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The Future of Digital Financial Security: Integrating AI, Cloud, and Big Data for Fraud Prevention and RealTime Transaction Monitoring in Payment SystemsSafeguarding Financial Data

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The rapid evolution of digital payment systems has heightened the need for advanced security measures to combat financial fraud and ensure real-time transaction monitoring. This study explores the integration of Artificial Intelligence (AI), cloud computing, and big data analytics in enhancing digital financial security. AI-driven fraud detection models leverage machine learning algorithms to identify suspicious patterns, mitigate risks, and automate threat response mechanisms. Cloud computing provides scalable infrastructure for secure data processing, enabling seamless real-time transaction monitoring and fraud prevention. Big data analytics enhances predictive modelling, allowing financial institutions to detect emerging fraud trends and adapt security protocols dynamically. Additionally, this research examines challenges such as data privacy, regulatory compliance, and adversarial AI risks while proposing strategies for strengthening financial cybersecurity. By integrating AI, cloud, and big data, the future of digital financial security promises greater transparency, resilience, and consumer protection in an increasingly digital economy.