Master Thesis Title:

Twitter Sentiment Analysis Using Deep Learning Techniques In SemEval-2017 Task 4 Dataset

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Today, the vast amount of information available on the Internet is such that people can easily be informed of others' thoughts and ideas and use them in their decisions. Knowing how people feel about a person or event can significantly impact individuals' and organizations' decisions. With the spread of social networks and their high popularity, most people share their opinions on these networks. Analyzing these social networks' feelings, which is a perfect example of society, can help make organizational decisions and forecast important events. Therefore, processing large volumes of information is a challenge that has been considered by many researchers. This study aims to present a new approach to the analysis of emotions and detect the polarity of the opinions of Twitter social network users using deep learning algorithms. The use of deep learning networks on textual data requires pre-processing and text conversion into vector space, so textual data will be transformed into vector space using the word embedding structure. In this study, we analyze the Twitter social network due to its data availability and its great application in emotion classification and use the SemEval-2017 Task 4 data set. We then propose a hybrid model of the LSTM, CNN, and GRU networks, using CNN to extract the text attribute and the LSTM and GRU networks to classify emotions. Then we evaluate the performance of the proposed model using multiple metrics. The results show that our proposed method is about 8% better than previous related works.