ABSTRACT

Hazard reporting serves as a source of information for mining companies to improve and prevent potential hazards at PT ANTAM UBPE Pongkor. The potential dangers stem from unsafe environmental conditions or human actions. Each hazard report is manually classified into unsafe conditions and unsafe actions by the Safety Department staff. The Long-Short Term Memory method is one of the algorithms that can be used to facilitate the task of text classification, such as hazard reporting. Long-Short Term Memory (LSTM) is a type of artificial neural network that is a modification of Recurrent Neural Network (RNN), designed to work with sequential data like text by processing sequences of words into information for a specific class. A common issue in classification analysis in real cases is the class imbalance in the data. The differences in class within the data require handling such as resampling. The resampling methods that can be performed are Random Oversampling and Random Undersampling. This research aims to apply LSTM with a combination of hyperparameters such as batch size, epoch, dropout, learning rate, LSTM units, and handling data imbalance using Random Oversampling and Random Undersampling in the hazard reporting of PT ANTAM UBPE Pongkor. The research results show that LSTM with hyperparameters of batch size 64, 20 epochs, dropout 0.3, learning rate 0.001, and 128 LSTM units achieved an accuracy of 76.77%, a Gmean value of 66.71%, a specificity value of 83.24%, and a recall value of 53.46%.

Keywords: Unsafe Condition, Unsafe Action, Text Classification, Long-Short Term Memory, Random Oversampling, Random Undersampling