

Fake News Detection Using NLP

Abstract:

The spreading of fake news has given rise to many problems in society. It is due to its ability to cause a lot of social and national damage with destructive impacts. Sometimes it gets very difficult to know if the news is genuine or fake. Therefore it is very important to detect if the news is fake or not. "Fake News" is a term used to represent fabricated news or propaganda comprising misinformation communicated through traditional media channels like print, and television as well as non-traditional media channels like social media. Techniques of NLP and Machine learning can be used to create models which can help to detect fake news. In this paper we have presented six LSTM models using the techniques of NLP and ML. The datasets in comma-separated values format, pertaining to political domain were

used in the project. The different attributes like the title and text of the news headline/article were used to perform the fake news detection. The results showed that the proposed solution performs well in terms of providing an output with good accuracy, precision and recall. The performance analysis made between all the models showed that the models which have used Glove and Word2vec method work better than the models using TF-IDF. Further, a larger dataset for better output and also other factors such as the author, publisher of the news can be used to determine the credibility of the news. Also, further research can also be done on images, videos, images containing text which can help in improving the models in future.

Keywords:

Fake news detection, LSTM (long short term memory), Word2Vec, TF-IDF, Natural Language Processing.

I. INTRODUCTION

The fake news has been rapidly increasing in numbers. It is not a new problem but recently it has been on a great rise. According to Wikipedia Fake news is false or misleading information presented as news.[1] Detecting the fake news has been a challenging and a complex task. It is observed that humans have a tendency to believe the misleading information which makes the spreading of fake news even easier. According to reports it is found that human ability to detect deception without special assistance is only 54% [2]. Fake news is dangerous as it can deceive people easily and create a state of confusion among a community. This can further affect the society badly. The spread of fake news creates rumors circulating around and the victims could be badly impacted. Recent reports showed that due to the rise of fake news that was being created online it had impacted the US Presidential Elections. Fake news might be created by people or groups who are acting in their own interests or those of third parties. The creation of misinformation is usually motivated by personal, political, or economic

agendas.[3] Since a lot of time is spent by users on social media and people prefer online means of information it has become difficult to know about the authenticity of the news. People acquire most of the information by these means as it is free and can be accessed from anywhere irrespective of place and time. Since this data can be put out by anyone there is lack of accountability in it which makes it less trustable unlike the traditional methods of gaining information like newspaper or some trusted source. In this paper, we deal with such fake news detection issue. We have used the techniques of NLP and ML to build the model. We have also compared text vectorization methods and obtained the one which gives a better output