Abstract—*Over time, social media has always changed quickly. People can voice their ideas on various topics and communicate with each other through social media. One social media platform that allows users to express their ideas through tweets is Twitter. Sentiment is the route via which each person can express their ideas on a variety of subjects. The sentiment can be positive or negative. Sentiment analysis can be used to determine how Twitter users feel about particular subjects. Sentiment analysis on popular subjects in 2023, specifically the 2024 presidential contenders, will be done in this research. The dataset used in this research consists of 37,391 entries with 5 keywords. The research aims to understand how Twitter users respond and express their sentiments towards the presidential candidate through the use of deep learning classification techniques with Convolutional Neural Network (CNN), feature extraction using Term Frequency-Inverse Document Frequency (TF-IDF) method, and feature expansion with Word2Vec. Furthermore, this study employs Particle Swarm Optimization as an optimization technique to enhance the sentiment analysis model's performance. The test's results demonstrate a high degree of accuracy, offering a comprehensive picture of Twitter users' sentiments and perspectives toward the 2024 presidential contenders. This research helps to understand the dynamics of public opinion in the political context. Based on the evaluation results of the research, it yielded an accuracy of 78.2%, showcasing an improvement of 10.07% compared to the baseline.*

Keywords: *CNN, Particle Swarm Optimization, sentiment, TF-IDF, Word2vec.*

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