

Analisis Sentimen pada Media Sosial Menggunakan Word2Vec dan Gated Recurrent Unit (GRU) dengan Optimasi Genetic Algorithm

Syafa Fahreza¹, Erwin Budi Setiawan²

^{1,2}Fakultas Informatika, Universitas Telkom, Bandung

¹syafafahreza@students.telkomuniversity.ac.id, ²erwinbudisetiawan@telkomuniversity.ac.id

Abstract

The evolution of information technology has changed the function of social media from a mere information repository to a platform for expressing opinions and aspirations. One of the most used social media is Twitter. Twitter users can express opinions according to their conscience. Therefore, a sentiment analysis process is needed to classify the opinion as positive or negative. Sentiment analysis on social media is important to understand user opinions, monitor public perception, measure campaign performance, identify trends and opportunities, and improve customer service. This research builds a model to perform sentiment analysis on the topic the president election with a total dataset of 39,791 with GRU method, TF-IDF feature extraction, Word2Vec feature expansion with 142,545 corpus from IndoNews, and Genetic Algorithm optimization. The test results show that the highest accuracy achieved is 83.39%, which shows an improvement of 1.42% compared to the baseline. This performance was achieved when combining of TF-IDF with a 5,000 maximum features, applying Word2Vec at top 1 similarity, and applying Genetic Algorithm for feature optimization. This study proves the relationship between the use of Word2Vec feature expansion and Genetic Algorithms as optimization in improving the accuracy of the model created.

Keywords: Genetic Algorithm, GRU, Sentiment Analysis, TF-IDF, Word2Vec

