

ABSTRACT

Indonesia is a country located on the equator. This location greatly impacts the climate in Indonesia, namely the tropical climate. Indonesia is very vulnerable to climate change or weather, one of which is rainfall. The impact of changes in rainfall intensity is very influential on the social activities of the Indonesian people, for example in the fields of transportation and traditional industries. Rainfall also affects the activities of the people of Semarang City, especially in the field of air and sea transportation. For example, when dozens of flights were delayed due to heavy rainfall at Ahmad Yani Airport in Semarang. An example of a case in sea transportation is when the Cahaya Harapan Hati Ship ran aground due to extreme weather at the Port of Tanjung Emas Semarang. Therefore, rainfall predictions in Semarang City are important to anticipate these impacts. Several previous studies on rainfall prediction in Indonesia have been conducted using deep learning long short term memory (LSTM) method, which has obtained excellent results in predicting rainfall. Therefore, researchers use the LSTM method to predict rainfall using rainfall data in Semarang City. This study used rainfall data in Semarang city as much as 3652 data taken from April 1, 2013 to April 1, 2023. Based on the test results, it can be concluded that LSTM can predict Semarang City rainfall data well. The best LSTM model is obtained with lookback parameters 1, last hidden state, number of hidden layer 3, and batch size value of 64. The testing process using the best model resulted in a MAPE value of 10.142.

Keywords : rainfall, prediction, long short term memory