Sentimental LIAR: Extended Corpus and Deep Learning Models for Fake Claim Classification

Summary

Introduction - The title of the paper on which I am going to present my review is
We all are somewhat familiar with the rapid integration of social media in our everyday culture and in our daily lives. This has made our lives easy to get all the information and news in just the blink of an eye yet it has also made our lives much harder to detect false information. Also, the flow and easier access to information and to the internet have made it easier to spread information or news. So the authors of the paper that I have chosen to make a report this paper aims to propose a novel deep learning approach for automated detection of false short-text claims on social media.

Motivation & Purpose - Fake news classification is the process of determining whether the news contains false news and misinformation or not Traditionally this classification is done by the editors and experts however the high volume and velocity of information flow on such platforms render such manual approaches very difficult. This is what the authors of this paper are trying to overcome by using the Deep learning approach of NLP to automate this process

Dataset- A very large range of works and research has been done by many authors on sentiment analysis and fake news detection but detecting fake claim detection in the short text has not come into very bright light yet a number of significant open source datasets has been found and the authors of this paper have chosen to use LIAR dataset which has short text claims as well as the required meta-data with it.

Methodology - Talking about the methodology fake claims are written with an intention of convincing the audiences to read and trust the claims, for which fake claims are written with different styles and different sentiments and emotions. To develop a feasible model for fake claim detection, the authors of this paper have proposed deep neural network architectures based on BERTBase to analyze short-text claims. Then they split the data into 2 parts, as 80% of the data were selected for training purposes and 20% for testing. The proposed models learn to detect different attributes based on language features.In this paper the the proposed model uses all the meta-data that come within the dataset also the authors have integrated CNN with the BERT-base model which surprisingly gives a better result.

Conclusion- To conclude I must say the authors have done a very good job by highlighting the issue and by trying to resolve this with new techniques but it can be said that in BERT-base models for NLP-related tasks by including CNN model the results are a bit improved . Then again the result could have been improved if the dataset were much rich to train. However, the authors have paved a new way to use this in the near future for different datasets.

Limitations

The very first limitation that I have found so far is the accuracy as we have seen in the paper the best F1 score was found only 0.64. This could have been improved depending on the dataset the authors have chosen

The second limitation that I have found is that the authors could have added more sources to collect the dataset using which they could have enriched their dataset to train the model more perfectly. but again since this research is done over short text documents and the dataset was

not quite enough compared to the other NLP-related or text classification it can be said that this work can be improved by using better datasets and models.

Synthesis

As I have mentioned earlier the authors have paved a new way to start our own research on this issue of detecting fake claims in short-texts. As computer science students we can use the techniques by using datasets that are for other languages also. Therefore, by using this technique that are proposed by the authors of this paper, we can work for the betterment of our society and our daily lives as social media and the internet are directly connected to our daily lives, and ensuring to share correct information and news is our very own duty.