



FAKE NEWS DETECTION USING ARTIFICIAL NEURAL NETWORKS

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Abstract : The detection of false information is an important issue in the field of Machine Learning and deep learning. In the past few years, and the reliance upon any information from the Internet, it is now widespread. The benefits of effective interventions in this area have been diverse, as a result of the goodwill of the community. On a superficial level, this is, in general, coincides with the general problem of text classification. Researchers have proposed several approaches for the control of false information, and with the help of a simple and a number of additional methods. In this article, with the help of Natural Language Processing (NLP), Artificial Neural Networks, social networking, Sentimental analysis, we have to classify whether News is fake or real.

IndexTerms - Artificial Neural Networks, Sentimental analysis, Natural language Processing.

I. INTRODUCTION

It is a challenging task to detect whether the news is fake or real. It's very easy to extend news on social media in contrast with traditional journalism. Social media is immediate, versatile i.e. once published in social media we can make changes but in traditional journalism, we can't change once it is published. Social media takes quick actions whereas traditional media due to press printings it can be delayed. Due to low cost, easy access, fast, inexpensive easy to propagate we can share our new ideas, thoughts with our friends, colleagues. Not only advantages but also some disadvantages through social media i.e. by using social media large volume of misleading information reaches maximum users either may be reputation to company, or damaging entities In this we use sentimental analysis the word sentimental analysis is nothing but opinion mining. It is a tool in Natural Processing Language used to detect whether the data is fake or real. Natural Language Processing helps computers to interact with humans and make it possible for computers to read text, hear speech, etc.

For this project, we have collected a dataset from the Kaggle website. The data set consists of 10240 records of all the 0s and 1s, including a variety of message types. Based on these messages, we can find out what type of post they belong to. Since there has been a lot of news in the world, we have a solution in that, the type of the message, with no time to waste. Based on this guidance, which will enable users to easily be able to determine which messages are false and which are true.

II. PROBLEM STATEMENT

In the talk of not being able to find false news, the world would no longer hold value in the truth. These people who produce incorrect information benefit by earning money through the amount of contact in their books. Dissemination of illegal information serves a variety of purposes, in particular, in the favor of political, business, and product choices, whether intentional or retaliatory. People can easily be deceived, and false stories can be difficult to distinguish from ordinary stories. Most are easily influenced especially by sharing with friends and family because of relationships and trust. We tend to base our feelings on the news, making it difficult for us to accept and justifies our beliefs. Therefore, we are satisfied with what we want to hear and fall into these traps.

III. REVIEW OF LITERATURE

In this case, we are dealing with a data set consisting of various types of messages, that are not fake and real news. Because the database is linked to the amount of information in the rows, and this is what has been stored in the database. The message type can be predicted with the help of a new set of data.

[1] According to the popular definition, it is solid-state, fake news, namely, the disturbing elements, which are specifically designed to mislead the reader. Social networks and news agencies publish fake news to increase their audience. The exhibition will be dedicated to the growth and development of false information in the context of the communication campaign that has been made possible through the use of social media. The purpose of this paper is to develop solutions that can be used by users to identify and filter out web pages that contain inaccurate and misleading information. It is not recommended to use, very simple, and very carefully selected, names, and positions for them, or for the purpose of identifying the source of the false reports. The experimental results show an accuracy of 99.4%, in the case of logistic regression.

[2] Machine learning plays an important role in the arrangement of information, albeit with a few restrictions. This article describes some of the different machine learning methods for the detection of false and end-of-the-box posts. The limitations of these methods and improvisation, through deep learning, are also discussed.

[3] Mykhailo Granik in their article is shown that a simple approach for the detection of fraudulent messages, using a naive Bayes classifier. This approach has been implemented as a software newsletter, and test data sets, other than a Facebook post. The data were collected from three Facebook pages, with each of the one on the left and the right, as well as the three main political news pages, such as Politics, CNN, ABC News). They have to be the exact layout, with about 74%.

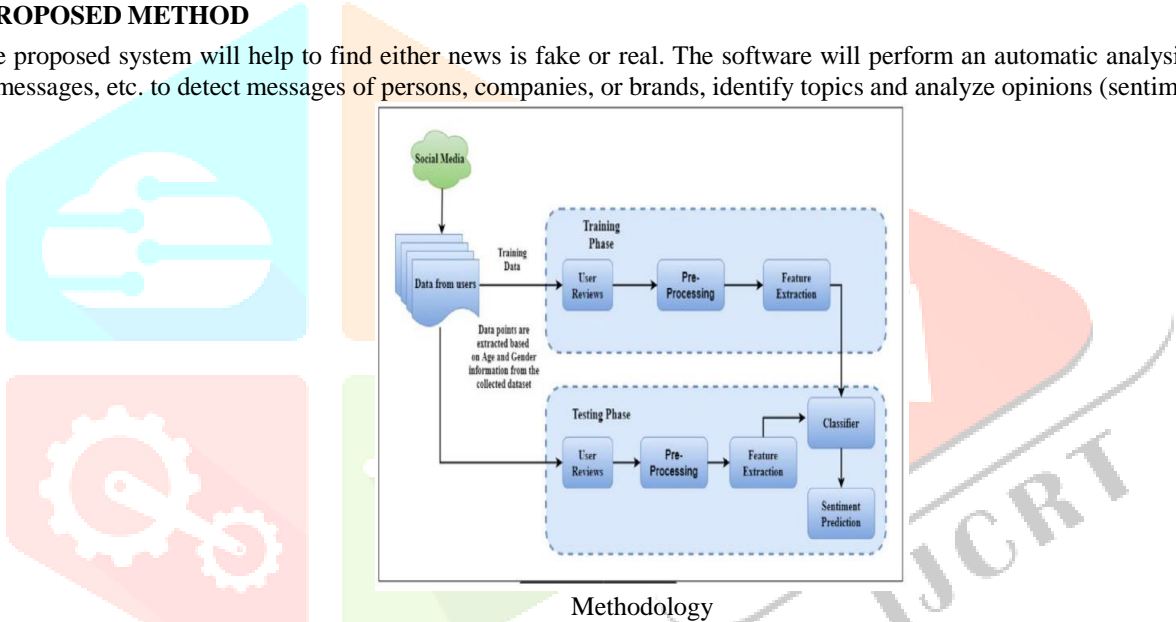
[4] Himank Gupta provided a framework based on a new machine learning process that Addresses a variety of problems, such as lack of accuracy, latency time (BotMaker), and high processing time, and thousands of tweets in less than one second. First, 400,000 tweets were collected from HSpam14 data. And, in addition, the division of more than 150,000 spam messages, and more than 250,000 spam posts. They got an accuracy of 64%.

[5] In this article, the algorithm extracts text elements (content and publisher features). It will then perform language and visual lessons on the published elements (source, title, body text, image, video). Linguistic research includes the study of artistic and practical aspects; lexical features such as various writing programs and interesting news articles; syntactic features such as sentence features and word frequencies. The extracted data will be used to create a machine learning model to distinguish text as fake or real.

Marco L. Della et al. [6] for the first time, proposed a new method for the detection of counterfeit ML of messages, that is, the combination of the content and features of the social context, and outer forms the existing methods in the literature, to increase the accuracy of up to 78.8%. Second, we introduced our way in the Facebook Messenger Chatbot and tested with the help of a real application, you get an 81.7% accuracy in the detection of fraudulent messages. They aimed to classify messages as either true or false; they are used to describe the data sets that were used for the test and was then in the content-based approach, which is being carried out and the methods that have been proposed to be associated with social approaches available in the literature.

IV. PROPOSED METHOD

The proposed system will help to find either news is fake or real. The software will perform an automatic analysis of different posts, messages, etc. to detect messages of persons, companies, or brands, identify topics and analyze opinions (sentiment).

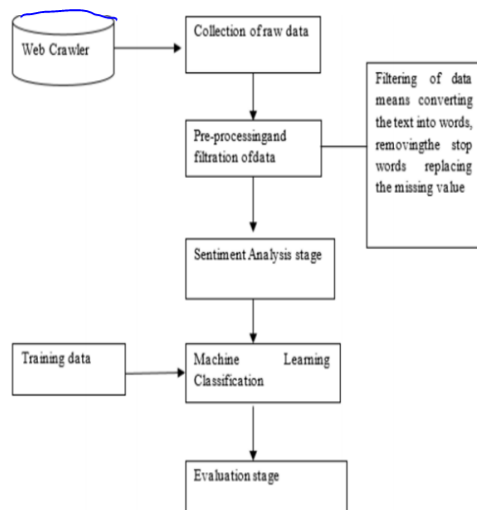


Sentiment analysis has many other names also, including-

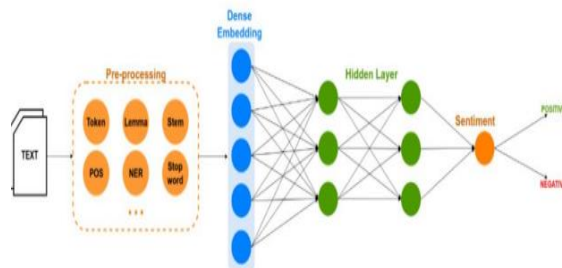
- Opinion mining.
- Workflow.

It aims to classify an opinion document as expressing a fake or real opinion. It considers the whole document a basic information unit under a particular domain.

Workflow process: The study was conducted and processed in Python 3.6 and with the Scikit-Learn library to implement the Sentiment Analysis program.



V. IMPLEMENTATION



ANN Algorithm.

Building a machine learning model includes the following steps-

1. Gathering data
2. Text Preprocessing
3. Feature Extraction
4. Model Training
5. Prediction
6. Deployment to Prediction

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In [4]: df
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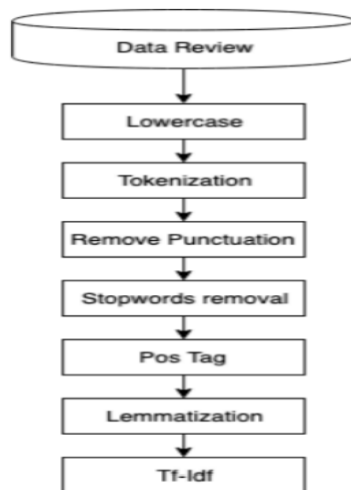
0	Says the Annies List political group supports ...	0
1	When did the decline of coal start? It started...	1
2	Hillary Clinton agrees with John McCain "by vo...	1
3	Health care reform legislation is likely to ma...	0
4	The economic turnaround started at the end of ...	1
...
10235	There are a larger number of shark attacks in ...	1
10236	Democrats have now become the party of the [At...	1
10237	Says an alternative to Social Security that op...	1
10238	On lifting the U.S. Cuban embargo and allowing...	0
10239	The Department of Veterans Affairs has a manua...	0

10240 rows x 2 columns

Dataset

Text preprocessing includes the following steps

- Remove Punctuations, Numbers
- Convert each word into its lower case
- Stemming
- Bag of words.
- Splitting Data into Training and Test set



Flow chart of Sentimental analysis

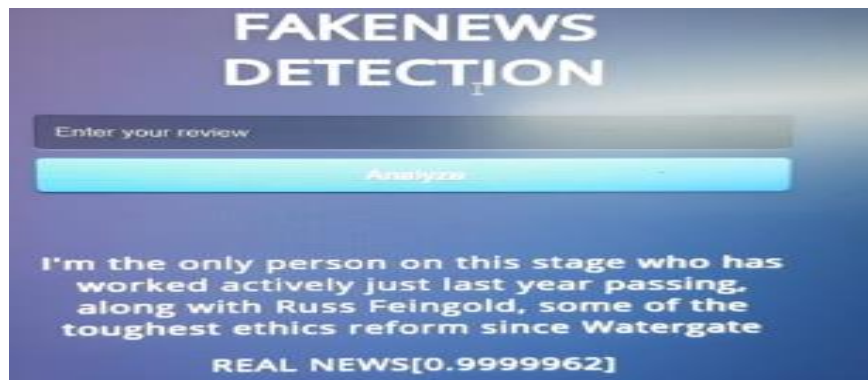
“Re” is the library that is used to replace the selected special characters with the desired parameter.

“NLTK” – Natural language Tool Kit is the library used for stemming using a special class in the library.

V.RESULTS AND DISCUSSION

From split data 80% of training data, we made a machine model to predict. The machine learning model predicts the other 20 % of data as data testing to see how our model work. The results of this machine learning model is having 99% accuracy.

Output1



Detecting Real News

Output2



Detecting Fake News

VI.CONCLUSIONS

Machine learning is a technology that allows you to create intelligent models, which are much more convenient than the traditional physical models. Our results show that these machine learning models can predict weather patterns that are accurate enough to compete with the traditional ones.

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