

Annotation-Scheme Reconstruction for “Fake News” and Japanese Fake News Dataset;

Introduction:-(*As input in different LLM*)

1. Fake news has caused significant damage to various fields of society, such as the economy, politics, and health problems. For example, during the 2016 U.S. presidential election, 529 different low-credibility statements (Jin et al., 2017) were spread on Twitter. Moreover, 25% of the news outlets that were linked from tweets, which were either fake or extremely biased in supporting Trump or Clinton, potentially influenced the election (Bovet and Makse, 2019). Recently, the COVID-19 pandemic in 2020 resulted in the spread of disinformation and harmful content in the rapid influx of information, such as the relationship between the COVID-19 vaccine and infertility (Schraer, 2021). Fake news has become a significant crisis that threatens a wholesome society and the social media ecosystem. Previous studies have proposed various tasks to combat the social problems caused by the spread of fake news. For example, the fake news detection task aims to classify whether the news content that is spread from news articles and social media posts is false. Additionally, many fake news datasets have been constructed as resources to facilitate the task, e.g., FakeNewsNet (Shu et al., 2020), Twitter16 (Ma et al., 2017), and CoAID (Cui and Lee, 2020). These existing studies on fake news detection and the corresponding dataset construction have focused almost exclusively on the factuality aspect of the news – Can we fully understand “fake news” and various events it causes based on these datasets given factuality labels? This is exactly the motivation behind our work. To promote understanding of fake news, we consider that it is necessary to provide not only factual information, but also information from various perspectives, such as the intention of the false news disseminator, the harmfulness of the news to our society, and the target of the news. We propose a novel annotation scheme to capture the various perspectives of false news, and it is based on our investigations of the definition of “fake news” and existing fake news detection datasets. We annotate each news story and its social media posts using the following points: (1) factuality, (2) intention of the disseminator, (3) target, (4) method to report the target, (5) purpose, (6) potential harm to society, and (7) types of harm. These annotations from various perspectives are useful in facilitating an in-depth understanding of fake news, which is a complex phenomenon. For example, it is interesting to consider how its spreading changes depending on the disseminator knowing whether the news is false or not. The annotations also provide a significant value to real-world applications, such as building a fake news detection system that reveals the potential dangers of false information for journalists, fact checkers, policymakers, and government entities. We then construct the first Japanese fake news dataset according to the annotation scheme. The construction of this dataset will facilitate our understanding of the spread of fake news in Japan. In the future, we plan to apply this method to other fake news datasets in English and other languages. Applying our annotation scheme to fake news in multiple countries and comparing the results is expected to enable a further detailed analysis of fake news. This study makes the following contributions: • We identify issues that need to be resolved in dataset construction through a comprehensive survey of existing fake news detection datasets. • We propose a novel annotation scheme to capture the news from various perspectives, instead of only considering factuality. • We constructed the first Japanese fake news dataset based on the annotation scheme.

Introduction explain in short:-

- Discusses the harmful effects of fake news on society.
- Explains a seven-step approach to combat fake news.
- Highlights the role of Japanese datasets in understanding and addressing fake news.
- Introduces a proposed annotation scheme to analyze fake news.
- Compares the Japanese dataset with other datasets for better accuracy and insights.
- Aims to improve fake news detection.
- Plans to expand the methodology to other languages for broader applications.

Analysis of LLM Outputs:-

1.Chat Gpt:- Output,

Simplified Version:

Introduction

Fake news has seriously impacted society, affecting areas like politics, the economy, and public health. For example, during the 2016 U.S. presidential election, many unreliable claims spread on Twitter, influencing public opinion. Similarly, in 2020, false information about COVID-19 vaccines caused confusion and harm.

To tackle fake news, researchers have developed methods to detect it and created datasets like FakeNewsNet and CoAID. However, most studies focus only on whether news is factually true or false. This approach is limited because fake news is a complex issue that also involves the intent behind spreading it, its impact, and its target audience.

Our study introduces a new way to analyze fake news by looking at multiple factors, including:

1. Factual accuracy
2. The intent of the person spreading it
3. Who the news targets
4. How it presents the target
5. Its purpose
6. Its potential harm
7. The type of harm caused

Using this method, we have created the first Japanese fake news dataset. This will help researchers better understand fake news in Japan and compare it with other countries. In the future, we plan to apply this method to datasets in English and other languages for a deeper analysis of fake news.

Key Contributions:

- We highlight challenges in building fake news detection datasets.
- We propose a new method that examines fake news from multiple angles.
- We developed the first Japanese fake news dataset based on our approach.

Output Analysis:-

- **Format:** Simplified version, following the original structure while making it easier to understand.
- **Strengths:**
 - Clear and well-structured.
 - Retains all key points from the original text.
- **Weaknesses:**
 - No additional insights beyond rephrasing the original text.

2.Deepseek:-Output

Fake news has caused significant harm across various sectors, including politics, the economy, and public health. For instance, during the 2016 U.S. presidential election, 529 low-credibility statements were shared on Twitter, with 25% of linked news outlets being biased or fake, potentially influencing the election. Similarly, during the COVID-19 pandemic, misinformation, such as false claims about vaccines causing infertility, spread widely. To address these issues, researchers have developed tasks like fake news detection and created datasets such as FakeNewsNet, Twitter16, and CoAID. However, these efforts have primarily focused on the factual accuracy of news, leaving gaps in understanding other aspects like the intent behind fake news, its societal harm, and its targets.

This study proposes a new annotation framework to analyze fake news from multiple perspectives, including factuality, the disseminator's intent, the target, reporting methods, purpose, potential harm, and types of harm. This approach aims to deepen the understanding of fake news as a complex phenomenon and support real-world applications like detection systems for journalists and policymakers. The study also

introduces the first Japanese fake news dataset based on this framework, with plans to expand it to other languages and countries for comparative analysis. Key contributions include identifying gaps in existing datasets, proposing a multi-perspective annotation scheme, and **creating a Japanese fake news dataset.**

Output Analysis:-

- **Format:** Formal and detailed but lacks structured formatting like bullet points.
- **Strengths:**
 - Maintains the original format and content.
- **Weaknesses:**
 - Lacks readability due to long paragraphs.
 - No additional insights or self-thoughts on the topic.

3. Gemini:-Output

This is a good summary of the research study. Here's a breakdown of the key points and some potential areas for further elaboration:

Key Strengths of the Summary:

- **Clear Problem Statement:** It effectively highlights the significant harm caused by fake news across various domains.
- **Concrete Examples:** The 2016 US election and COVID-19 pandemic examples provide compelling evidence of the problem's scope.
- **Identification of Research Gaps:** It points out the limitations of existing fake news detection approaches, which primarily focus on factuality.
- **Proposed Solution:** It introduces a multi-perspective annotation framework as a more comprehensive approach.

- **Dataset Contribution:** It emphasizes the creation of a new Japanese fake news dataset based on the proposed framework.
- **Future Directions:** It mentions plans for expanding the dataset to other languages and countries for comparative analysis.

Areas for Potential Elaboration (for a more detailed discussion):Specific Annotation Categories:

- Providing more details on the specific categories within the annotation framework (e.g., "disseminator's intent," "target," "types of harm") would enhance understanding.
- For example, what are the different types of "disseminator's intent" that are annotated? Is it to cause political harm, financial gain, or just trolling? What are the different categories of "types of harm" like psychological, financial, or reputational?
- **Methodology:**
 - Briefly describing the annotation process, including the number of annotators, inter-annotator agreement measures, and any challenges faced during annotation, would add rigor.
 - How was the data gathered?
- **Dataset Characteristics:**
 - Providing statistics about the Japanese fake news dataset, such as its size, distribution of fake news types, and sources, would be valuable.
- **Potential Applications:**
 - Expanding on the potential applications of the multi-perspective approach, particularly for journalists and policymakers, would

strengthen the study's impact.

- Example, how can the intent of the fake news be used to create better detection algorithms?

- **Cultural Context:**

- Explaining why the Japanese fake news dataset is important, and how fake news may be different in the Japanese cultural context.

- **Ethical Considerations:**

- Addressing ethical considerations related to collecting and analyzing fake news data, such as privacy concerns and potential biases, would demonstrate responsible research practices.

In summary, the provided information is a strong foundation for understanding the study. By elaborating on the specific details of the annotation framework, methodology, and dataset, the researchers can further enhance the study's impact and contribute to a more comprehensive understanding of fake news.

Output Analysis:-

- **Format:** Summary-style with additional analysis and self-thoughts.
- **Strengths:**
 - Adds depth by analyzing the significance of the dataset and fake news detection.
 - Breaks down information into key areas of improvement.
- **Weaknesses:**
 - Deviates from the input text by introducing new perspectives.
 - May not align strictly with the given content.

4.Claude:- output

Fake news has damaged society in many areas including economy, politics, and health. Examples include biased news during the 2016 U.S. presidential election and COVID-19 vaccine misinformation. While previous research focused mainly on detecting whether news is factual or false, this approach is limited. Our work introduces a new annotation scheme that examines fake news from multiple perspectives: factuality, disseminator's intention, target, reporting method, purpose, potential societal harm, and harm types. This comprehensive approach enables deeper understanding of how fake news spreads and its impacts. We've created Japan's first fake news dataset using this scheme and plan to extend it to other languages for cross-cultural analysis. Our contributions include identifying issues in existing datasets, developing a multi-dimensional annotation approach beyond factuality, and creating

the first Japanese fake news dataset.

Output Analysis:-

- **Format:** Summarized and concise.
- **Strengths:**
 - Covers key aspects efficiently.
 - Easy to read and understand.
- **Weaknesses:**
 - Lacks detailed explanations of examples.
 - Omits some critical points from the original text.

5.Perplexity:- Output

Here's a simplified version of the paragraph:

Introduction to the Impact of Fake News

Fake news has significantly harmed various aspects of society, including the economy, politics, and health. For example, during the 2016 U.S. presidential election, numerous low-credibility statements were spread on Twitter, potentially influencing the outcome. Similarly, misinformation about COVID-19 vaccines and infertility spread rapidly during the pandemic. Fake news poses a major threat to society and the social media ecosystem. Previous studies have focused on detecting fake news by classifying its factuality. However, understanding fake news requires more than just fact-checking; it involves analyzing the intentions behind it, its targets, and its potential harm to society. To address this, a new annotation scheme has been proposed to capture these various perspectives, which can help build more effective fake news detection systems and enhance understanding of its spread in different regions.

Key Contributions:

- Identifying gaps in existing fake news datasets.
- Proposing a novel annotation scheme to analyze fake news from multiple angles.
- Constructing the first Japanese fake news dataset based on this scheme.

- **Citations:**

1. <https://www.timesprime.com/blog/impact-of-fake-news-103834151>
2. <https://cmpfo.gov.in/pdf/manual.pdf>
3. <https://blogs.lse.ac.uk/impactofsocialsciences/2024/10/08/misinformation-is-a-threat-to-society-lets-not-pretend-otherwise/>
4. <https://aithor.com/essay-examples/the-impact-of-fake-news-on-society-and-democracy-2>
5. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8767040/>
6. <https://www.jiscollge.ac.in/pdf/projectcasestudy.pdf>
7. https://en.wikipedia.org/wiki/Fake_news
8. <https://libguides.uvic.ca/fakenews/consequences>

Output Analysis:-

- **Format:** Short and generalized summary.
 - **Strengths:**
 - Provides citations and sources for claims.
 - Concise and to the point.
 - **Weaknesses:**
 - Over-simplifies the content, losing focus on critical points.
 - Does not provide deep analysis.
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