Perbandingan CNN dan LSTM pada Analisis Sentimen Ulasan Film

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Abstract
Before watching a movie, people usually read reviews written by movie critics or regular audiences to gain insights about the movie's quality and discover recommended films. However, analyzing movie reviews can be challenging due to several reasons. Firstly, popular movies can receive hundreds of reviews, each comprising several paragraphs, making it time-consuming and effort-intensive to read them all. Secondly, different reviews may express varying opinions about the movie, making it difficult to draw definitive conclusions. To address these challenges, sentiment analysis using CNN and LSTM models, known for their effectiveness in classifying text in various datasets, was performed on the movie reviews. Additionally, techniques such as TF-IDF, Word2Vec, and data balancing with SMOTEN were applied to enhance the analysis. The CNN achieved an impressive sentiment analysis accuracy of 98.56%, while the LSTM achieved a close 98.53%. Moreover, both classifiers performed well in terms of the F1-score, with CNN obtaining 77.87% and LSTM achieving 78.92%. These results demonstrate the effectiveness of the sentiment analysis approach in extracting valuable insights from movie reviews and helping people make informed decisions about which movies to watch.

Keywords: CNN, LSTM, movie review, sentiment analysis, SMOTEN