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All user data is uploaded to and stored in centralized servers under the control of OSN companies as a result of data and service centralization. When the servers go down, users have trouble protecting their content on online social networks. Even worse, if the servers are breached, security information like passwords, security holes, and user addresses may be made public. Attacks using the same password on numerous websites give hackers quick access to the accounts of many users. Decentralization is essential for preventing any data security issues and safeguarding user information and login passwords. Because services are no longer dependent on centralized servers and data is maintained in a distributed way, decentralized OSNs can provide users with a safer and more in control social network environment where its owners have greater control over their privacy and information. Peer-to-peer networks, in which each node provides the service and stores a share of the data, are frequently used to operate decentralized OSNs.

#### A. Contribution

Aim of the study is to discuss the various applications based on block-chain in Social-Media and discuss some of the challenges. Our contributions are -

- 1) Surveyed existing literature works involving the use of blockchain in the field of social media.
- 2) Analyzed the different approaches used in the proposed solutions in those works, and have presented them in a simplified manner.

## II. LITERATURE SURVEY

Gyuwon Song et. al [1] A blockchain-based social media notarization service is presented in this study. Social media platforms have unquestionably become a popular means of communication with people all over the world since the introduction of smartphones. On social media, however, bogus news and maliciously created screenshots are constantly created and shared. Blockchain technology is a good platform for notarizing online activities since it can preserve data in a safe and unchangeable manner. The issue is how to validate the information for notarization. We suggest a design that uses blockchain technology to authentically archive social media content. An instant messaging scenario is described as a proof-of-concept based on the suggested strategy.

Guidi et. al [2] presented in the daily lives of many individuals nowadays, Online Social Networks (OSNs) play a significant role in communication on the planet. OSNs are online communities where users may connect with one another and interact, consume, create, and share content. However, they have a number of significant problems, such as fake news and privacy, which have been used as a catalyst towards a new decentralized solution. Online social media platforms powered by blockchain are decentralized platforms where users are compensated for their social media engagement using the Blockchain technology. Numerous BOSMs have been proposed, however it is unclear what advantages they actually offer or how malevolent users like bots and trolls will behave. The social interactions between people and bots in blockchain-based online social networks are suggested in this article.

Yuanzhu Zhan et. al [3] The development of new technologies has also spawned a brand-new type of social-media websites known as social-media enabled by blockchain, which are expanding in scope and user base. Therefore, the quick development of these blockchain-enabled social media companies demonstrates the need for a deeper understanding of the causes of this growth as well as the cutting-edge methods and business models used by companies in this growing sector. The paper explains the concept based model of blockchain-enabled social media that is helpful for understanding and explaining the best business strategy and actions of firm using the case of Pixie, the first fully operational decentralized social network for sharing photos and videos built on blockchain technology.

Panayiotis Christodoulou et. al [4] presented that in a world where security is a major concern, blockchain technology has paved the way for the development of decentralized apps. Every transaction ever made is documented here permanently. Some dubious sites have published phoney and alluring news articles over the years. Since there are no legal frameworks in place, it is impossible to confirm this story.

As a result, these untrustworthy sources are free to publish whatever they want, which in some circumstances even causes social unrest. Unsuitable news may now spread more fast than ever before because of social media and the ease with which it is now possible to access the internet. Fake news might occasionally be more appealing than the truth. People end up being misled as a result. We will describe a method to identify phoney cryptocurrency using the benefits of peer-to-peer network ideas found in Blockchain.

Deepayan Bhowmik et. al [5] presented that the blockchain model is used to create a distributed and impenetrable media transaction system. The current Distribution of multimedia does not maintain transaction histories or histories of content modification.

Examples include the distribution of digital copies of priceless artworks, creative works of art, and entertainment materials for exhibitions, gallery collections, and media creation workflow.

It's common to practice modifying original media for creative content preparation or manipulating it to create misleading propaganda. However, no reliable mechanism exists that can quickly recover either the transaction trails or the history of changes. To solve these problems, we provide a revolutionary multimedia blockchain infrastructure based on watermarking. Two pieces of information are included in the distinctive watermark information: a) a transaction-containing cryptographic hash: a) An picture hash that protects retrievable original media material; b) history (blockchain transactions log). After retrieving the watermark, some of it is forwarded to a distributed ledger to get the historical transaction trace, while the rest is utilised to identify changed or tampered-with regions. The paper discusses the conditions, problems, and confirmation of this notion.

Dongqi Fu et. al [6] detailed about the Decentralizing Privacy project at the MIT Media Lab describes a decentralized personal data management system that assures individuals own and control their data without the need for third-party authentication. In order to enforce the "Decentralizing Privacy" in this work, we use a stronger encryption technique from NTT Service Evolution Laboratory. We enhanced the previous approach by utilizing a Proof-of-Credibility Score and studied attack scenarios.

Faten Adel et. al [7] presented that Web 2.0 nowadays is all about bringing people together. which saw the creation of social media platforms and a concentration on application layer development There are several ways to think about web 3.0; some believe that the semantic web is what the future holds, while others believe that the virtual web is what the future holds. This essay will discuss the decentralized web, another way to see the web of the future. We should focus on finding solutions to the issues that these platforms and we as users have caused in order to improve the web. The decentralized web is concentrated on creating protocols and also the foundation technology that end users are not aware of. An overview of the difficulties facing the present web based technologies is given in this article. explains the distributed web and the equipment used to produce. that are currently under construction.

Nikolaos Polatidis et. al [8] detailed about this essay which makes a recommendation for creating safe social media environments for demographics that might be susceptible to outside influences. These may be people fleeing war-torn or unstable political environments who risk persecution at the hands of political opponents, or they may be young children who risk being targeted online by pedophiles and other cyber criminals. Recommender Systems are used in the system to connect users to subgroups based on their preferred topics of conversation and viewpoints. Block-Chaining technologies are used to provide a safe environment. The plan has difficulties since a third party must ensure the crucial issue of trust in the system. This company will have to confirm each subscriber's identity before creating secure user identities and member profiles that ensure users' anonymity. Utilizing blockchain technologies will also make it possible to keep track of user behavior and preserve the environment's credibility. Another factor will be the system's operating and construction costs. There are many successful deployments of blockchain technologies in daily life, therefore its reputation as being associated with cryptocurrencies shouldn't be seen as a negative thing.

Tsan-Ming Choia et. al [9] presented and concluded that social media analytics are essential for managing modern supply chains (SCOM). However, there are several methodological challenges when performing social media analytics (SMA) for SCOM. challenges. There are issues with data security, user privacy, and accuracy (false data, for example). Blockchain technology has various advantages based on which several innovative and diverse socialization platforms and applications have recently been invented and created. Motivated by the knowledge that SMA is crucial We investigate if and how the "blockchain technology backed social media" (BSM) platforms have evolved in recent years. The conventional social media's (TSM) inadequacy, and these factors. BSM would improve SCOM's social media analytics. Specifically, by evaluating articles from prestigious SCOM publications, we pinpoint the uses and constraints of SMA for SCOM.

Xiaohui Cui [10] presented about an "unorganized organization" which is social media. It can serve the same purpose as an organization without shared ideas and beliefs, a systematic and exact organizational structure, sophisticated methods of member development, and reliable funding for operations. With its unstoppable momentum and astounding development scope and pace, it is permeating people's political, economic, intellectual, and cultural spheres. It has altered how information is shared and seriously jeopardizes societal harmony. In the age of big data, personal information can be leaked as a result of analytical results based on social network data. The Prism event signaled a global awakening. Artificial intelligence-based social robots and the "water army" made an appearance. Fake news and rumors exploded. Events like the "Twitter Revolution" shook the nation. Therefore, it is a major duty to ensure the secure transmission, storage, use, and validity of personal social information. The study outlines the characteristics of social media, explores how they influence society, highlights the threat they pose to international information security, and suggests some controls and countermeasures for social media management.

Anandhakumar Palanisamy et. al [11] said that the next generation of connection depends on social media apps. Social media networks nowadays are concentrated, with a single private company managing the serious concerns with control and trust over the produced and disseminated material on the network.

In order to fulfil the privacy, robustness, and autonomy-related promises that proprietary social media platforms have so far been unable to keep, the ARTI-CONF project, which is supported by the European Union's Horizon 2020 programme, investigates a decentralised social media platform based on a novel set of reliable, resilient, and globally sustainable tools. The ARTICONF approach, a revolutionary collaborative peer-to-peer model giving an alternative to private vehicle ownership, is introduced in this study for a car-sharing use case application.

Emna Mnif et. al [12] detailed the next generation of connections depends on social media apps. Social media networks nowadays are concentrated, with a single private company managing the serious concerns with control and trust over the produced and disseminated material on the network. To fulfill the privacy, robustness, and autonomy-related promises that proprietary social media platforms have so far been unable to keep, the ARTICONF project, which is supported by the European Union's Horizon 2020 program, investigates a decentralized social media platform based on a novel set of reliable, resilient, and globally sustainable tools. This study introduces the ARTICONF strategy, an innovative collaborative peer-to-peer paradigm for a car-sharing use case application that provides an alternative to private vehicle ownership. We outline the car-sharing social media application prototype, demonstrate it with real data, and show how the various ARTICONF tools support it in a realistic situation. Majorly, the benefits and advantages of blockchain are discussed more as compared to disadvantages of users on Twitter Application. The feelings which include positive and deep emotions dominate among users on various platforms. Shortly, it implies that blockchain users have more awareness and security based considerations. Therefore, this paper suggests and comes up with a model which includes innovative and decentralized technology and also includes the analysis of content generated by users.

Barbara Guidi et. al [13] detailed about the OSNs that are becoming a significant part of lot of people's everyday lives around the globe. OSNs are online communities where users may connect with one another and interact, consume, create, and share content. However, they have a number of significant problems, such as fake news and privacy, which have been used as a catalyst toward a new decentralized solution. Online social media platforms powered by blockchain are decentralized platforms where users are compensated for their social media engagement using Blockchain technology. Numerous BOSMs have been proposed, however, it is unclear what advantages they actually offer or how malevolent users like bots and trolls will behave. To highlight characteristics that might be employed in bots detection approaches, this research presents an investigation of the social behavior of individuals and bots in social network. Steemit is the most representative platform of its kind, thus we utilize it as a case study. Results indicate that bots can be identified using publicly accessible features since they are, on average, substantially more active than human users.

Syed Shahbaz Hussain et. al [14] said about blockchain is the newest innovation in the fields of the internet of things, social media, and cloud computing. Blockchain has quickly become a force to be reckoned with thanks to its reputable uses and rapid development. However, the application of blockchain is not just restricted to bitcoin or other cryptocurrencies. This paper clarifies blockchain requirements outside of bitcoin. In addition, this study offers insights into the mechanics, problems, and evolution of blockchain technology based on a literature review. The difficulties or difficulties in applying blockchain technology to real-world applications were identified in this study. The main issue that needs to be solved is how to securely utilize blockchain technology on small-scale applications. The suggested consensus technique would be beneficial for the safe deployment of the blockchain in small-scale projects or applications.

Shivam Saxena et. al [15] presented and concluded about the users now have an unmatched opportunity to create and analyze data thanks to social networking sites. Social Media Analytic (SMA) has emerged as a crucial tool for managing Supply Chain Management (SCM) operations as a result of the rising usage of social media, especially among teens. However, there are several significant problems with the processing of the data acquired through various social-media sites and networks based on traditional technology. With the innovation of decentralized blockchain technology, various notable social media networks were created. In light of these problems, this study tries to clarify how blockchain might revolutionize social media by addressing its shortcomings. Along with future research prospects, certain well-known social media apps with blockchain integration are also covered.

Tareq Ahram et. al [16] presented about the effective use of mobile, IoT (Internet of Things), social media, analytics, and cloud technologies to create models for smarter decisions has resulted in global efficiencies and tight consumer interactions. The advent of blockchain is transforming the digital sphere by offering a fresh viewpoint on system security, resilience, and efficiency. Despite being initially made famous by Bitcoin, Blockchain is much more than a base for digital money. It offers a safe way to conduct any form of transaction or exchange of goods or services. Trusted relationships are becoming more and more important for industrial growth, yet expansion is being hampered by rising regulations, cybercrime, and fraud.

Blockchain will facilitate more agile value chains, speedier product innovations, stronger customer relationships, and more rapid IoT and cloud technology integration to address these difficulties. Further, With a trustworthy contract that is managed without the involvement of outside parties who might not directly bring value, blockchain offers cheaper transaction costs. Smart contracts, engagements, and agreements with built-in, strong cybersecurity elements are made possible.

This study aims to lay the groundwork for presenting and illustrating the use of Blockchain technology across many industrial applications. The IBM Blockchain effort is used to codify and create a Health chain, an application for the healthcare sector. Wide-ranging industries including finance, government, and manufacturing can use the concepts when security, scalability, and efficiency are required.

Walid Al-Saqafa et.al [17] presents that Although a lot has been published about blockchain applications and future possibilities in the FinTech sector, little study has been done to examine how the user-centric paradigm of blockchain technology might enable a variety of applications outside of banking. By examining blockchain technology's possible uses and their limitation

Quanqing Xu et.al [18] presents that The network has undergone significant change as a result of blockchain technology development, and many applications may now be distributed and decentralized without sacrificing security. The Ethereum Virtual Machine is a runtime environment for running smart contracts on the open-source Ethereum blockchain technology (EVM). Apps created on Ethereum are frequently referred to as Decentralized Applications (DApps) since they are based on the decentralised EVM and its smart contracts. Meanwhile, distributed data storage is rapidly growing alongside blockchain technology. The goal of distributed storage development is to reduce the cost of server-side hardware while also improving data availability. The InterPlanetary File System (IPFS) is a protocol for distributed storage. IPFS saves unchangeable data, reduces duplication, and gathers address data for storage nodes to use when searching for files throughout the network.

Georgios Drakopoulos et.al [19] presents that In many ways, blockchain technology is a best example of disruptive technology. With the development of blockchains, the necessity for a private entity acting as an intermediary between stakeholders in any kind of transaction, including procurement of goods and services, shareholder or political voting, crowdfunding, financial transactions, logistics and transport management, is becoming obsolete. The proof system, or technique for properly authenticating numerous blockchain stakeholders' claims, is a crucial component of the blockchain stack. As a result, trust can be successfully established using only computational methods in a truly trustless setting. This is crucial when creating smart contracts digitally since clauses must be rigorously followed by intelligent agents. Review of the most well-known proof techniques recently put out in the scientific literature. Furthermore, the use of smart contracts with blockchain technology is highlighted. The latter permits clause renegotiation, hence improving transactional flexibility. As a real-world example, a simple smart contract written in Solidity, a high level language for the Ethereum Virtual Machine, is presented.

Paul Rosler et.al [20] presents that Group communication and one-to-one communication are the two applications of secure instant messaging. While the first type of secure group communication via instant messaging has recently drawn a lot of interest (Frosch et al., EuroSP16; Cohn-Gordon et al., EuroSP17; Kobeissi et al., EuroSP17), little is known about the cryptographic techniques and security guarantees of such communication. We first offer an extensive and realistic security model to frame how we will approach an evaluation of group instant messaging technologies. To capture pertinent characteristics for communication in dynamic groups, this model incorporates security and reliability objectives from other related literature. Thus, the definitions take into account their suitability for quick message transmission. We examine Signal, WhatsApp, and Threema, three popular real-world protocols, to demonstrate their usefulness. By utilizing our model, we demonstrate several shortcomings concerning the security definition.

M. Hassan Shirali-Shahreza et.al [21] presents that Numerous facets of human existence have changed as a result of the invention and globalisation of the Internet. The Internet also altered human connections. One of the new features created following the invention of the Internet is chat, which is well-liked by users, particularly young people. Text messages are used to communicate in chat rooms. New abbreviations are created for a variety of words and phrases in chat rooms due to the requirement for speedy typing of the term as well as the huge volume of sentences that are exchanged between members. This new dialect is called Text messaging. Furthermore, a variety of ways for secret communication have been developed as a result of the concern about the data privacy and security, in particular, privileged connections. The current paper depicts a novel technique for communicating privately over chat by creating and using shorthand by leveraging the SMS texting language, encryption process. Java programming has been used to implement this documentation.

MReshma Lal et.al [22] presents that This paper explains how hardware security features on computing platforms like laptops, tablets, and smartphones can be used to improve the security of VoIP applications. We detail how to create these applications using the security provided by processor-based security technology, which enables software developers to keep control of the deposit by establishing trusted domains inside of applications.

Sensitive code and data can be housed using this processor security technology without running the danger of being viewed or altered by malware present in other system components. The final VoIP apps would more effectively satisfy the stringent security requirements of business and government sectors for real-time digital information sharing. The final VoIP apps would more effectively satisfy the stringent security requirements of business and government sectors for real-time digital information sharing.

The United States Department of Homeland Security and the United States Air Force Academy funded this research project, and the team used the findings to implement a practical video chat application and study ways to improve the security of a video conferencing application by utilizing security features offered by the processor and media processing hardware.

ERANGA BANDARA et.al [23] presents that Blockchain is a peer-to-peer distributed storage system that securely keeps a chronological list of transactions. Blockchain's decentralized trust ecosystem helped it gain popularity across several industries. Big data and blockchain integration provide several difficulties. The current public blockchain does not scale for huge data storage and administration, it does not allow high transaction throughput, it does not offer keyword-based search and retrieval, and so on. As a result, integrating current blockchain systems with big data applications is challenging. In this study, we suggest a brand-new blockchain storage system called "Mystiko" that is constructed on the database known as Apache Cassandra distributed databases to support huge data. High transaction throughput, high scalability, full-text search functionality and high availability are all supported by Mystikal. ed. We enhance the safety and security of huge data with Mystiko. deeper data analyses because it is appropriately structured. use large amounts of data to operate more easily

Mahamat Ali Hisseine et.al [24] presents that Social media has changed how people communicate on a worldwide scale by offering a robust system for sharing ideas, starting commercial deals, and putting out fresh professional concepts. Social media use, however, has several drawbacks, including false information, a lack of efficient content filtering, Security vulnerabilities, identity fraud, biased media, and copyright infringement. Numerous research have suggested that a decentralized technology known as blockchain can overcome the above vulnerabilities and issues. Blockchains can offer security, confidentiality, tamper-proofing, traceability, control, and oversight over information.

Barbara Guidi et.al [25] presents that A decentralized, quick, and effective file system that can connect all devices worldwide is what the Interplanetary File System (IPFS) aims to create. Its decentralized nature, in particular, makes it practical to use for other decentralized applications, including Decentralized Online Social Networks. In order to store larger resources like films, a number of Blockchain Online Social Networks adopted IPFS, allowing them to advertise themselves as censorship-free platforms. We examine the suitability of IPFS as a data storage option for decentralized social applications in this paper, outlining its benefits and drawbacks in light of our case study. It is because of the so-called "pinning" services that are built on top of IPFS that we are faced with the challenge of data storage and persistence. We also offer a number of analyses pertaining to the IPFS nodes located by our crawling node's physical location, their communication protocols, and their identities.

Sun Jianjun et.al [26] presents that The dependability of information transfer, sharing, and preservation has emerged as a prominent difficulties in data sharing as a consequence of the Internet's exponential growth. In order to establish and ensure security of data, and protecting user rights, and processing data and information rapidly, this article integrates the decentralised and irreversible characteristics of the Ethereum blockchain with Inter Planetary File System which is storage technology and decentralized in nature. A platform for data sharing is also envisaged. Presently, put together a great technological application platform for information sharing.

LinFei Shi et.al [27] presents that both the price of data storage and the speed of data download may be significantly improved. Currently, centralised backup is mostly used by IPFS-based distributed storage systems. Although centralized nodes can offer high data availability, they will be single-fault peers and end up becoming the performance bottleneck of the system. This article suggests a high-availability data backup technique based on IPFS nodes' QoS and interest. The experimental findings show that our suggested technique is more efficient and useful than the currently used methods.

Mudabbir Kaleem et.al [28] presents that Due to various security flaws and assaults on contracts written in Solidity since the system's creation. By offering a language that prioritises ease of use, auditability, and security, Vyper seeks to address these issues. We present a survey where we examine the prevalence of well-known and often encountered Solidity vulnerabilities in the Vyper development environment. Based on their state in Vyper, we assess each of these vulnerabilities individually and put them into five categories. Our survey is, as far as we are aware, the first effort to investigate security vulnerabilities in Vyper.

MD. Soharab Hossain Sohan et.al [29] presents that despite having many unique advantages, this decentralized system cannot be adopted by other platforms since it cannot scale like centralized currency systems. The insufficient scalability of the current blockchain technology is the driving force behind this study. This research suggests a theoretical approach to boost throughput and decrease storage dependence.

To get around storage obligations and boost performance, a distributed storage technology called IPFS is de-ployed. By substituting references to the main block for the original block in the ledger, the dual-blockchain approach performs the essential functions of the blockchain.

SARWAR SAYEED et.al [30] presents that Decentralized blockchains contain programs known as smart contracts that operate in accordance with triggered commands. A smart contract functions similarly to a conventional agreement but does not require a third party's involvement.

Smart contracts have the ability to launch their commands autonomously, doing away with the need for a governing organization. Smart contracts are created differently from regular software since blockchains have an immutable property. A smart contract cannot be changed or updated for security fixes once it has been published to the blockchain, which encourages developers to use robust security measures before release to prevent potential future exploitation. Based on the attack justification, we divide blockchain exploitation strategies into four groups in this paper: attacks on consensus protocols, flaws in smart contracts, malware running on operating systems, and fraudulent users. Then, in order to assess the true impact of smart contract technology, we concentrate on smart contract vulnerabilities and examine the seven most significant attack methods. We demonstrate that even the ten most popular tools for identifying smart contract vulnerabilities still have known flaws, giving users a dangerously false sense of security. We address suggestions and potential directions for further research as we draw to a close this paper to move closer to a safe smart contract solution.

Dr. Muhammad Manshad Satti et. al[31] present that a social media strategy that makes use of tweets, emails, and Facebook postings can be developed on a private social networking site. This Member states or social-political groups can communicate with their residents and neighbors through branded websites. a more significant manner, enabling them to completely develop their connection at the public level with other peer nations and transform their admirers grew from passing acquaintances to fervent ones. The suggested All of Facebook's capabilities, including the option to identify member countries with groups, will be available on a private social networking site. They can use anything they need, such as chat rooms and conversational sub-sites. The member-only private social networking site States in the Community will construct a brand-new style of the social corridor. It is well-acknowledged that people want to interact and connect in new and more meaningful ways. By enabling and sharing discussions that are effortless but not automated, Private Social Media Platform fills a gap in the present social spectrum. We will outline the top designers, programmers, and visionaries in our initial research work who will collaborate to assist define the demands of the following generation by setting up this platform.

Reza Shokri Kalan et.al [32] presents that More individuals are utilizing the web and mobile applications to their advantage because of the rapid growth of mobile devices. Social networking is now available to us thanks to technology, which was not conceivable for humans in the past. New types of multimedia present both enormous opportunities and difficulties. Even though social media has many benefits, using it frequently might lead to addiction. Additionally, disclosing private data to unidentified individuals exposes users to privacy and security problems. This study has three goals in mind. Investigate social networking ethics first in a social situation, regardless of cultural background. The second issue is data fixation and big data. The study concludes by outlining the benefits of web 3.0 and decentralized architecture. Decentralized architecture can offer a safe space for social networking and data storage where individuals can manage their own ownership and privacy. In a decentralized application like Web 3.0, users are in charge of their data and identities.

Yaroslav Pastukh et.al [33] presents that The report takes into account the need to raise the security level of accounts on social media sites like Facebook, YouTube, and Instagram. The development of social media security level indicators is modeled mathematically. A chatbot is created using the discovered mathematical model. The created chatbot makes it possible to gauge an account's level of security on social media. It develops suggestions for how to increase the security of social media accounts as appropriate.

### III. CONCLUSION

This paper examines the potential applications of blockchain. important for enhancing the safety, dependability, and accessibility of social networks. This technology allows us to build a shield. prevent alteration and harmful assaults on the private information of users. Additionally essential to the procedure's success of efficiently and easily handling such data. One of the technologies employed is smart contracts. Utilizing blockchain's excellent qualities to fulfill diverse needs and user-related inquiries. Every user should be capable of using the software and data contained in a distributed without jeopardizing the integrity of the database. Various relevant papers of research on blockchain technology are surveyed and how blockchain is being utilized in the sphere of social media and mapped all of the relevant research is into a literature review.

The ultimate goal of this paper was to examine the research topics of blockchain technology in social media, along with the key impacts this technology will bring to the field. Our findings show that blockchain has generated a lot of interest and attention to be implemented as a platform to improve the authenticity and transparency of social network data.

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