

Blockchain Driven Multi-Level Healthcare Protection

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Abstract: *This research paper proposes a secure healthcare data management system that combines Lattice-Based Access Control (LBAC) with blockchain-enabled smart contracts to enhance data security, transparency, and integrity. The system is designed to safeguard sensitive healthcare information by classifying patient data based on sensitivity levels and enforcing strict access controls through LBAC mechanisms. Users must submit access or modification requests, which are verified against predefined clearance levels to prevent unauthorized interactions. Blockchain technology further strengthens the framework by validating LBAC verifications through smart contracts, creating an immutable audit trail of all user actions. By merging LBAC with blockchain, the system ensures privacy protection, regulatory compliance, and fosters trust within modern healthcare environments*

Keywords: Blockchain, Lattice-Based Access Control (LBAC), Healthcare Data Security, Smart Contracts, Compliance Validation, Clearance Level Assessment, Immutable Audit Trail

