Republic of the Philippines
CAVITE STATE UNIVERSITY
Don Severino de las Alas Campus
Indang, Cavite

AI-Powered Fake News Detection System Using Natural Language Processing~~RESEARCH PROPOSAL TITLE~~

Rationale/ Introduction

The spread of fake news on social media and digital platforms has become a major concern, influencing public opinion, politics, and societal trust in information sources. Traditional fact-checking methods rely on human intervention, which is time-consuming and inefficient in handling the large volume of online misinformation. Artificial Intelligence (AI), particularly Natural Language Processing (NLP), offers an effective approach to detecting fake news by analyzing textual patterns, sentiment, and credibility of sources. This research aims to develop an AI-powered fake news detection system that utilizes NLP techniques to automatically identify and flag misleading information in real time. ~~<Insert content; In-text citations are needed>~~

Significance of the Study

This study is significant as it explores the role of AI in combating misinformation and improving online information credibility. By developing an AI-powered fake news detection system, this research will contribute to enhancing digital media literacy, assisting fact-checkers, and promoting responsible information sharing. The findings will benefit journalists, social media platforms, and policymakers by providing insights into the effectiveness of AI in detecting misinformation. Additionally, the study will address challenges such as bias in AI models, ethical considerations, and the evolving nature of misinformation tactics. ~~<Insert content>~~

Scope and Limitations of the Study

This study will focus on developing and evaluating an AI-powered fake news detection system that analyzes online news articles and social media posts using NLP techniques. It will assess the system's accuracy in detecting misleading information and classifying news credibility. However, the study will not cover misinformation spread through images, deepfake

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Academic Writing Style (good writing style should be considered)
APA formatting (referencing and in-text citation)
Always make sure that your proposal falls under any 3 prioritized CS research tracks
Avoid plagiarism
Always make sure that your proposed study is specific and attainable.
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First paragraph: Introduce ano yung problem or yung research gap. It is something that you want to address. Not because it is called problem ay direct problem na ito. It can be the gap, weaknesses, issues, or based on recommendations from existing literature.

Second paragraph: In few sentences, describe how you'll be able to solve the research gap or isolve ang weaknesses nito.

Third paragraph: Potential impact. Dito nyo na ihighlight yung expected outcomes or benefits nito.

Fourth paragraph: Conclusion. Just a summary of this rationale and conviction na maipush ang proposal nyo. This highlights yung value ng proposal nyo to contribute sa field ng CS.

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Dito rin dapat ilagay yung "possible" contribution nito sa U.N. SDG. Basahin po muna ang https://www.un.org/sustainabledevelopment/sustainable-development-goals/ bago maglagay ng content. Wag magassume dahil may focus ang bawat goal.

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videos, or non-textual media, nor will it investigate legal policies related to fake news regulation.

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Objectives of the Study

This study aims to design and develop an AI-powered fake news detection system that improves misinformation identification in digital media. By evaluating its accuracy, efficiency, and real-world applicability, the research seeks to enhance AI-driven fact-checking solutions. Specifically, it will:

1. Develop an AI-based fake news detection system using Natural Language Processing (NLP) techniques.
2. Evaluate the system's accuracy in identifying misleading news articles and social media posts.
3. Identify challenges and propose improvements for AI-driven misinformation detection systems.

Expected Outputs

Expected Outputs

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The research is expected to produce a functional AI-powered fake news detection system prototype. It will provide an analysis of the system's effectiveness in identifying and flagging misinformation, along with recommendations for optimizing AI-driven fact-checking methods. The study will offer insights into the ethical and technical challenges of AI in combating misinformation, including algorithm bias and adversarial misinformation tactics.

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Description of outputs (specifications, datasets, algorithms, prototypes, etc.)
Description of materials to use

References

Rashkin, H., Choi, E., Jang, J. Y., Volkova, S., & Choi, Y. (2017). *Truth of varying shades: Analyzing language in fake news and political fact-checking. Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing*, 2931-2937.

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Shu, K., Sliva, A., Wang, S., Tang, J., & Liu, H. (2017). *Fake news detection on social media: A data mining perspective*. *ACM SIGKDD Explorations Newsletter, 19*(1), 22-36.

Zhou, X., & Zafarani, R. (2020). *A survey of fake news detection: Methods, datasets, and opportunities*. *ACM Computing Surveys, 53*(5), 1-40.