عنوان مقاله:

Integration research of blockchain and social networks in rural management systems under fuzzy cognitive environment

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خلاصه مقاله:

This study investigates integrating and optimizing an intelligent rural management system leveraging advanced technologies, including the Internet of Things (IoT), blockchain, and social networks. Initially, it identifies and scrutinizes prevailing issues in rural development processes, emphasizing the role of rural cultural dissemination, with a specific focus on the impact of social networks. Subsequently, by incorporating fuzzy set theory and adopting an enhanced blockchain consensus algorithm—the Byzantine Fault Tolerance (BFT) algorithm— a comprehensive rural management system is established, combining fuzzy sets and blockchain. Lastly, an intelligent traffic management system is developed to address logistics and distribution challenges in rural revitalization, facilitating efficient interurban delivery. The system automatically invokes the Matlab dynamic link library and employs a hybrid genetic algorithm to plan delivery routes. This study presents key findings on implementing an intelligent rural management system incorporating fuzzy sets, blockchain, and IoT technology. The system notably enhances transparency and traceability in agricultural production and supply chain processes, optimizes logistics and distribution efficiency, and reduces operational costs through intelligent management techniques. Additionally, the integrated application significantly bolsters consumer trust in the quality and safety of agricultural products, leading to heightened overall user satisfaction.

کلمات کلیدی:

Fuzzy Set Theory, Blockchain, physical information system, rural management system, social network, Internet of Things

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