

Abstract - Stock investing has become popular among the public. Although this stock investment has significant risks, every year, investors keep increasing because the return from stocks is also quite promising. Social media also supports this stock investing, which can give information extensively and very quickly, so it can affect the stock price. The Efficient Market Hypothesis (EMH) theory defines that market information reflects stock prices. In this research, sentiment analysis uses a dataset crawled from Twitter to process the sentiment into helpful information. All the tweets related to stock prices are collected for sentiment analysis according to the appropriate sentiment type, whether it's a positive or negative sentiment. Many believe that sentiment influences stock price movements. This sentiment analysis process uses a hybrid method named Convolutional Neural Network (CNN) and Bidirectional Long Short-Term Memory (Bi-LSTM) with feature expansion Word2Vec. Afterwards, the hybrid method analysis will establish the final accuracy obtained. This research uses 27.930 data and shows the hybrid CNN Bi-LSTM method result is 95.74%.

Keywords: convolutional neural network, sentiment analysis, bidirectional long short-term memory, Twitter, stock