

Sentiment Analysis of Telkom University using the Long Short-Term Memory and Word2Vec Feature Expansion

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ABSTRACT

One of Indonesia's top private universities is Telkom University, and branding is an important aspect of maintaining its reputation. In the digital era, social media has become the main platform for people to express their opinions on various topics, including educational institutions. This research aims to analyze public sentiment towards Telkom University on platform X (formerly Twitter) by using the Long Short-Term Memory (LSTM) method and Word2Vec Feature expansion. The data used consists of 6,627 tweets collected between November 2022 and November 2023. Sentiments were categorized into "Positive," "Negative," and "Neutral". The research stages include data collection, preprocessing, feature extraction using TF-IDF, and feature expansion with Word2Vec. The research results evaluated by calculating accuracy, F1-Score, Precision, and Recall with the help of a confusion matrix. There is a very severe data imbalance in Negative sentiment compared to other sentiments. By doing SMOTE oversampling, feature extraction, and also feature expansion combined with LSTM, the best results are obtained with 91% accuracy, 91% F-1 Score, 91% Precision, and 91% Recall. These results can help Telkom University understand public perception and manage its brand image more effectively.

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