
Reviewing the Framework of Blockchain in Fake News Detection

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ABSTRACT

In the social media environment, fake news is a significant issue. It might be online or offline, depending on the field of journalism. Concerns have been expressed by media and publishing houses, who are looking for solutions to the problem. One of the solutions the industry has to offer in this area is Blockchain. It could be digital security trading, source or identity verification, or quotes following a certain news piece, photo, or video. It's miles of shared document generation to deliver timely files, and it's done with the help of a specific article, video, or image that has been addressed. This will no longer assist the fact abuser in verifying the details. This will help the fact abuser confirm the details, but it will also offer documentation of metadata generated at all phases. It allows you to cut the expense of disseminating false information by forwarding and explicit disclosure to persons who have first-hand knowledge of the subject. The proposed structure for acquiring fake news is supported by the blockchain age, which allows news organizations to deliver their content to their subscribers transparently. This framework was created for journalists and can be integrated into any current platform to publish a news piece and include asset statistics.

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1. INTRODUCTION

The discovery of non-information and the identification of information assets have become the backbone of conversations in the information industry and forums. Anyone can forcefully remove or exploit visual content during digital deployment and share it on social media networks [1]. On the one hand, those social networks provide appropriate flexibility in modern communication; nonetheless, their use has generated new conditions that must be addressed in the actual world, such as the viral spread of false statistics and evil intent. As the population of the twentieth century grew quicker, the quality of services or records provided to the public became increasingly significant, influencing how the public's skills performed. The transparency and authenticity of data offered by recognized professionals make the public more efficient and satisfying their lives, whether in technology, law, politics, the business of trade, or any other field. For most people or inhabitants of the country, it is preferable to have questions about the validity of the information they encounter daily. The birth of the internet with the widespread acceptance of social media platforms (e.g., Facebook, Twitter, and WhatsApp) has covered the manner instead of the spreading of records never previously seen in human being record [2], [3]. Thanks to the everyday use of social media, clients are growing and sharing more knowledge than ever before, which is false and unrelated to reality. The default category of text articles, such as misleading or anonymous information, is difficult to complete. Even an expert in a particular

field should think about a few things before deciding on the editor's truth. We agree to apply the device learning method for creating computerized information articles in these diagrams. Our investigation looks at several residential locations that can be used to discern fake information from the actual thing [4]. We present a mixture of multiple system acquisition knowledge algorithms for the use of various integration approaches and test their performance in four accurate databases using these settlements.

In comparison to young people, experimental testing confirms the actual effectiveness of our recommended strategy of engaging students. More than 0.33 stadium visitors use digital amenities, such as social networking systems and messaging packages. These platforms have transformed the way consumers interact and communicate online, allowing for a new wave of applications while improving the current statistical environment. Because there is no regulatory framework in place, this information can be abused. This will not only assist the fact abuser in verifying the details, but it will also offer documentation of metadata generated at all phases [5]. It allows you to cut the expense of disseminating false information by forwarding explicit disclosure to persons who have first-hand knowledge of the subject. The proposed structure for acquiring fake news is supported by the blockchain age, which allows news organizations to deliver their content to their subscribers transparently. This framework was created for journalists and can be integrated into any current platform to publish a news piece and include asset statistics. Because there is no regulatory framework in place, this information can be abused. Digital platforms have transformed how reports are produced, delivered, and used, presenting both unexpected benefits and significant challenges.

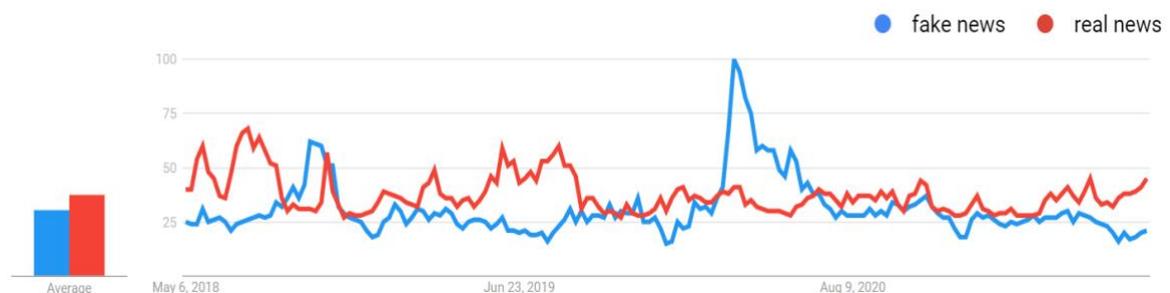


Figure 1. Fake news vs. real news worldwide between 2018-2023

2. METHOD

A narrative literature review is a qualitative research method that summarizes current literature to provide a thorough overview of a certain issue [6], [7], [8]. Unlike systematic reviews, narrative reviews do not adhere to a strict process, but rather provide a more flexible way to studying and interpreting the literature. This strategy is very beneficial for acquiring insights into complex topics by combining data from many studies.

A narrative literature review offers a comprehensive and adaptable way to investigate the possibilities of blockchain in false news detection, particularly in light of the issues posed by the digital and social media era. This method critically reviews existing studies on blockchain characteristics such as transparency, immutability, and decentralized verification, as well as how these aspects can help to prevent the viral spread of erroneous or corrupted data. The literature in this field focuses on the issues provided by uncontrolled digital platforms that allow for content exploitation and the dissemination of false information. By examining topical areas such as blockchain-enabled source authentication, metadata monitoring, and content transparency, the analysis offers insight into the methods by which blockchain might meet the growing demand for reliable and verifiable information in digital environments.

The narrative study will also cover the integration of blockchain frameworks into existing journalism and media platforms, providing practical insights into their deployment and efficacy. Case studies of blockchain-based solutions, such as Civil and Po.et, will demonstrate their effectiveness in countering fake news while addressing obstacles such as cost, scalability, and public adoption. This method also investigates how blockchain promotes collaboration among journalists, news organizations, and consumers through transparent content delivery and metadata documentation. By synthesizing diverse findings, the review not only identifies blockchain's opportunities but also provides

critical perspectives on its challenges, helping to develop a strong conceptual framework that aligns blockchain's capabilities with the pressing need for reliable information in the digital age.

3. RESULT AND DISCUSSION

3.1 Fake news and its negative impact

During the recent decade, there has been a significant increase in the identification of misleading information, which was primarily determined during elections. Such an increase in non-statistical online dissemination of publications has resulted in a slew of issues that span a range of areas, including sports, extra technology, as well as physical fitness [9]. The financial sector, for example, has been plagued by incorrect information, and rumors are likely to have severe implications and disrupt the market. Our ability to make decisions depends entirely on the data we ingest; our global perspective is constructed on the realities we deny. There is mounting evidence that customers are behaving irrationally to the newly available information. One of the most recent developments in the propagation of the new coronavirus, which has resulted in incorrect information being circulated online about the virus's origin, surroundings, and behavior. As adults become increasingly aware of bogus news, the situation is worse [10], [11].

Some algorithms, meanwhile, may be used to identify particular publications as fraudulent based on their content. The majority of these approaches rely on truth-verifying websites. Around dozens of archives provide a list of websites that have been discovered to be confusing and hypocritical by academics. The difficulty with the services is that they require human skills to identify fake articles and websites. Most notably, truth-oriented websites feature articles from specialized and political domain names, and fake news items from a few domain names such as entertainment, sports, and time are not uncommon. The comprehensive web platform records data in various formats, including papers, videos, and audio. It is challenging to mix and categorize news that is uploaded online in an informal manner (containing details, articles, movies, and audio) since it requires people to know. However, computer skills like natural language processing are able to overcome the contradictions between textual content articles that mislead the public and statistically based publications. Analysis comparing the distribution of fake data in the test with actual data is one of the strategies used [12], [13], [14]. The replies to a piece of writing can be characterized theoretically to determine whether the item is genuine or not.

Another hybrid method can be utilized to investigate the editor's public response and test text functions to determine whether a particular text is deceptive. Fake news is defined as material with false data behind it but was ingested by tens of millions through television, radio, websites, or social media. Lying or giving false testimony can harm a person's or an industry's reputation, as well as politics, health, stock, sports, and money. For example, in 2016, "Obama issued govt directives and as a ban on allegiance to schools across the country" were elements of films that distinguished non-viral news on Facebook. Throughout the 2016 election, the content of the content has been changed to smear Obama's image. These beliefs aren't just political; they can also impact other areas like resiliency, tourism, and business. Because there is a diversity of content around the incorrect details, it is not safe to understand them.

1. Cynicism - when false memories are put on websites for the express aim of amusement but without the ability to deceive others.
2. False connection - where the news material isn't relevant.
3. Inappropriate context - when relevant content is shared in an inappropriate context.
4. False or repurposed content - where real things are mimicked by repurposed or fraudulent sources.
5. Fake content - when information is manufactured for both parties' financial gain or profit disclosure.

Here are a couple of examples of real news:

1. Deception is one of the most severe issues associated with misleading information. Fictional content might perplex the general audience, especially when it comes to a particular genre of political events.

2. More than 1,000 political and electoral reforms were ruled fake during the Jakarta dictatorship election in 2017. The event circulates "false rumors" about a Swede who has become an opposition member and fears that his loss in the election will result in a widespread conversion of Muslims.
3. False information can have a negative impact on national and international relations.
4. Fake scandals are frequently seen as more credible than the truth, resulting in abuse, bigotry, and the stigmatization of love. Buzzfeed broke the story, alleging that the jewelry we keep in our bodies had converted real diamonds into fakes. The signal collection fell to a 7.7% threshold because of this misconception, and the popularity plummeted in tandem with the loss of the trading company. Gambling is a significant activity to handle uncertainty in the long run, whereas the blocked reaction primarily can trade in the way facts are produced and distributed. To see how blockchain generation can combat fraud, all you need is permission.

3.2 Fake news issues

Many studies focus on locating and sorting fake news on social media platforms such as Facebook, Twitter, WhatsApp, etc. Fake stories are grouped into numerous sorts on a conceptual level; the data is also generated to make it a fashion-read gadget with many domain names [15], [16]. According to studies, the overall accuracy of extended gram counts for a single article is diminished due to the available diversity of extended gram counts. The goal of this event was to gain a better understanding of the fashion trends in the category [17]. The authors also go over social and psychological concepts and how they might be exploited to gain incorrect information on the internet. Furthermore, the authors discussed several record techniques for the building of models as well as tactics for skill release. These genres are determined by writing style and the social setting, including shape and distribution.



Figure 2. Fake news issues

3.2.1. Characteristics of misconceptions problems

The following significant elements draw attention to the misconceptions:

1. Content is intended to be entirely or partially false, manage or lie, or employ unethical deception techniques (propaganda or ideologically suppressed content). The thing attempts to undermine social equality, particularly independent processes, fundamental privileges, and regulatory frameworks, by focusing on insecurity, hostility, or segregation [18], [19].
2. Addresses topics of public concern (e.g., politics, resilience, and environment).
3. Its truths continue to be spread via automated and competitive ways (e.g., marketing methods such as campaigns, faux accounts, bots, and micro-concentrated). This contains features that allow quick and extensive distribution. False information is more likely to emerge faster and beyond reality.
4. AI, feature internet, added reality, and digital reality are becoming increasingly resistant to acceptance, and phony data has fewer reserves than production.

3.2.2. False news occurrences and repercussions

Although the impact of the volume of fake news is yet unknown, it appears to have had a significant effect on public morality in limited situations. Misinfodemics, for example, are when incorrect information about illness severity (e.g., vaccination effects) allows diseases to emerge. Error details have an impact on the following areas:

1. Confidentiality and security of data. Platform vendors' donations are also influenced by making significant money data. Biostatistics and preference systems appear to improve the susceptibility of statistical confidentiality, revealing demographic facts in a few circumstances through involvement (psychological factors) [20], [21].
2. Freedom of expression and information access.

3.2.3. Deepfakes and emerging technologies

Developing technologies and deep fakes that construct facts have never been more complex. People are also increasingly exposed to jobs because of emerging technologies such as IoT. Furthermore, natural language processing and artificial intelligence are required to reinforce the impending fake certainty, in which deception detection will be impossible for humans and extremely difficult for robots [22], [23]. In-depth study, for example, is often utilized to construct styles that incorporate hate networks, which allow for the effective modification of anonymous pictures and videos through individual and machine alteration. The impact of outward deception will be substantially amplified as deep stones emerge. In addition to the additional threats to democracy and national security, entities, enterprises, and civilizations might confront increased forms of fraud. Several ways, including technology to cope with visual deceit, have been addressed in recent textbooks and procedures (social analysis, mass detection techniques). On the other hand, emerging technologies will increase the effectiveness of fake stories. Still, the same technology can also help deal with and delete leads, allowing more research into aggressive movements.

3.2.4. The social media news

Verbal encounters are organized and enhanced through social media. Citizens can also notice some contents they spend is manufactured, impulsive, unbiased, and creative, as well as that it was created with minimal strategy or intent. Furthermore, social media confidentiality legislation and conditions of observance permit the collecting of massive population records (e.g., styles, reports) to offer to many artists through extensive profiles, high-level analytics, low-level advertising, and automated content. For example, uncertainty makes it harder to track advertisers and collect actual proof to enhance credit.

3.3 Role of Blockchain in Fake News Detection

The Blockchain is being used to combat fake news. Fake stories (untrue but true) are difficult to decipher because a wide range of content is available, including fraudulent content, artificial content, misleading links, and more. So, let's see how Blockchain can assist with white news and other types of online material. A generation can establish the validity of their media assets due to the distribution of world power, consistency, openness, and privacy [24], [25]. New York Conditions revealed in July 2019 that they were building on a blockchain-based solution called "information initiation details" to counteract false information in the media. Furthermore, the regulation aims to maximize content alternatives by combining assured recognition and chain availability. With the support of Kathryn Harrison, the deep-seated unity of thought also aims to make it more usual for information and other types of content to be published online by documenting the entire journey from source to consumer. All other crucial blockchain stuff is within your control [25], [26], [27] The possibility of fraud will be avoided if everyone uses a content management system that covertly allows your memories to be

preserved. You record them, which secures the usage of the Blockchain. Furthermore, the Blockchain has been used to test a variety of services in this domain. The validity of a tale can be determined by the exact circumstances set within intelligent contracts to assist the intended audience in realizing acceptance.

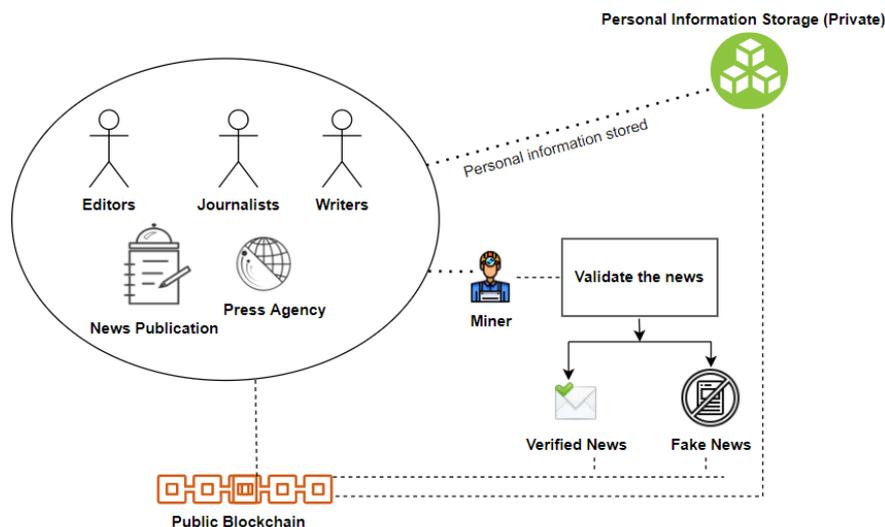


Figure 2. Blockchain in fake news detection

Flexible Blockchain features ensure that public-domain content and movies cannot be changed or erased. The software utilized can track authenticity and protect readers from being duped by fake information. Journalists who provide the range to the platform are responsible for creating and disseminating non-global news. However, with a blockchain, newshounds must sign on to a site with crucial information like a painting license, and 1/3-celebration APIs will execute the required heritage verification. Policies based on smart contracts will aid in generating newshound levels based entirely on their files. If a journalist modifies any information about the blockchain community, it will be available to everybody, assisting them in determining whether the written content is genuine.

3.3.1. Revolution of Blockchain

Blockchain technology is being marketed as a rising technology that will revolutionize the way information is produced and distributed. The problem of false news may be efficiently addressed credits to the traceability, transparency, and allocation of local blockchain power [28]. Online readers will be able to trust your content and provision if you use a blockchain platform that has been approved. Users that are worried about a blockchain-based platform include:

Fake information has been around for ages and is far from being new. It has been around for nearly 500 years since the invention of printing. Because there was no "idea of journalistic conduct or accuracy" at this period, "actual" stories are becoming more difficult to verify. Misinformation has frequently resulted in violence, even though it is intended to create sensual and emotional feelings. What's more concerning is "the way incorrect and practical information has been demonstrated to be."

Faux stories flourished through social media and generation in the same way that they multiplied simultaneously with the widespread diffusion of news. Each one helps to expand access to disinformation and the speed with which it travels to new heights. Nowadays, bogus information is classified as fake material which exists to be true [29], [30]. According to the Cambridge Dictionary, "fake news" is now described as "fake information that looks to be real news and is transmitted via the internet or through other media." As an example, propaganda, political sway, and popular opinion. "More than half of YouTube videos seen at the top of COVID-19 contain false material, reaching millions of viewers globally," according to the BMJ Dynamic Picture of the World. What is blockchain technology, and how does it work? Everything and anything is being spoken about the Blockchain and its tremendous potential in important industries such as economics, politics, tracking, and now media and records! But

what is a blockchain, exactly? But what is a blockchain, exactly? This email goes into great detail about it, but here are the main points for essential awareness.

3.3.2. Decentralized ledger

Blockchain is a decentralized ledger that functions similarly to a database. The ledger is distributed across all computers, which can be installed anywhere in the world and work on any internet connection. It is preferred by government regulation (E, financial institutions, corporations like Google, small-medium companies or individuals). The information will not be deleted, edited, or categorized as a database after it is presented to the ledger.

3.3.3. Chain of Blocks

The Blockchain is a "chain of blocks." A "series" is a set of data blocks that include a listing of information, while the "block" is considered as a group of information blocks that include the sequence of information [31]. A "series" is a sequence of data blocks that continue to develop over time, and a "block" contains a list of information. It will be complicated to modify information once it has been added to a blockchain (E, connected to chain records), making blockchains a unique means to provide authenticity beyond holding vital data.

Because blockchains are unregistered and widely used networks. They eliminate the need to consider groups, allowing peer-to-peer transactions at a rate that is not based on external control events, such as money, votes, or facts. These are the main characteristics of a social blockchain:

1. Shared: the ledger is spread over the entire network, escalating the rage.
2. It can't be modified: once the numbers are in the ledger, they can't be changed or erased.

3.3.4. Blockchain-based solutions and services in the media industry

Blockchain-based solutions and services in the media industry can revolutionize the way facts are produced and communicated while also contributing to non-informative information, in the long run, thanks to their power and distinctive branding. Here's how Blockchain could aid in the fight against misinformation. How will the blockchain era combat erroneous data? The issue of inaccurate information arises from both sides of the series of facts: the creative side - which includes information groups that provide news to editors, publishers, and writers, journalists, and editors or editors - and the reception feature, which is based primarily on non-ordinary readers. Because false information can be spread in a variety of ways, it's easy for evil actors to apply it on purpose. It's also difficult for ordinary people and experienced journalists to recognize false stories (in case you need to explore and improve your discovery skills). As a result, all participants must have a reliable method of validating the facts.

3.3.5. Conditions that must be met

On the one hand, everyone these days is a content writer. People, unlike media outlets, will soon be able to freely write and distribute a fraction of content without undergoing rigorous testing. It can lead to extensive dissemination of incorrect information, whether intentionally or unintentionally. Furthermore, the generation that used to purposefully produce false information - such as using artificial intelligence to make stories that are like stories - is rapidly developing and becoming more robust throughout the body, including negative occurrences. This occurs on social media platforms, such as "laptop applications that are routinely used to distribute false news on social media," and forces them to pursue advanced degrees. The cybersecurity firm, "27.7% of traffic on news sites had a bit concerned about computer interest, including deletion" by February 2020, implying that "bots utilize fear of Coronavirus, behind the intricacies of covid-19 non-public content." Deepfakes, also known as spoof audio and video, are created using this generation. Deepfakes, on the other hand, are rapidly being seen as a source of challenge because they are commonly employed by criminals while maintaining the arrival of unplanned content. How can the Blockchain help create a more secure and trustworthy system?

Organizations and governments are using Blockchain-enabled journalism to authenticate information, photographs, and video.

For all readers, the power of technology is harnessed to generate a consistent and shared file of visually appealing and authentic content. "Through 2023, around 30% of world news and video information could be verified with blockchain technology, as compared with the deep fax age. It collaborates with IBM archiving to create conceptual evidence to keep contextual records and nearly media images. The blockchain "would preserve a clear and consistent report on the origin of the image: when we modified it, who took it, who published it, and how it was utilized across the global media community," according to the company. According to popular perception, blockchain-based data structures and apps should generate all new data. Newsgroups must build their profiles and submit the appropriate agency IDs, such as name, license, legitimate drawings, and so on, to use blockchain-enabled applications. They could record content on the Blockchain and transmit it to other participants (authors, journalists, etc.) once they were registered. Registered editors should then improve the text. All adjustments can be written to the Blockchain, allowing the final student to sign a more elegant setting for all resources. It may give them more ability to determine whether or not material published or spread virally deserves to be accepted as reality. To counteract disinformation, however, addressing the initial part of the news by providing asset monitoring and validating the quality of the data is insufficient. Indeed, as mentioned in this article in a computer world, resolving a societal problem always takes more than a generation. In addition to the Blockchain, this necessitates students' awareness of the issue and willingness to take action. "Customers, on the other hand, are not interested in applying critical questions to assess whether the information is real or not - as long as it matches their downloads," says one expert. Blockchain community peer-to-peer and personal accountability are enticed by fake news. From the perspective of learning, various factors might influence people's views of what they are learning.

To begin with, the broader background of deteriorating media relations with authorities appears to provide a favorable precedent for propagating misleading information. People are more likely to associate with respectable organizations and add to their social circles. Alternatively, social media design tends to merge content from your friends and relatives with the same credentials into a single "information" feed, leading to confusion between genuine and subservient reviews. According to observations, a misconception is most likely to show awareness that land interest rates are dropping, owing to the enormous number of facts. Furthermore, behavioral science demonstrates that while making quick, spontaneous decisions, the human brain tends to rely on emotions. Non-traditional stories that use racism, for example. In line with our current views, there is a natural tendency to introduce more debt. Furthermore, leveraging social media to establish false commitments, false knowledge, and "false public consensus" promotes "false public consensus." A rigorous new study in 2016 revealed that "20 erroneous memory recordings by the year 2016 U.S. Presidential election garnered more engagement on Facebook than 20 election recollections from 19" news vendors.

These are the reasons why a fundamental individual bond can be used to assess a blockchain-based information device capable of significantly reducing the impact of fake news. According to the Kellogg School paper, "encouragingly, there may be evidence that when people are warned about their prejudice, they tend to lower themselves significantly," which means enabling people to pay for their education and sharing. Furthermore, allowing students to validate or deactivate content and enhance the quality of knowledge and integrity lays an obligation on the blockchain peer-to-peer network. It began with pixels and animations while disseminating Apple's major stories began to suffer challenges because it is much easier for software to examine pixels than phrases. However, when compared to articles, multimedia content makes up a minor portion of counterfeit content. It appears that every reader is looking for both licensed content and a well-tested online sharing, offer, and author. "An amazing social media site should give you incorrect information, but it's easier if that's what you choose to read," says Avivah Litan, vice president of research at Gartner. The following are some of the advantages of a Blockchain-based information platform:

Because the Blockchain can offer information, the community can determine whether or not the news is fraudulent or no longer available. The accuracy of the data will be determined by smart contract rules, which promote global consensus and transparency.

3.3.4. Information tracking

Blocked blockchain applications can demonstrate data authenticity from beginning to end, as well as in the future. It will prevent your students from reading incorrect stories. The following method was used:

a. Low-Level information method

The false information problem can be overcome with a low-level information platform. Furthermore, the lack of centralized statistics management does not guarantee a single point of failure. Spof (single point of failure) describes how a single laptop component can cause the entire machine to crash.

b. Immutable method

The content of the information, videos, or images recorded on the Blockchain cannot be modified, altered, or destroyed since it is immutable.

c. Blockchain

Blockchain is a strong generation that can provide a widespread solution to circumstances that necessitate the use of misleading information. We will reap the benefits and transparency of adopting Blockchain as a carrier because those issues are a significant part of the complete body's life.

3.4. Discussion

Is the Blockchain almost battling against incorrect data? The solution is certain to be found "shortly," but it may take some time with the largest volume of content on the internet. We are fortunate to have the time to check the information's veracity online. But what is a blockchain, and how can you draw one? We've got all you need to know about almost all blockchain and non-blockchain concerns right here. Blockchain is unquestionably a "chain of blocks." It's roughly a mile from the book's delivery, similar to a database. Instead of being handled by the government, the ledger is scattered across a few computers. The issue of non-fiction can be successfully addressed due to its traceability, transparency, and quality environment. Buzzfeed reported in 2016 that jewelry was being stored in the United States. I would have substituted fake diamonds for genuine diamonds. The report caused the stock to drop 7.7%, breached its recognition, and lost the trading business. In 2017, the Qatari state news agency reported that its Twitter account had been hacked, while hypocrites spread disinformation denigrating the characteristics of the Arab Gulf and the United States. As a result, Qatar's international neighbors cut connections with the country. Blockchain can give online readers a secure means to authenticate content and your availability. It can potentially alter the availability of content and the process by which it is distributed to communities, thereby resolving the problem of false news. By 2023, it is expected that Blockchain anti-'deep fake' technology would have verified up to 30% of the global announcement and video material. Unless the blockchain time can give you the information you are consuming, all online statistics will be exposed, and fraudulent information will be eliminated. As a result, to avoid being duped by incorrect information, we must consider before acting on what we find.

4. CONCLUSION

Blockchain can be characterized as a paid ledger period that can securely and permanently record transactions between participants. The blockchain fundamentally eliminates the need for mediators who were traditionally necessary to function as trusted third parties to confirm, record, and coordinate transactions by sharing information between many parties. False information and misinformation abound in all forms of social media and other online sources. It can have far-reaching

consequences on the community and brands, and the broader public if allowed uncontrolled. Startups are developing computers to assist newshounds or people in seeing and quantifying web material. Blockchain is a cutting-edge technology for verifying various types of transactions by sending test ledgers to several computers. A timestamp is attached to each transaction, including communication posts.

Future research in this field should focus on building and implementing blockchain-based frameworks designed specifically to counteract misinformation and incorrect information on digital platforms. These frameworks should include advanced features like automated verification algorithms, AI-powered fact-checking tools, and decentralized metadata tracking to assure the legitimacy and correctness of online information. Furthermore, more study is needed to address the scalability, energy efficiency, and cost-effectiveness of blockchain systems, making them suitable for mass adoption by startups, news organizations, and independent fact-checkers. Pilot initiatives involving blockchain developers, journalists, and social media platforms could yield significant information on practical applications and user acceptance. Furthermore, authorities and researchers should look at legal frameworks to ensure ethical use while protecting privacy and data security in blockchain-enabled systems.

REFERENCES

- [1] S. Paul, J. I. Joy, S. Sarker, A.-A.-H. Shakib, S. Ahmed, and A. K. Das, "Fake News Detection in Social Media using Blockchain," in *2019 7th International Conference on Smart Computing & Communications (ICSCC)*, IEEE, Jun. 2019, pp. 1–5. doi: 10.1109/ICSCC.2019.8843597.
- [2] M. C. Lacity, "Fake news, technology and ethics: Can AI and blockchains restore integrity?," *Journal of Information Technology Teaching Cases*, vol. 12, no. 2, pp. 121–134, Nov. 2022, doi: 10.1177/2043886921999065.
- [3] A. Qayyum, J. Qadir, M. U. Janjua, and F. Sher, "Using Blockchain to Rein in The New Post-Truth World and Check The Spread of Fake News," Mar. 2019.
- [4] A. Katal, J. Singh, and Y. Kundnani, "Mitigating the Effects of Fake News using Blockchain and Machine Learning," in *2021 2nd International Conference for Emerging Technology (INCET)*, IEEE, May 2021, pp. 1–7. doi: 10.1109/INCET51464.2021.9456205.
- [5] T. Alam, "IoT-Fog: A Communication Framework using Blockchain in the Internet of Things," Mar. 2019.
- [6] Fazal Rahim *et al.*, "Exploring the Art of Critique: A Narrative Review Approach to Dissecting Health care Literature," *Journal of Health and Rehabilitation Research*, vol. 4, no. 2, pp. 783–789, May 2024, doi: 10.61919/jhrr.v4i2.916.
- [7] G. B. Chand, "Narrative Inquiry: A Critical Examination of Its Theoretical Foundations and Methodological Applications," *Far Western Review*, vol. 2, no. 1, pp. 135–152, Oct. 2024, doi: 10.3126/fwr.v2i1.70514.
- [8] R. P. Loweth, "The Use of Narrative Methods to Generate Engineering Design Knowledge: A Scoping Literature Review," in *Volume 6: 36th International Conference on Design Theory and Methodology (DTM)*, American Society of Mechanical Engineers, Aug. 2024. doi: 10.1115/DETC2024-142275.
- [9] T. Alam, "Blockchain-Based Big Data Integrity Service Framework for IoT Devices Data Processing in Smart Cities," *SSRN Electronic Journal*, 2021, doi: 10.2139/ssrn.3869042.
- [10] F. J. García-Ull, "DeepFakes: The Next Challenge in Fake News Detection," *Anàlisi*, no. 64, p. 103, Jun. 2021, doi: 10.5565/rev/analisi.3378.
- [11] M. Arquam, A. Singh, and R. Sharma, "A blockchain-based secured and trusted framework for information propagation on online social networks," *Soc Netw Anal Min*, vol. 11, no. 1, p. 49, Dec. 2021, doi: 10.1007/s13278-021-00754-y.
- [12] M. Singh, A. Khadagi, S. Sheikh, and K. Gedam, "Fake News Detection: A Survey," *International Research Journal of Modernization in Engineering*, vol. 3, no. 3, pp. 1843–1847, 2021, [Online]. Available: www.irjmets.com
- [13] K. Shu, S. Wang, D. Lee, and H. Liu, "Mining Disinformation and Fake News: Concepts, Methods, and Recent Advancements," Jan. 2020.
- [14] P. Fraga-Lamas and T. M. Fernandez-Carames, "Fake News, Disinformation, and Deepfakes: Leveraging Distributed Ledger Technologies and Blockchain to Combat Digital Deception and Counterfeit Reality," *IT Prof*, vol. 22, no. 2, pp. 53–59, Mar. 2020, doi: 10.1109/MITP.2020.2977589.
- [15] A. Babar, A. Shukla, N. Jagtap, P. Chaudhari, and A. Mithari, "News tracing system using blockchain," *Int J Eng Appl Sci Technol*, vol. 5, no. 2, pp. 554–562, 2020.
- [16] S. ur Rehman, M. U. S. Khan, and M. Ali, "Blockchain-Based Approach for Proving the Source of Digital Media," in *2020 3rd International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)*, IEEE, Jan. 2020, pp. 1–6. doi: 10.1109/iCoMET48670.2020.9073820.
- [17] Z. Jaroucheh, M. Alissa, and W. J. Buchanan, "Trust-based Ecosystem to Combat Fake News," in *2020 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*, IEEE, May 2020, pp. 1–3. doi: 10.1109/ICBC48266.2020.9169435.
- [18] Z. Jaroucheh, M. Alissa, W. J. Buchanan, and X. Liu, "TRUSTD: Combat Fake Content using Blockchain and Collective Signature Technologies," in *2020 IEEE 44th Annual Computers, Software, and Applications Conference (COMPSAC)*, IEEE, Jul. 2020, pp. 1235–1240. doi: 10.1109/COMPSAC48688.2020.00-87.
- [19] F. Jurado, O. Delgado, and Á. Ortigosa, "Tracking News Stories Using Blockchain to Guarantee their Traceability and Information Analysis," *International Journal of Interactive Multimedia and Artificial Intelligence*, vol. 6, no. 3, p. 39, 2020, doi: 10.9781/ijimai.2020.06.003.
- [20] S. Huckle and M. White, "Fake News: A Technological Approach to Proving the Origins of Content, Using Blockchains," *Big Data*, vol. 5, no. 4, pp. 356–371, Dec. 2017, doi: 10.1089/big.2017.0071.

- [21] P. Agrawal, P. S. Anjana, and S. Peri, "DeHiDe: Deep Learning-based Hybrid Model to Detect Fake News using Blockchain ✱," in *Proceedings of the 22nd International Conference on Distributed Computing and Networking*, New York, NY, USA: ACM, Jan. 2021, pp. 245–246. doi: 10.1145/3427796.3430003.
- [22] Z. Shae and J. Tsai, "AI Blockchain Platform for Trusting News," in *2019 IEEE 39th International Conference on Distributed Computing Systems (ICDCS)*, IEEE, Jul. 2019, pp. 1610–1619. doi: 10.1109/ICDCS.2019.00160.
- [23] D. V. Voinea, "Blockchain for journalism-potential use cases," *Social Sciences and Education Research Review*, vol. 6, no. 2, pp. 244–256, 2019.
- [24] K. W. DiCicco and N. Agarwal, "Blockchain Technology-Based Solutions to Fight Misinformation: A Survey," 2020, pp. 267–281. doi: 10.1007/978-3-030-42699-6_14.
- [25] R. M. Murimi, "A Blockchain Enhanced Framework for Social Networking," *Ledger*, Apr. 2019, doi: 10.5195/ledger.2019.178.
- [26] M. Zimdars and K. McLeod, *Fake news: understanding media and misinformation in the digital age*. The MIT Press, 2020. doi: 10.7551/mitpress/11807.001.0001.
- [27] A. Affelt, "The Future of Fake News," in *All That's Not Fit to Print*, Emerald Publishing Limited, 2019, pp. 101–117. doi: 10.1108/978-1-78973-361-720191007.
- [28] M. Avital, A. Baiyere, A. Dennis, J. Gibbs, and D. Te'eni, "Fake news: What is it and why does it matter," in *The Academy of Management Annual Meeting 2020: Broadening Our Sight*, 2020.
- [29] S. Dack, "Deep fakes, fake news, and what comes next," *The Henry M. Jackson School of International Studies*, 2019.
- [30] A. Takyar, "Blockchain in Fake News-Transforming News Industry: Combating Fake News and Reaching to Its Origin," Leeway Hertz. Accessed: Dec. 31, 2024. [Online]. Available: <https://webisoft.com/articles/blockchain-fake-news/>
- [31] J. M. Burkhardt, *Combating fake news in the digital age*, vol. 53, no. 8. American Library Association Chicago, IL, USA, 2017.