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AI-Powered News Aggrigator

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Abstract: ***The rapid growth of digital media has improved access to information but also increased the spread of fake and misleading news. The AI Powered News Aggrigator is a web-based application designed to address these challenges by combining news aggregation and AI-based verification. The system collects real-time news from trusted sources using NewsAPI and provides personalized content based on user interests. By integrating Artificial Intelligence for authenticity verification, the platform promotes responsible information consumption while enhancing user experience. This project demonstrates the practical application of AI, API integration, and full-stack web development for both academic and real-world use.***
Keywords: Digital Media, Perplexity AI, NewsAPI Integration, Fact-Checking, Personalized News

I. INTRODUCTION

The rapid expansion of digital media has revolutionized the way information is created, distributed, and consumed. Online news platforms, social media, and mobile applications have become primary sources of information for millions of users worldwide. While this transformation has improved accessibility and speed, it has also led to the widespread circulation of fake or misleading news. As a result, researchers and developers have focused on designing systems that can aggregate news efficiently while also verifying its authenticity. This chapter presents a review of existing literature related to news aggregation systems, fake news detection techniques, and artificial intelligence-based verification methods.

Traditional news aggregators primarily rely on RSS feeds, keyword-based indexing, and metadata analysis. While these systems are effective in collecting large volumes of content, they generally focus on information retrieval rather than information verification. Most aggregation platforms do not evaluate the credibility of news articles, leaving users responsible for judging the authenticity of the content.

Moreover, many existing systems provide limited personalization and often overwhelm users with irrelevant information. This highlights the need for intelligent news aggregation systems that combine personalization with credibility assessment.

II. LITERATURE REVIEW

News aggregation systems collect news articles from multiple sources and present them in a unified format Researchers have identified several forms of misinformation, including fabricated content, misleading headlines, propaganda, and satire misinterpreted as real news.

The existing news ecosystem consists of online news websites, social media platforms, and traditional news aggregation applications. These systems mainly focus on collecting and distributing news content from multiple sources to users. System analysis is a crucial phase in the software development life cycle, as it helps in understanding the existing system, identifying its limitations, and defining the requirements for the proposed system. In the context of news consumption, the increasing availability of digital news sources has created challenges related to information overload and the spread of fake or misleading news. Existing systems provide partial solutions but fail to address the problem comprehensively

A. Limitations of Existing Technology

1) Most systems do not analyze the credibility of news content before presenting it to users.
2) Manual or third-party verification processes are time-consuming and not suitable for real-time news
3) Users are exposed to a large volume of irrelevant news, reducing usability and engagement.
4) Users are not provided with explanations or confidence levels regarding the credibility of news.
5) Scalability and Cost Issues: Manual verification methods cannot scale efficiently with the growing volume of digital content

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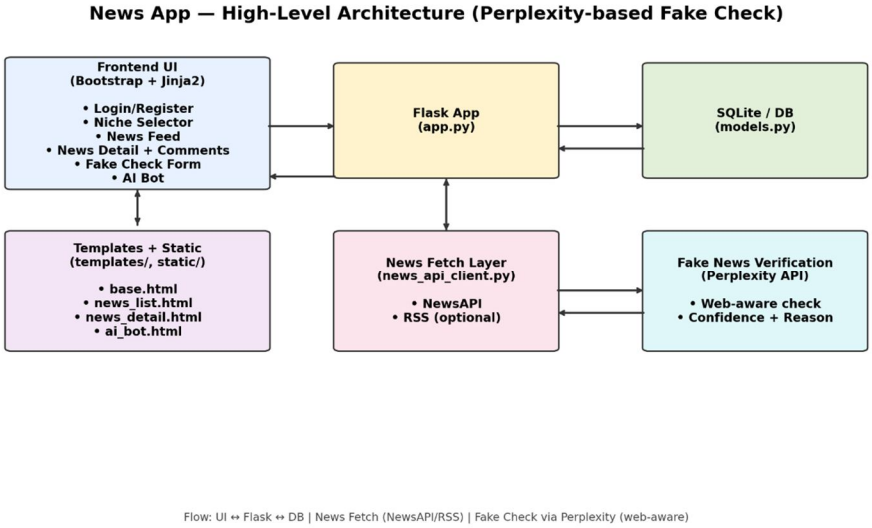
III.PROBLEM STATEMENT

Due to the increasing dependence on digital platforms for news consumption has led to several critical problems. False and misleading news spreads faster than verified information, making it difficult for users to distinguish between real and fake content. Most existing news aggregation platforms focus only on collecting news from various sources without verifying the authenticity of the information Many systems do not adapt content based on user preferences, leading to poor user experience. Manual verification of news is slow, resource-intensive, and not scalable for real-time applications. Users are exposed to a large amount of irrelevant news, making it hard to focus on topics of interest.

IV.METHODOLOGY

The AI-Powered News Aggregator and Fake News Detection System works through multiple modules to collect, verify, and deliver reliable news. It begins with news data collection using APIs such as NewsAPI to gather real-time articles. The collected news is cleaned and prepared through text preprocessing, including tokenization and removal of unnecessary words. Next, feature extraction is performed to identify important keywords and contextual patterns from the text. The system then applies machine learning and NLP techniques to classify news as real or fake. After verification, the news aggregation module organizes articles into categories for easy access.A personalization module prioritizes content based on user interests to improve relevance. If suspicious content is detected, the system displays credibility warnings to alert users. Finally, the system stores articles and results in a database for future use and continuous improvement.



V. DATASET DESCRIPTION

A. Dataset Name

The performance of the proposed AI-Powered News Aggregator and Fake News Detection System relies on a diverse dataset collected from publicly available fake news datasets and real-time news articles via APIs. The dataset includes both verified true news and misleading or fake news to ensure effective real-world detection.

B. Number of Articles

Total news articles: 5,000 – 10,000
Data format: Text-based news content (title, body, source, publication date)

C. Labels/Classes

The dataset is categorized into the following classes:
Fake News – Articles containing misleading, false, or manipulated information
Real News – Verified and factual news from trusted sources

D. Train–Test Split

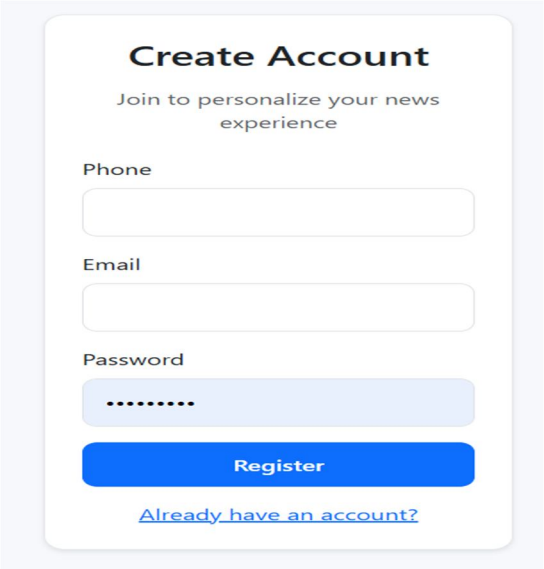
The dataset is divided to evaluate model performance:
Training set: 70% of total articles
Testing set: 30% of total articles

VI. EXPERIMENTAL RESULT/ANALYSIS

This chapter presents the results obtained after implementing and testing the AI-Powered News Aggregator and Fake News Detection System.

The results indicate that the system effectively meets its objectives and provides a practical solution for responsible news consumption.

1) The authentication module ensures secure access to the system.
2) The AI News Bot enables users to search for real-time news using keywords and filters.
3) The fake news detection module allows users to verify the credibility of news content
4) The comment module enables user interaction with news articles



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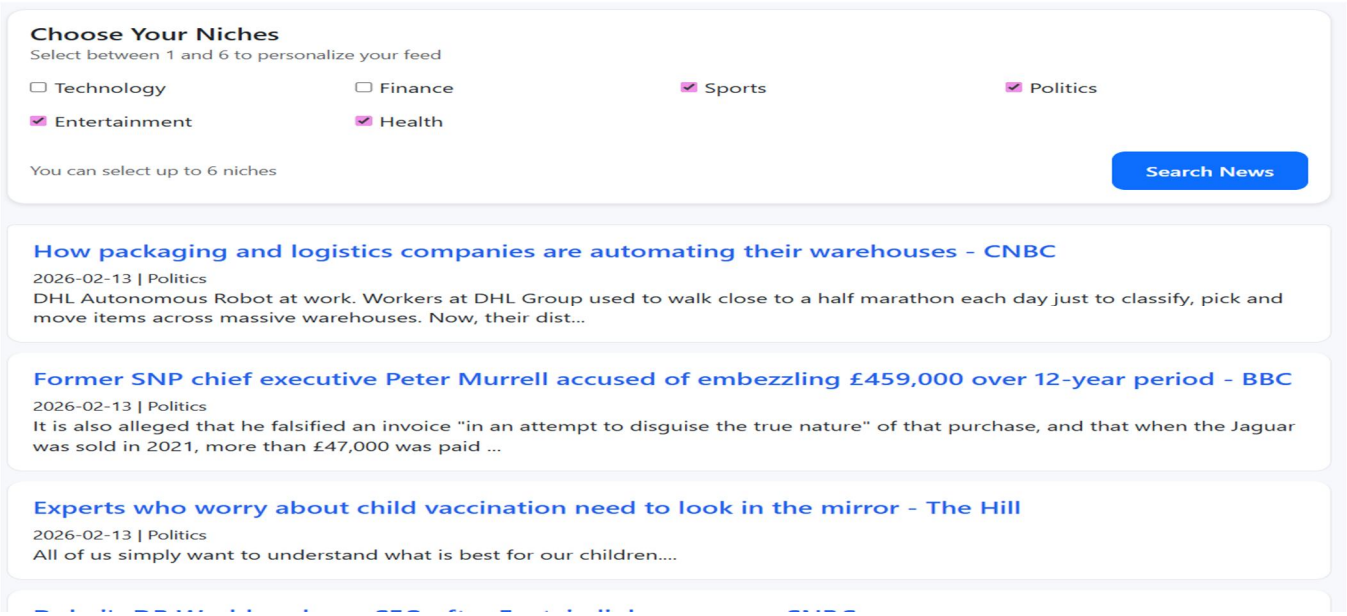

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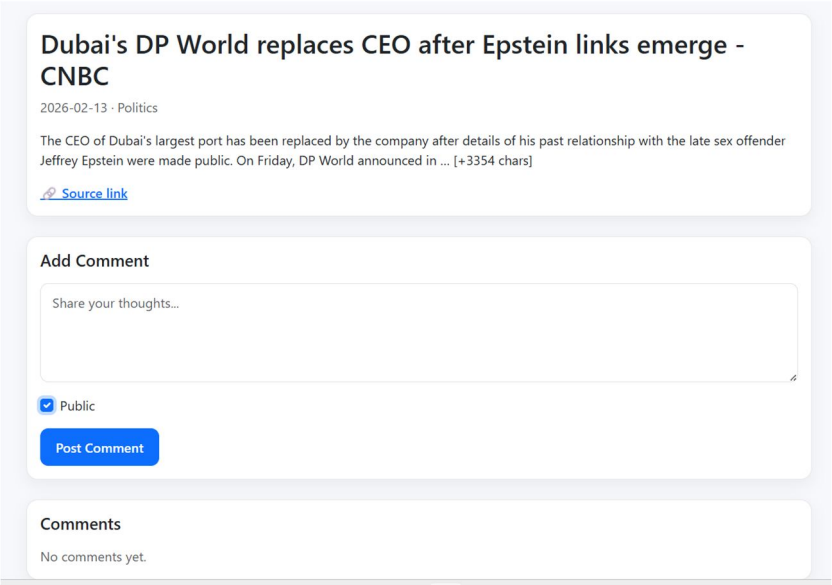
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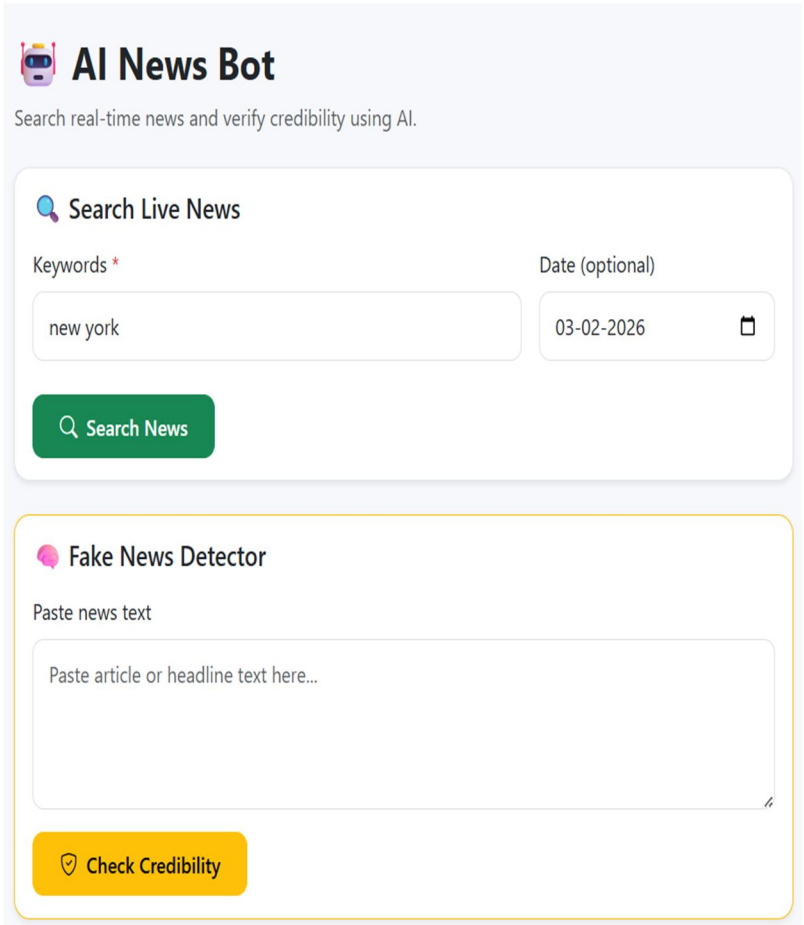
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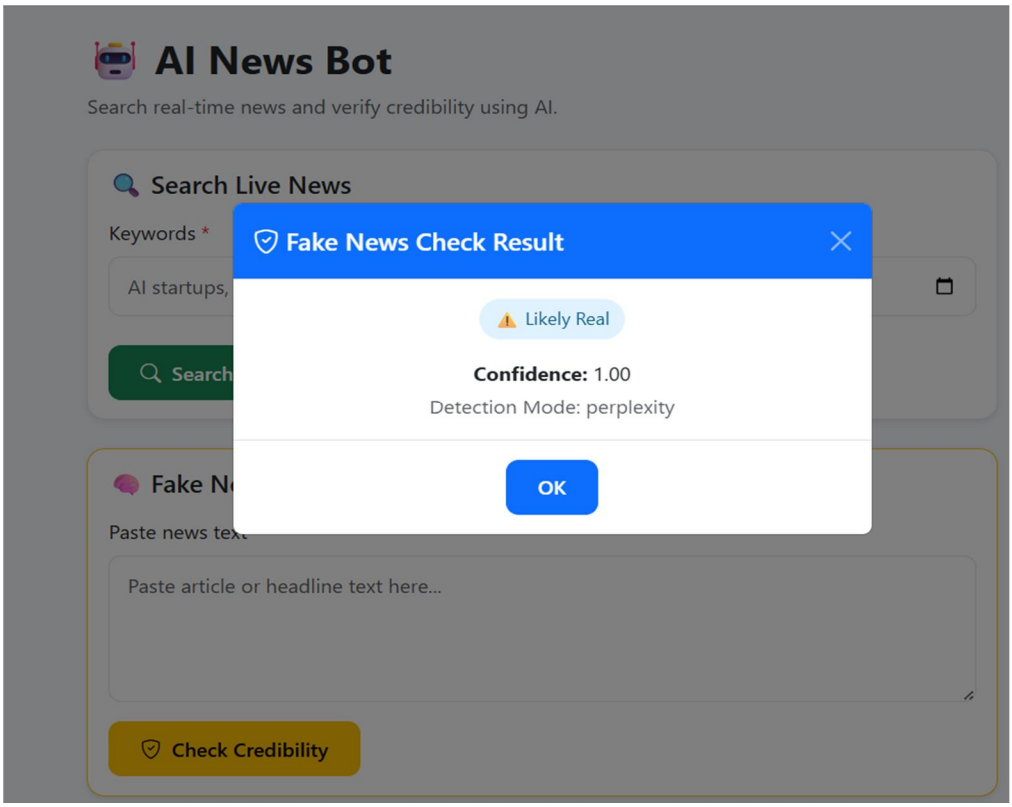

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VII. FUTURE SCOPE

The system can be enhanced by integrating multiple AI models and fine-tuned transformer models to improve fake news detection accuracy. Source credibility scoring and explainable AI can increase transparency and user trust. Multilingual support with language detection and translation will make the platform accessible to a wider audience. Additional features like sentiment analysis and automatic news summarization can improve readability and user understanding. Developing a mobile application with push notifications will enhance accessibility and engagement. Performance can be improved through caching, asynchronous processing, and scalability optimizations. An admin dashboard with moderation and analytics will strengthen system monitoring and governance. Security can be reinforced using role-based access control, two-factor authentication, and secure API management.

VIII. CONCLUSION

The AI-Powered News Aggregator and Fake News Detection System was developed to tackle information overload and the spread of misleading news. It combines real-time news aggregation, personalized content delivery, and AI-based verification in a single user-friendly platform. Using NewsAPI, the system delivers relevant news based on user interests, improving engagement and usability. Secure authentication ensures safe access and protects user data.

The fake news detection module analyzes news credibility and provides confidence scores with explanations, helping users make informed decisions. The AI-powered search feature enables quick and efficient news retrieval. Built with modern technologies like Flask and SQLAlchemy, the system is reliable and scalable. Overall, the project demonstrates how Artificial Intelligence can help combat misinformation and improve digital news consumption.

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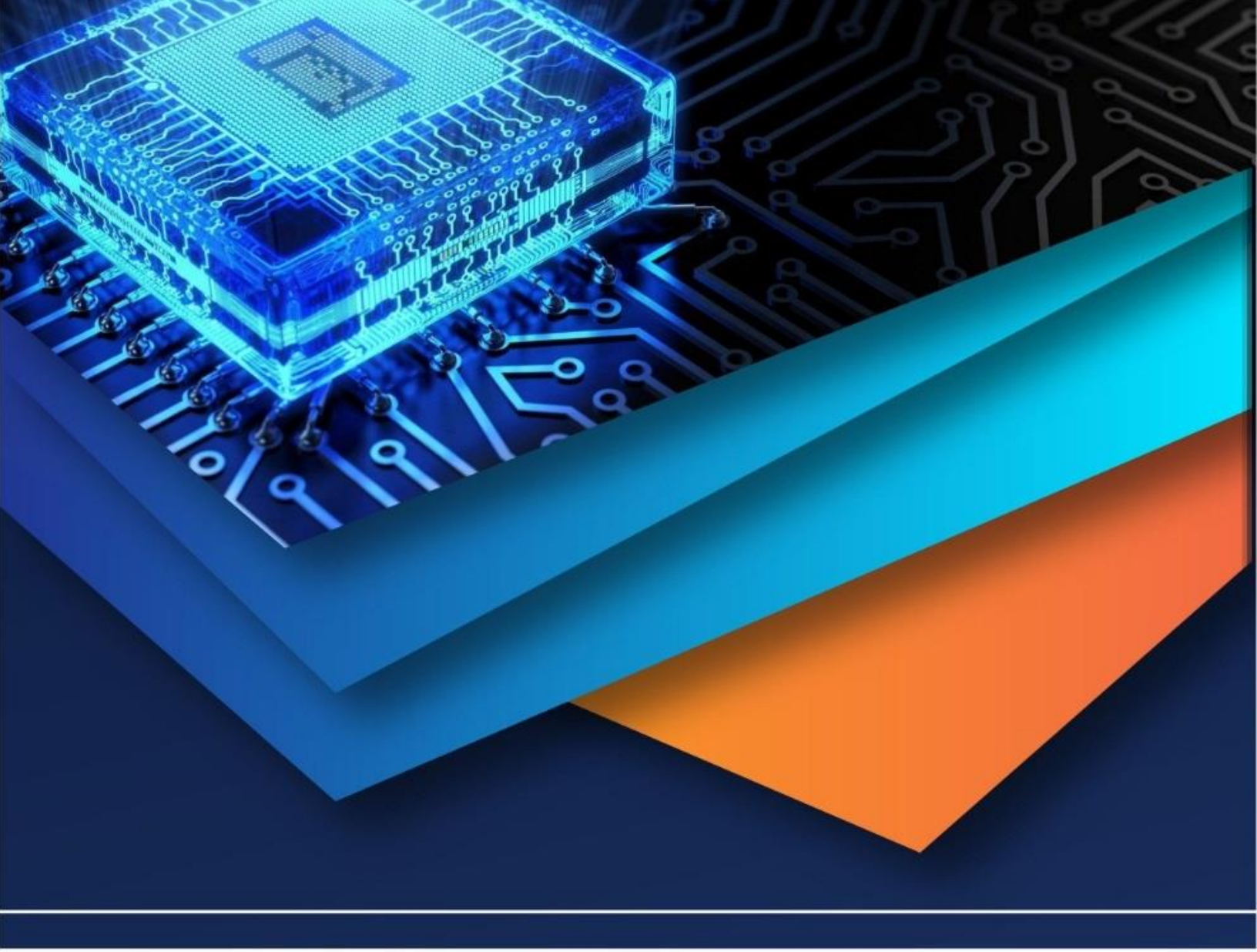

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