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Securing Health Monitoring in IoT with Blockchain-Based Proxy Re-Encryption

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Abstract : The devices with sensors that can monitor your temperature, heart rate, and other vital signs and link to the internet, known as the Internet of Things (IoT), have completely transformed the way we control health. Providing real-time health data, these sensors improve diagnostics and treatment outcomes. Security and privacy matters when IoT comes into play in healthcare. Cyberattacks on centralized database systems are also a problem. To solve these challenges, this project uses blockchain technology coupled with proxy re-encryption to secure health data. ThingSpeak IoT cloud analyzes the collected data and turns them into blockchain transactions which are safely kept on the DriveHQ cloud. Transparency and data integrity are ensured by blockchain, and secure data sharing among authorized users is made possible by proxy re-encryption. This results in a health monitoring system that preserves the accuracy and confidentiality of data while reducing the safety risks of IoT-driven healthcare applications.

Keywords : IoT, healthcare, sensors, EHRs, blockchain, proxy re-encryption, data privacy, data security.
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