

Abstract—TikTok is currently one of the most popular social media apps. The site contains content that is creative, educational, innovative, as well as content that features lifestyle, cyberbullying, and inappropriate behavior. These diverse contents can trigger both positive and negative sentiments. This research aims to analyze the sentiment of the TikTok application by integrating feature extraction techniques, feature expansion, and optimization algorithms to improve the performance of the Long Short-Term Memory (LSTM) model. This research uses a dataset of 15,049 TikTok app reviews from the Google Play Store. Sentiment analysis is performed through four scenarios: the first scenario uses the LSTM model as the basis for classification, the second scenario combines LSTM with Word2Vec as feature extraction to convert initially unstructured text data into a structured format, the third scenario integrates LSTM and Word2Vec with FastText as feature expansion to improve the quality of representation and the model's ability to understand complex contexts, and the fourth scenario adds the Stochastic Gradient Descent (SGD) optimization algorithm to help improve the performance of the LSTM model. The results obtained showed that through the integration of feature extraction techniques, feature expansion, and optimization algorithms, the performance of LSTM increased by 7.44%. This research successfully developed an effective method that proved positive outcomes and will contribute to the development of a sentiment analysis system designed to help policymakers and application developers solve negative issues.

Keywords: Sentiment analysis; TikTok; LSTM; SGD; Scenario.