

Political Fake News Detection from Different News Source on Social Media using Machine Learning Techniques

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Abstract— People are more dependable on online news systems than ever in this modern time and day. The more people depend on online news, magazines, and journals, the more likely it will have more significant consequences of fake news or rumors. In the era of social networking, it has become a significant problem that negatively influences society. The fact is that the internet has become more accessible than ever, and its uses have increased exponentially. From 2005 to 2020, overall web users have increased from 1.1 billion to 3.96 billion [16]. As most individuals' primary sources are microblogging networks, fake news spreads faster than ever. Thus it has become very complicated to detect fake news over the internet. For that purpose, we have used four traditional machine learning (ML) algorithms and long short-term memory (LSTM) methods. The four traditional methods are as follows logistic regression (LR), decision tree (DT) classification, k-nearest neighbors (KNN) classification, and naive bayes (NB) classification. To conduct this experiment, we first implemented four traditional machine learning methods. Then we trained our dataset with LSTM and Bi-LSTM (bidirectional long-short term memory) to get the best-optimized result. This paper experimented with four traditional methods and two deep learning models to find the best models for detecting fake news. In our research, we can see that, from four traditional methods, logistic regression performs best and generate 96% accuracy, and the Bi-LSTM model can generate 99% accuracy, which outbreaks all previous scores.

Keywords—Fake News, Political Violence, Long Short-Term Memory, Bidirectional Long-Short Term Memory, Logistic Regression, Decision Tree, K-Nearest Neighbors, Naive Bayes.

I. INTRODUCTION

IN this modern era of technology, the quick rotation of news makes it very difficult to detect if it's false or true. Online-based newspapers have gained popularity rapidly. People can

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access the newspaper website with a click to check on current news. As it has become straightforward and accessible also, at the same time, yellow journalism has thrived to the maximum. There are thousands of news portals that can be found online, but very few can be trusted fully. Manual detection of fake news is a tough job and can't be done if the database is enormous. Various methods of detecting fake news have been proposed, but very few give high accuracy. Also, there are very few tools online that can be used to detect fake news. Obtaining and disseminating data across web-based media stages has become remarkably simple; distinguishing based on the content of information makes it difficult and nontrivial [1].

Automated fake breaking news detection is the task of assessing the truthfulness of claims in the news. For instance, openness to fake news can cause perspectives of inefficacy, estrangement, and criticism toward certain political up-and-comers. Fake news even identifies with actual rough occasions that undermine public wellbeing. Distinguishing fake news from the news source is a significant application in the modern world. This application can perform by using natural language processing (NLP). It likewise has more extensive effects on how innovations can encourage the verification of the integrity of cases while teaching the overall population. Fake news can be characterized as totally deceptive or made-up data purposefully circulated, guaranteeing apparent data. Manually fact-checking is very hard and tedious work. It is almost impossible to manually fact-check and authenticate when the database or dataset is too large. Our research aims to find fake news from different news sources. We have found outstanding performance using our proposed algorithm.

For this reason, automated fake news detection has become necessary, and therefore, many methods and algorithms have been developed over the years to solve this problem. There are many algorithms and methods for detecting fake news, but very few give accurate results. For detecting text-based fake news, many NLP methods are used nowadays. In this paper, we used a dataset from the kaggle website to check the accuracy of the result by testing through all the models, both traditional and deep learning [2].

The remainder of the paper is organized in the following manner. Section II discusses the objective of this research. Section III discusses the methodology used in this research in more detail. Section IV discusses the dataset and the preparation processes we took on the dataset, the