INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 7.542

Fake News Detection using Machine Learning

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ABSTRACT: A double-edged sword is social media for news consumption. On the one hand, its low cost, convenient access, and rapid information sharing lead people to search for and consume social media content. On the other hand, it allows "fake news" to spread widely, i.e. low-quality news with purposely misleading facts. The wide spread distribution of fake news has the potential to have highly negative effects on people and culture. Fake news identification on social media, therefore, has recently become an evolving study that attracts immense interest. Fake social media identification of newsposes specific features and obstacles that make conventional news media detection algorithms ineffective.

KEYWORDS*: fake news, pre-processing, classifier algorithm, feature extraction, NLP, machine learning algorithm etc.

I. INTRODUCTION

As more and more of our lives are spent communicating online across social networking channels, more and more individuals prefer to search for and absorb social media news instead of conventional news organisations. The essence of these social media sites is implicit in the reasons for this shift in consumption behaviour. The widespread distribution of false news can have a significant adverse effect on people and society. Second, fake news will break the news ecosystem's balance of credibility. For instance, it is obvious that during the U.S. presidential election of 2016, the most popular fake news was much more frequently circulated on Facebook than the most popular authentic mainstream news.

II. RELATED WORK

[1]"A Framework to Identify and secure the Issues of Fake News and Rumours in Social Networking"Author: Nitin Pandey, Sunil Kumar KhatrIn today's generation social media is one of the major platforms for communication. This platform has both pros and cons. It's really low cost, easy to use and help in spreading information rapidly. This enables people to consume and spread news whether it is genuine news or fake news. Nowadays many people use social media to spread rumors, low quality news with intentionally fake or wrong information.

[2] Use of Fake News and Social Media by Main Stream News Channels of IndiaAuthor: Mohammed HazimAlkawaz, Sayeed Ahsan KhanThis paper discusses the use of fake news and social media by mainstream news channels of India and how they're using social media and fake news to fuel nationalism and create division between communities to avoid important issues of the country like employment, health care, education, infrastructure, crime against women and children, economy etc. This pilot study highlights the type of topics mainstream news channels discuss on their prime-time shows and shares on social media to create division, distraction and animosity between the citizens to keep citizens away from the real issues of the country.

[3] Exploiting Multi-domain Visual Information for Fake News DetectionAuthor: Peng Qi1,2 , Juan Cao1,2 , Tianyun Yang1,2 , Junbo Guo1 and Jintao Li1The increasing popularity of social media promotes the proliferation of fake news. With the development of multimedia technology, fake news attempts to utilize multimedia content with images or videos to attract and mislead readers for rapid dissemination, which makes visual content an important part of fake

news. Fake-news images, images attached to fake news posts, include not only fake images that are maliciously tampered but also real images that are wrongly used to represent irrelevant events

[4]Fake News Detection with Generated Comments for News ArticlesAuthor: Yuta Yanagi, RyoheiOrihara, Yuichi SeiIn this era, social media is one of the important parts of our lives. Social media makes it easier to get news and share them with friends online. However, there is

also information with less credibility. Some of them have misinformation that is made by malicious purposes. We call them "fake news".

III.   MATHEMATICAL MODELING
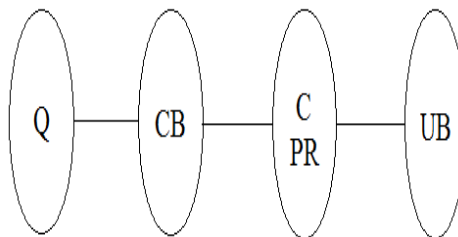
Where,

Q = User entered input
CB = preprocess
C = feature selection
PR = preprocess request evaluation
UB = predict outcome

SetTheory

1) Let S be as system which input image

S = {In, P, Op, Φ}

2) Identify Input In as

In = {Q}

Where,

Q = User entered input image(dataset)

3) Identify Process P as

P = {CB, C, PR}

Where,

CB = Pre-process
C = feature selection
PR = Pre-process request evaluation

4) Identify Output Op as

Op = {UB}

Where,

UB = Predict outcome
Φ=Failures and Success conditions.

Failures**:**

1. Huge database can lead to more time consumption to get the information.
2. Hardware failure.
3. Software failure.

Success**:**

1. Search the required information from available in Datasets.
2. User gets result very fast according to their needs.

SpaceComplexity**:**

The space complexity depends on Presentation and visualization of discovered patterns. More the storage of data more is the space complexity.

TimeComplexity**:**

Check No. of patterns available in the datasets= n

If (n>1) then retrieving of information can be time consuming. So the time complexity of this algorithm is $O(n^n)$.

Above mathematical model is NP-Complete.

IV.   EXISTING SYSTEM

In existing system there is no computerizes system to identified the fake news detection. The max operator has at least two disadvantages. Firstly, it is only suitable for the instance-level approaches that require an instance classifier, As we mentioned before, existing popular approaches of logistic regression with to transform them into embedding space.

V.   ADVANCED SYSTEM AND ADVANTAGES

Advantages:

1) Confirming those infected is essential to manage and contain the fake news successfully. Without reliable testing, it would be hard to determine the actual rates of cases. Thus, it is vital to identify what these available tests can and can't do to use them appropriately.
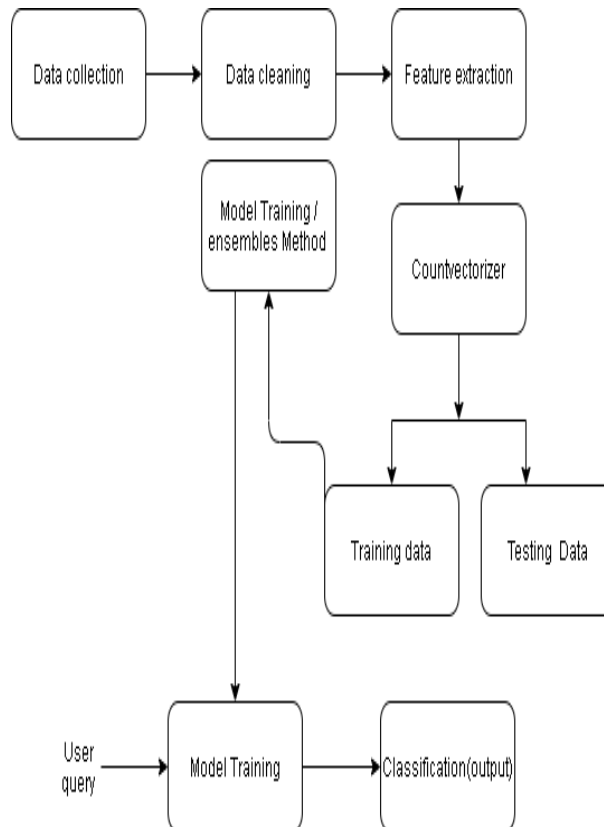2) Secure and efficient system.

Advanced System:

Figure1: Advance System Architecture

VI.   CONCLUSION AND FUTURE WORK

With social media becoming more popular, more and more people are receiving news from social media rather than traditional news media. Social media, however, has also been used to disseminate fake news, which has strong negative effects on individual users and culture as a whole. In this paper, by reviewing existing literature in two phases, we discussed the false news problem: characterization and detection. In the characterization phase, we introduced the basic concepts and principles of fake news in both traditional media and social media.

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