

**Prediksi Harga *Cryptocurrency Ethereum* Menggunakan
Metode *Recurrent Neural Network (RNN)* (*Ethereum Cryptocurrency Price
Prediction Using Recurrent Neural Networks (RNN)*).
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ABSTRACT

The development of cryptocurrency investment has increasingly attracted public interest due to its high profit potential. However, cryptocurrency is characterized by high volatility and fluctuating price movements, which can increase the risk of losses for investors. One of the most popular cryptocurrencies is Ethereum, which offers advantages such as smart contract features and a decentralized system. Therefore, a prediction method is required to accurately model price movements. This study employs the Recurrent Neural Network (RNN) method with a Gated Recurrent Unit (GRU) architecture, which has the advantage of overcoming the vanishing gradient problem and is capable of capturing long-term dependencies in time series data. The research process includes data preprocessing using Min-Max normalization, sequence data formation using the sliding window method, splitting data into training and testing sets, and model training using several hyperparameter combinations to obtain optimal performance. Based on the experimental results, the optimal hyperparameter combination consists of 128 units, a dropout rate of 0.1, a batch size of 32, and 50 epochs. Model evaluation using Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE) produced values of 0.029717, 0.001729, and 0.041577, respectively, indicating that the model has a low prediction error. Therefore, the developed system is capable of predicting Ethereum cryptocurrency prices effectively and can be used as a reliable reference to support investment decision-making.

Key words: *Cryptocurrency, Ethereum, Gated Recurrent Unit, Time Series, Price Prediction*