A Hybrid Blockchain-Machine Learning Framework for Real-Time IoT Data Validation in Intelligent IoT-Based IT Infrastructures

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Abstract: *An immense growth in data generation caused by Internet of Things devices requires intelligence in IT structures, which brings both advantages and disadvantages. The data quality demands high priority because real-time decision systems use incoming information for operationalization. A new dual framework links blockchain elements to machine learning models for real-time IoT data validity assessment because of its essential importance. A proposed framework combines blockchain technology and machine learning algorithms to form an audit trail for IoT data tracking while machine learning models analyze data anomalies for detecting malicious or corrupt activities. The system implements an efficient data validation mechanism through this functional integration to establish highly reliable intelligent IoT-based IT infrastructure operations.*

Keywords: IoT, Blockchain, Machine Learning, AI, Big data