Abstract

Tokopedia is one of the largest e-commerce platforms in Indonesia and has received many opinions from users who have used the application for buying and selling activities. However, these reviews are only available in text form without any filters based on certain aspects or sentiments, making it difficult for users to understand the quality of services, products, and prices in detail. Analysis of user reviews plays an important role in understanding customer perceptions of services and features provided on e-commerce platforms. One way to overcome this problem is to use aspect-based sentiment analysis (ABSA) techniques. Some previous studies have shown that CNN deep learning model is very good in performing aspect-based sentiment analysis. In addition to CNN, the BERT model as a contextual word embedding is also capable of producing more optimal output than conventional word embeddings. Therefore, this paper aims to classify aspect-based sentiment analysis from the Tokopedia e-commerce platform with BERT as contextual word embedding and CNN as a multi-task extraction for aspect and sentiment classification simultaneously. The dataset used amounted to 10,000 reviews and 3 aspects (Service, Quality and Price). Based on the test results obtained, the BERT-CNN method achieved an accuracy of up to 91%, which is higher than other models such as Word2Vec-CNN, XLNet-CNN, and RoBERTa-CNN, which achieved accuracies of 89%, 87%, and 90%, respectively. This result shows that using BERT as a word embedding is good for improving the accuracy of the model.

Keywords— Sentiment Analysis, Multi-Aspect, BERT, CNN, Tokopedia.