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AgriTrustChain: An AI + Blockchain Powered Supply Chain System

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Abstract: *Agricultural supply chains often suffer from lack of transparency, price manipulation, and inefficient communication between farmers, distributors, and consumers. Small and marginal farmers are especially affected due to the presence of multiple intermediaries and the absence of a trusted system to track product origin and pricing. This paper presents AgriTrustChain, an AI and blockchain-powered agricultural supply chain management system designed to enhance trust, traceability, and decision-making across the entire supply chain.*

The proposed system integrates Artificial Intelligence (AI) to analyze agricultural data such as crop demand, pricing trends, and supply patterns, helping farmers make informed decisions and reduce losses. Blockchain technology is used to securely record transactions, ensuring data immutability, transparency, and product traceability from farm to market. Each stakeholder, including farmers, distributors, and retailers, interacts with the system through a secure digital platform, eliminating data tampering and unauthorized modifications.

AgriTrustChain is implemented using a web-based architecture with modern technologies, providing real-time access to supply chain information. Experimental evaluation demonstrates improved trust among stakeholders, better price fairness, and enhanced visibility of agricultural products. The system offers a scalable and cost-effective solution to strengthen agricultural supply chains, empower farmers, and promote sustainable agricultural practices.

Keywords: *Agricultural*

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