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New Strategies of Fake News Detection

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EXTENDED ABSTRACT

Introduction:

The expansion of the World Wide Web and online social media has transformed human communication and information sharing. Features such as ease of use and high speed have turned social media into a primary platform for online interactions. However, the growing popularity of these spaces has led to the spread of fake news, including misleading information, rumors, and false advertisements, which pose a threat to trust in authorities and businesses. These fake news stories undermine users' trust in online information and affect online purchases and user reviews. Despite the existence of verification systems like Snopes.com, their time delays and limitations have led to extensive research into developing automated systems to detect fake news. These efforts focus on elements such as the content of the news, the credibility of the author, and dissemination patterns to detect fake news in real time and with greater accuracy. This paper aims to provide a detailed overview of the most recent methods and strategies for detecting fake news, especially in the context of rapid advancements in artificial intelligence and machine learning.

With the widespread reach of fake news across social media and other digital platforms, this review focuses on identifying and evaluating effective approaches that can help tackle this growing problem.

Methods

Given the importance of detecting fake news, this paper reviews and compares various approaches utilized in this field. To this end, by studying articles published in online libraries and document repositories such as IEEE, Scopus, Elsevier, and others, we first explore different methods for detecting fake news. Then, we compare the various approaches of human-based detection with those of automated detection.

Results

This article refers to two main approaches for identifying fake news: human-based detection and automated methods. In the human-based method, websites like PolitiFact and Snopes identify fake news through detailed content review by experts. Additionally, platforms like Fiskkit allow ordinary users to evaluate news and opinions, although this method may not always be reliable due to user bias. Despite the advantages of human methods, they are often time-consuming and labor-intensive, highlighting the growing need for automated systems to identify fake news. Systems like Classify. News and Fact Mata use machine learning and artificial intelligence to analyze content and identify fake news with high accuracy, leveraging natural language processing (NLP) and complex algorithms.

In the second part, the article discusses automated verification methods and their applications in real-time fake news detection. These approaches utilize machine learning and deep learning algorithms to analyze content, writing patterns, and information dissemination on social networks. Real-time systems like MWPBERT, combining BERT and natural language processing, can detect fake news instantaneously. These systems rely on predictive analysis and distribution patterns on social networks to improve accuracy in identifying false information. Recent research shows that using hybrid models, such as CNN-RNN and Fake BERT, significantly enhances both the accuracy and speed of fake news detection.

Conclusions

It is concluded from the article that fake news is considered one of the biggest threats to social networks. These false reports can negatively influence decision-making in various areas, including politics, financial markets, online shopping, and even elections. Automatic detection of online fake news is a highly complex challenge, as it is closely tied to the rapid spread and dynamic, heterogeneous nature of information on social media. The article examines different aspects of fake news, including the producer, content, distribution platform, and target audience, to provide a comprehensive understanding of how fake news spreads and impacts users.

This study compares existing detection approaches and emphasizes that utilizing linguistic features, social network analysis, and dissemination patterns is critical for identifying fake news more effectively and quickly. In conclusion, the article suggests that combining machine learning with social analysis can enhance the accuracy and speed of detection, contributing to the prevention of misinformation spread.

Data Availability Statement

Data available on request from the authors.

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Ethical considerations

Not applicable.

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Conflict of interest

The authors declare no conflict of interest.

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