Paper Title: NFT as a proof of Digital Ownership-reward system integrated to a Secure Distributed Computing Blockchain Framework

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1 Summary

1.1 Motivation

This paper presents a blockchain-based solution using Hyperledger Fabric and Non-Fungible Tokens (NFTs) to enhance secure data transmission and management. The research demonstrates the feasibility of this decentralized system in safeguarding digital assets and enabling secure workflows.The research is motivated by the need to address cyberattacks and data breaches, aiming to create a secure data management system leveraging blockchain technology with a focus on data integrity and ownership.

1.2 Contribution

The paper contributes a novel system that combines blockchain, NFTs, and decentralized file storage to secure digital assets in a decentralized environment.

1.3 Methodology

The methodology includes system registration, user enrollment, NFT minting, data access, transfer, and burning processes. Extensive simulations and benchmarking evaluate the system's performance under various scenarios.

1.4 Conclusion

The paper concludes that the proposed system offers secure digital asset management with scalability, modularity, self-governance, privacy, and security.

2 Limitations

2.1 First Limitation

The system's performance and scalability limitations become evident when handling a high volume of data. Large-scale data management might strain the resources and slow down the system.

2.2 Second Limitation

As demonstrated in the benchmarking results, resource-intensive operations, particularly when dealing with large files, pose a significant limitation. The system may require substantial computational resources and time to process such data.

3 Synthesis

The paper's ideas hold potential for various industries by ensuring data integrity and security. Future work could involve system integration, NFT and smart contract extensions, new consensus mechanisms, and economic tokenization, broadening the system's applications.