ABSTRACT

Tuberculosis (TB) is an infectious disease caused by the bacteria Mycobacterium tuberculosis, although it can attack any organ in the body. When bacteria enter through droplets in the air. Tuberculosis infection can be fatal, but many cases can be prevented and treated. Tuberculosis cases in Indonesia are almost evenly distributed in all regions, one of which is in Karawang Regency. In 2015 there were 2,617 cases of tuberculosis in Karawang Regency. Two years later, the number of cases fell to 1,821 cases; unfortunately, in 2018, the number increased again to 2,075 cases. Lack of knowledge of the symptoms of the disease and socialization of early tuberculosis screening are the main factors causing the high number of cases of TB patients. Therefore, it is necessary to have a prediction system for the number of tuberculosis patients to predict the number of patients in the future.

This study uses the Long Short-Term Memory method. (LSTM). LSTM is an evolution of the Recurrent Neural Network (RNN) algorithm to overcome problems in the RNN in managing data for a long period. LSTM is considered superior to other algorithms in managing time series data. in this study using several test parameters, namely, data partition, epoch, hidden layer, neuron, and optimization. The author uses data from the Karawang District Health Office from January 1, 2020, to December 31, 2021.

Based on the test results, it is known that the LSTM algorithm with 70%:30% data partition, 900 epochs, the number of hidden layers is 1 LSTM layer with 64 neurons, and the Adam optimization type with a learning rate of 0.001. In addition, the results of the best parameter testing resulted in the value of RMSE = 0.12019341, MAE = 0.0819 and R2 = 0.53508423.

Keywords: Tuberculosis,   Prediction,   Long   Short-Term   Memory