Abstract

The advancing technologies are aimed to maximize human performance. One of the great developments in technology is social media. The social media used in this study is Twitter because commonly people in Indonesia give their opinions to the public through tweets. The opinions given are very diverse, where they write positive, negative, and neutral opinions. The purpose of this study is to analyze the sentiments of the opinions given by the public in Bahasa Indonesia. To conduct sentiment analysis, tweets are collected by crawling the data. Tweets are then labeled positive, negative, and neutral and then represented as 1, -1, and 0. The method used to classify tweet sentiment is the Convolutional Neural Network (CNN) and Gated Recurrent Unit method (GRU). Research stages including feature selection, feature expansion, preprocessing and balancing with SMOTE. The highest accuracy value obtained on the CNN-GRU model with an accuracy value of 97.77% value. Based on these tests, it can be concluded that sentiment analysis research on Twitter social media using the Convolutional Neural Network and Gated Recurrent Unit methods can produce fairly high accuracy, and feature expansion testing of the deep learning model can provide a significant increase in accuracy values.

Keywords: convolutional neural network; gated recurrent unit; sentiment analysis; feature expansion; twitter