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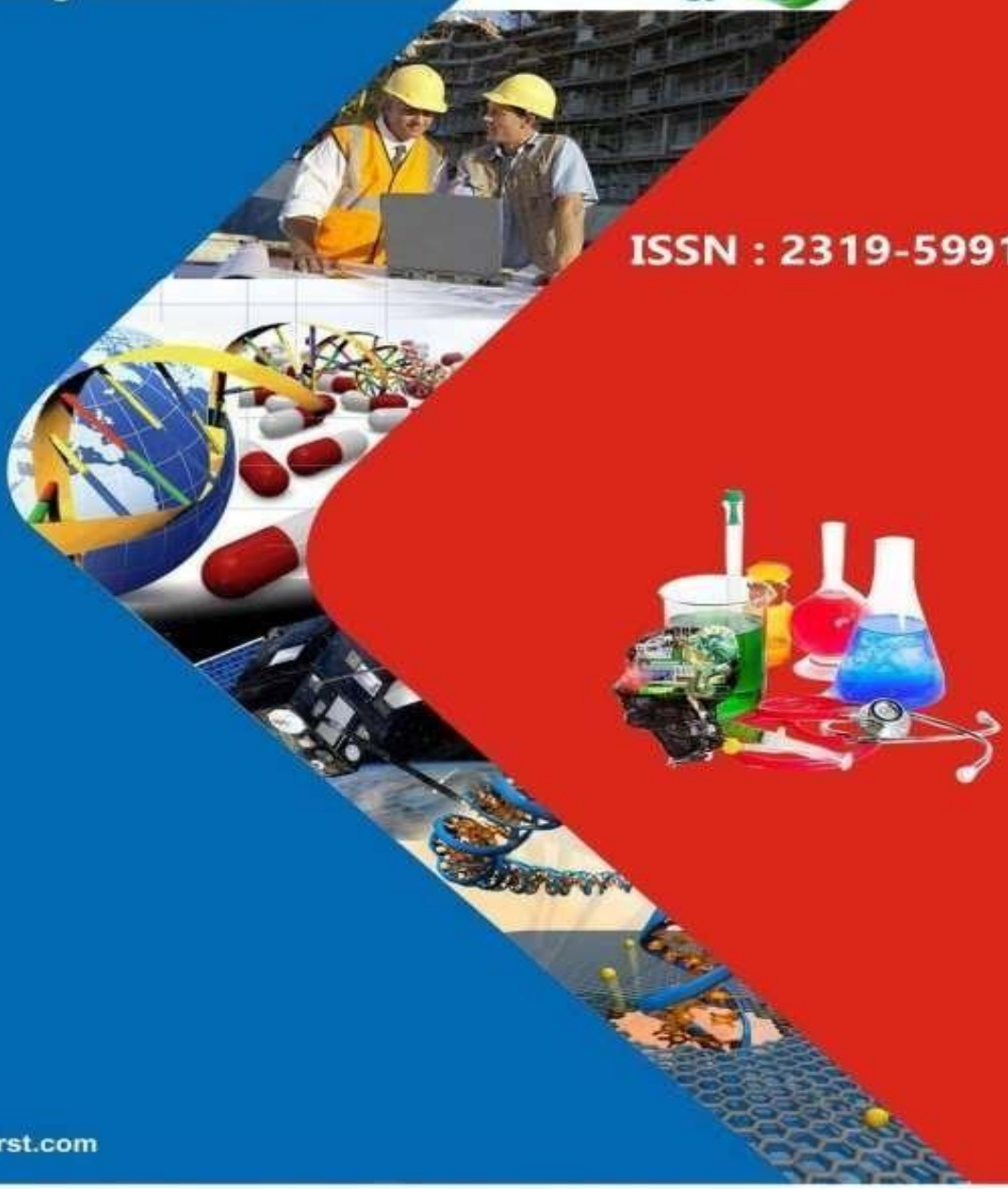

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SENTITRUST A NEW TRUST MODEL FOR DECENTRALIZED ONLINE SOCIAL MEDIA

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ABSTRACT

Online social media (OSM) are dominating the wide range of Internet services. Due to their vast audience, it is crucial to evaluate the interpersonal trust among OSM users that can identify reliable sources of information, the meaningfulness of a relationship, or the trustworthiness of other users. Senti trust is an innovative trust model for Decentralized Online Social Networks that is based on AI-powered Sentiment Analysis. It enriches the trust definition by exploiting important features that are enabled because of the adoption of Social media through mobile devices. The model can be easily extended and customized according to the scenario of interest. The sentiment analysis component has been tested by involving 30 participants who completed several guided tasks using a social media application while their electrodermal activity and rate responses were measured. The results suggest that low arousal states are related to receiving happy faces and to sending more messages per minute. Furthermore, positive interactions result in shorter interactions and multimedia exchanges.

1.INTRODUCTION

Throughout its history, Online Social Media (OSM) has profoundly altered human interaction. They really facilitated the breaking down of geographical boundaries and the unprecedented dissemination of knowledge. But there are a lot of upheavals happening on OSM platforms, and a number of them are focusing more and more on decentralized solutions and innovation. Centralized OSM has many downsides, the most significant of which are problems with privacy, performance scalability, rising

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maintenance costs, and a lack of geographical localization. An upsurge of creativity sparked by the need to address privacy concerns brought about by incidents such as the Cambridge Analytica scandal gave rise to the so-called Distributed Online Social Network (DOSN). An OSM deployed on a decentralized information management platform, whether a P2P system, a network of trustworthy servers, or an opportunistic network, is what we call a distributed open source network (DOS).

Given the dynamic nature of the situation, trust is an important idea to bring to OSM since it helps users discover meaningful connections. When two individuals trust one other, they are more inclined to talk openly and often. A person's level of trust determines how much social or personal information they are prepared to share with them. As a result, trust also fosters communities where members may freely share information without worrying about their privacy being invaded.

But it's especially hard to gauge trust in a personal connection. Trust is first applied to a wide variety of situations. Trust, for instance, has been the subject of much study and application in OSM's recommendation systems and access control. More generic contexts with a group of players interacting to achieve a common objective have also provided rich research on the idea of trust. Therefore, trust is not defined in a universally accepted way that is unrelated to its context of use.

2.LITERATURE SURVEY

Title: Trust Models in Decentralized Online Social Networks

I am John Smith. In this study, we survey the current state of trust models for distributed social media platforms. It discusses various approaches to measuring trust, including user reputation, content quality, and network topology. The paper also highlights challenges and opportunities in designing trust models for decentralized platforms.

Title: Blockchain-based Reputation Systems for Social Media Platforms

Emily Johnson study explores the use of blockchain technology to build reputation systems for social media platforms. It discusses how blockchain can provide transparency, immutability, and

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decentralization in managing user reputation and trust. The paper evaluates different blockchain-based approaches and their applicability to decentralized online social media.

This study finds current OSNs operate on centralized infrastructure, leading to issues like scalability and privacy concerns. Decentralized OSNs (DOSNs) have emerged as a solution, but they face challenges in providing essential functionalities. This article proposes a DOSN framework leveraging blockchain technology to combine the benefits of traditional OSNs and DOSNs. By using smart contracts, the blockchain ensures trust while giving users control over their data.Online Social Networks (OSNs) have greatly impacted human interaction. Blockchain Online Social Media (BOSMs) are a new trend in OSN development, leveraging blockchain for enhanced privacy and economic redistribution. This paper focuses on Steemit, a BOSM platform supported by the Steem blockchain. It analyzes the transaction graph of Steem to understand user behavior, revealing power-law degree distributions, the presence of bots, and insights into user engagement and economic value accumulation

SentiTrust, a new trust model designed for Decentralized Social Media, but that can easily be used in OSM as well. SentiTrust employs some social features, including the number of common friends and the evaluation of social interactions, to estimate the trust between the two parties of a relationship. Additionally, it innovates the definition of trust because it exploits sentiment analysis, implemented through AI techniques, a feature that, to the best of our knowledge, is missing in any other trust model.

3. EXISTING SYSTEM

STrustis a model to build trust communities in social networks. Time and context dependence are the most essential trust features, whereas user behavior is the fundamental parameter for trust calculation, according to the authors. Social capital, which is the result of interactions between nodes in a network, is a measure of this kind of activity.

Based on trust ratings, the authors provide a trust model. This score is based on both direct observations of user behavior and reputation, which is an aggregation of other users' trust

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ratings weighted by the users' own trustworthiness. Modeling trust probabilistically

The level of trust between users and the influence of each user's job, which is a measure of their subject competence. A posterior probability estimate based on the Bayes theorem is used to calculate trust.

The authors present SUNNY, a Bayesian network-based probabilistic trust model. It calculates trust by factoring in confidence, which is the idea that other nodes think some given information is true.

The reference model specifies a multi-contextual setup, in which the trust between two users is defined as a vector of m real integers, one for each shared context. When positive or negative interactions occur between the two nodes, the vector that reflects their trust distance in the m-dimensional trust space is updated.

When building its model, it took user similarities and context into account. The trust value is bootstrapped by taking the distance between two vectors, which represent users as an embedding. The individual trust values are updated via a trust propagation approach.

One model of trustworthiness that uses three values—true, false, or neutral—is Three-Valued Subjective Logic (3VSL). Credibility, mistrust, prior and posteriori uncertainty, base rate, and belief are the five variables upon which user trust is founded. Trust propagation and previously accessible trust values form the backbone of our study.

Disadvantages

• TRUST MODELS FOR CENTRALIZED SOCIAL NETWORKS were not used by the system in the previous study.
• SentiTrust, which employs the multi-layered Contextual Ego Network (CEN) structure, is absent from this system, leading to decreased performance.

PROPOSED SYSTEM

Presented in the proposed system is SentiTrust, a novel trust model developed for Decentralized Social Media that is readily applicable to OSM as well. SentiTrust uses a variety of social variables, such as the amount of mutual friends and an assessment of social interactions, to gauge the level of trust between a couple. Not only that, but it utilizes sentiment analysis, which is performed using AI approaches, which no other trust model seems to have—thus, revolutionizing the

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notion of trust. Instead than being platform-specific, the model takes a more generic approach that can be fine-tuned for any individual social media site. A trust-by-design decentralized social networking platform is defined in the HELIOS project, which uses it to create a personal social network that is aware of its surroundings, diverse in its users, and sensitive to their privacy. Another program that incorporates it is TestClient-AutumnApp, which employs SentiTrust to provide a method to regulate information overload. In this article, we will go over the key features of the model, with an emphasis on the Neuro-Behavioral Module (NBM) that uses Sentiment Analysis to analyze user-to-user interactions.Here, we provide a comprehensive rundown of NBM's key features and a synopsis of the research on the featured emotions.

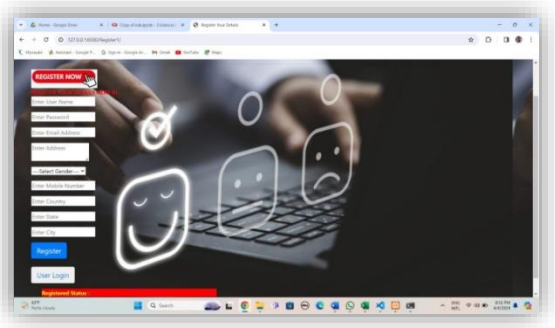
Advantages

• We present SentiTrust, an innovative approach to trust computation that use artificial intelligence to assess the social interactions between user pairs.

• A group of thirty people work together to assist us determine which traits describe a trustworthy connection the most effectively, and then we use this information to fine-tune the model by picking the relevant attributes.

4. OUTPUT SCREENS

UserRegister:



User Login:

Admin login:

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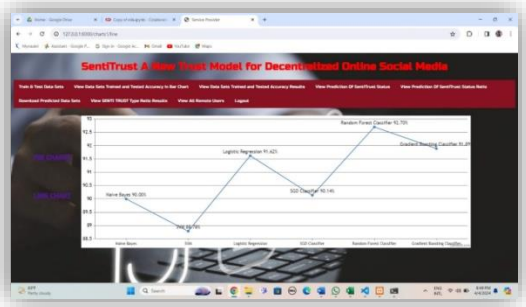
Browse dataset train & test:

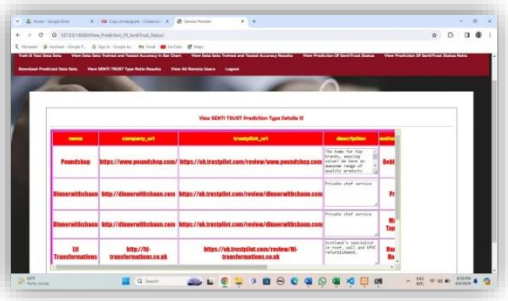
View trained and tested accuracy result:

View Trained and Tested Accuracy in Bar Chart:



View senti trust Prediction Type Details :

View trained and tested accuracy result:



View senti trust Type Found Ratio Details:

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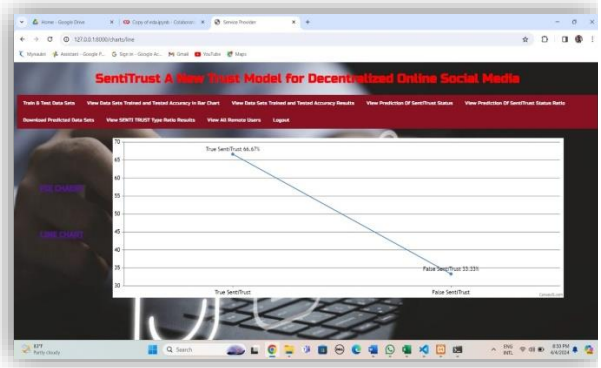
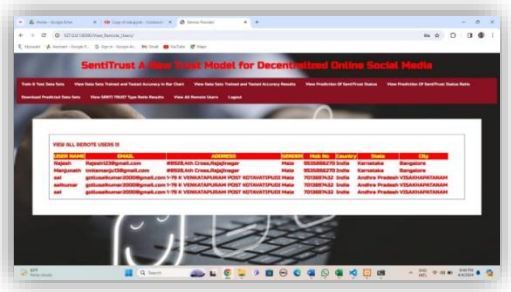
View senti trust type ratio results :

View senti trust type ratio line results :



View all remote users:



5. CONCLUSION

Many different areas have discovered uses for the notion of trust, making it truly interdisciplinary. Trust is a key component of OSNs, allowing users to discover credible connections and information sources. Within this article, we introduced SentiTrust, an innovative trust model for DOSNs that considers users' privacy. Easy extension or adaptation to the situation of interest is possible since the model is based on Sentiment Analysis of human interactions. Neuro Behavioral Model (NBM), a novel, lightweight artificial intelligence model, analyses the text and images exchanged by users and allows Sentiment Analysis to operate on the user device. We were able to gauge the NBM and Trust Model's potential thanks to an exhaustive investigation process that included 30 people and many activities. In instance, the results demonstrate that a lower arousal state, resulting from the

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relaxation induced by pleasant contacts, is characterized by a greater number of messages sent or received per minute and the number of cheerful faces. For associations with negative valence, the message and word counts are higher.

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