ABSTRACT

The increasing use of e-commerce in Indonesia, product reviews have become a key factor influencing consumer purchasing decisions. Shopee, as the largest e-commerce platform in Indonesia with over 2.3 billion visits in 2023, relies heavily on user reviews to build consumer trust. However, the phenomenon of fake reviews is becoming increasingly prevalent. Fake reviews, which can be generated either by paid individuals or Artificial Intelligence (AI), are used to boost a store's reputation or harm competitors. This negatively impacts consumers, stores, and even the entire e-commerce ecosystem. Therefore, a technology-based solution is required to automatically detect fake reviews. This study aims to develop a fake review classification model for the Shopee platform using the Bidirectional Long Short-Term Memory (Bi-LSTM) algorithm. The approach follows the CRISP-DM method, which includes six stages: (1) business understanding to define objectives and success criteria, (2) data understanding by exploring key attributes of user reviews, (3) data preparation through cleaning, tokenization, removal of irrelevant words, and text normalization, (4) modeling using the Bi-LSTM algorithm with optimal parameter settings, (5) model evaluation using metrics such as accuracy, precision, recall, f1 score, ROC, AUC and (6) deployment of the model to detect fake reviews on Shopee's data using Streamlit. The evaluation results show that the model achieved high performance with 96% accuracy, 98% precision, 96% recall, 97% F1-score, and 0.97 AUC.

Keywords: *Bi-LSTM, CRISP-DM, E-commerce, Fake review detection, Shopee*