Hoax Detection on Twitter using Feed-forward and Back-propagation Neural Networks Method

Abstract

Social media is one of the ways to connect every individual in the world. It also used by irresponsible people to spread a hoax. Hoax is false news that is made as if it is true. It may cause anxiety and panic in society. It can affect the social and political conditions. This era, the most popular social media is Twitter. It is a place for sharing information and users around the world can share and receive news in short messages or called tweet. Hoax detection gained significant interest in the last decade. Existing hoax detection methods are based on either news-content or social-context using user-based features. In this study, we present a hoax detection based on FF & BP neural networks. In the developing of it, we used two vectorization methods, TF-IDF and Word2Vec. Our model is designed to automatically learn features for hoax news classification through several hidden layers built into the neural network. The neural network is actually using the ability of the human brain that is able to provide stimulation, process, and output. It works by the neuron to process every information that enters, then is processed through a network connection, and will continue learning to produce abilities to do classification. Our proposed model would be helpful to provide a better solution for hoax detection. Data collection obtained through crawling used Twitter API and retrieve data according to the keywords and hashtags. The neural networks highest accuracy obtained using TF-IDF by 78.76%. We also found that data quality affects the performance.

Keywords: hoax, Twitter, feed-forward, back-propagation, TF-IDF, Word2Vec.