Abstract

Online media, such as websites and applications, have become a communication tool available on the internet. Social media is a part of online media that can be used to spread news, opinions, or even hoaxes, such as through Twitter. Although hoaxes are difficult to eliminate, several systems have been built using deep learning approaches that can process text and images to detect the truthfulness of news. In this study, four systems were built using four deep learning methods, namely Bi-directional Long Short-Term Memory (Bi-LSTM), Recurrent Neural Network (RNN), hybrid RNN-Bi-LSTM, and hybrid Bi-LSTM-RNN. Feature extraction was performed using Term Frequency - Inverse Document Frequency (TF-IDF) and feature expansion was performed using Global Vectors (GloVe). The data used has been adjusted according to the keyword of fake news on mainstream news portals. This study attempted several scenarios to compare the various methods that have been built, with the aim of finding the best method that provides the highest accuracy. The results showed that the Bi-LSTM method had the highest accuracy of 96.48%, while the hybrid Bi-LSTM-RNN method ranked second with an accuracy of 96.36%, followed by the RNN method with an accuracy of 95.49%, and the hybrid RNN-Bi-LSTM method with an accuracy of 95.34%.

Keywords: hoax, twitter, Bi-LSTM, RNN, hybrid