Fake News Detection in Social Media by machine learning method Literature Review

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Abstract:

With the development of social media application and network technology, more and more the time people consume in social media are increasing dramatically. And some of them are spreading fake messages on purpose or without conscious. In this period, the amount of fake news is overwhelming, provocative, which easily mislead the crowd. Detecting that news has been an essential task for artificial intelligence experts and computer scientists. In addition, we also need speed up our pace in order to fight against the fake news generated by AI.

Keywords: Natural Language Process, Text classification, Neural network, deep learning

Introduction:

The original of this work. The development of this work and its tendency change point. It has been a newly- developed research area since 2016. The first period, people usually use CNN and LSTM to detect the fake news. After Bert model was published, it has brought revolutionary change in Natural Language Process area. At second period, people use Bert mix into model to improve the performance. Graph neural network has huge potential in this area. In the future, the GPT model will give new direction for this research area. Datasets used for training and evaluation we will select both Chinese and English. We collect the data of 2019 Fake news detection competition and Chinese social media like Weibo as our dataset. And English dataset in social media are focused on Twitter and Fake News Specific dataset.

The Deep Learning techniques:

Supervised learning approach:

Some scholars have tested the result by using decision tree and use diagram to visualize it.

Unsupervised learning method:

This part is mainly support vector machine.

In this part, particularly Convolutional Neural Network(CNN) and Recurrent Neural Network(RNN) and its evolution version LSTM have shown outstanding performance in detecting tasks. And late models have been published used to solve the problem (Wang, 2016). Many models are build based on these (Karimi, Roy, Saba-Sadiya, Tang 2018). They usually use Word2Vec2 as coding algorithm (Mikolov,2013). Research have explored techniques like BERT (bidirectional Encoder Representation from Transformers) and BERT-Attention mechanisms to leverage BERT’s contextualized representations for improved fake news classification.

Graph-based approach

Song has published a kind model called a Temporally Evolving Graph Neural Network for Fake News Detection(TGNF). It mainly focused on continuous time dynamic graphs (TDN) because of the feature of news. His works are inherited some advantages of improved temporal graph networks for deep learning, which show the importance of the graph-based embedding module to generate up-to-date node embedding. In the graph, node represent a user or news receiver, and edges represent the road message transmit. The graph-based model can clearly show how the news spread, modify etc. Therefore, it has so many results with importance reference value.

Future Work Direction:

Conclusion:

Reference:

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