

Abstract

The use of the Javanese language is increasingly limited in everyday life, especially among the younger generation who prefer Indonesian and other foreign languages. To preserve the Javanese language, a Neural Machine Translation technology using a Recurrent Neural Network approach was developed. This study aims to improve the quality of translation between Indonesian and Javanese by comparing RNN-LSTM models with and without Attention mechanisms (Bahdanau and Luong) on two corpus sizes. The test results show that the model with Luong Attention achieved significant improvement after data augmentation using the back-translation technique. With optimal hyperparameter tuning, the model achieved a BLEU score of 70.17% and a METEOR score of 89.61% on the test data. This indicates that the Attention mechanism and data augmentation play a crucial role in improving accuracy, although the model still faces challenges with word repetition at the end of sentences. This study recommends refining the Attention mechanism and increasing dataset consistency to further enhance model performance.

Keywords: NMT, RNN, attention mechanism, BLEU score, METEOR, javanese language.
