Submission Summary

Conference Name

International Conference on Artificial Intelligence, Communication Technologies and Smart Cities

Track Name

Artificial Intelligence

Paper ID

447

Paper Title

Blockchain for Pharmaceutical Supply Chain Integrity: A Decentralized Approach to Combat Counterfeit Drugs

Abstract

This study presents a blockchain-based solution for tracking
the pharmaceutical drug supply chain, aimed at enhancing transparency, security, and authenticity from the production stage to the final sale. Utilizing Ganache for blockchain simulation and MetaMask for account management, we create a decentralized ledger that immutably records each transaction in the drug's lifecycle. From the sourcing of raw materials to manufacturing, distribution, and retail, every stage is tracked,
allowing authorized participants to update and monitor the drug's movement in real time. Smart contracts automate the verification process, ensuring that predefined conditions are met at each stage of the supply chain. This system not only ensures the integrity of the supply chain but also provides a reliable audit trail for regulatory authorities, reducing the risk of counterfeit drugs. End users, such as consumers and pharmacies, benefit from the ability to verify the authenticity and safety of the drugs they purchase, contributing to a more secure and trustworthy pharmaceutical ecosystem.

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Submission Files

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