ABSTRAK

Perbandingan Model LSTM dan *Transformer Attention Decoder* dalam Prediksi Harga *Cryptocurrency*

Oleh:

Muhammad Zidan Fauzi

1217050106

Penelitian ini merupakan pengembangan dari studi sebelumnya mengenai prediksi harga aset kripto, dengan fokus pada perbandingan dua model deep learning, yaitu *Long Short-Term Memory* (LSTM) dan *Transformer Attention Decoder*. Latar belakang penelitian didasari oleh tingginya volatilitas *cryptocurrency*, khususnya sektor memecoin, yang jarang menjadi fokus penelitian meskipun memiliki potensi pasar yang besar. Data harga memecoin diperoleh dari CoinMarketCap, diproses melalui tahap seleksi dan normalisasi, lalu dimodelkan menggunakan kerangka kerja CRISP-DM. Kedua model dievaluasi dengan *Mean Absolute Percentage Error* (MAPE) dan *Root Mean Square Error* (RMSE). Hasil penelitian menunjukkan bahwa kedua model mampu memprediksi harga dengan tingkat akurasi berbeda, dan model dengan error terendah lebih unggul. Temuan ini diharapkan dapat menjadi dasar pengembangan ***Decision Support System (DSS)*** yang membantu investor kripto dalam mengambil keputusan berbasis data pada aset dengan volatilitas tinggi.

Kata Kunci: *Deep Learning*, LSTM, *Transformer Attention Decoder*, Prediksi Harga, *Cryptocurrency*, Memecoin.

ABSTRACT

Comparison of LSTM and Transformer Attention Decoder Models in Cryptocurrency Price Prediction

By:

Muhammad Zidan Fauzi

1217050106

*This research is a continuation of previous studies on cryptocurrency price prediction, focusing on the comparison between two deep learning models, Long Short-Term Memory (LSTM) and Transformer Attention Decoder. The study is motivated by the high volatility of cryptocurrencies, particularly in the memecoin sector, which has rarely been the focus of research despite its significant market potential. Price data of memecoins were obtained from CoinMarketCap, processed through selection and normalization stages, and then modeled using the CRISP-DM framework. Both models were evaluated using Mean Absolute Percentage Error (MAPE) and Root Mean Square Error (RMSE). The results show that both models are capable of predicting prices with varying levels of accuracy, with the model producing the lower error performing better. These findings are expected to serve as the foundation for developing a **Decision Support System (DSS)** to assist crypto investors in making data-driven decisions on highly volatile assets.*

Keywords: *Deep Learning, LSTM, Transformer Attention Decoder, Price Prediction, Cryptocurrency, Memecoin.*

UNIVERSITAS ISLAM NEGERI
SUNAN GUNUNG DJATI
BANDUNG