

# The Role of Artificial Intelligence in Risk Management in Banking

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**Abstract:** *The integration of Artificial Intelligence (AI) in banking risk management is transforming traditional practices, creating innovative solutions to manage and mitigate potential threats effectively. AI technologies, such as machine learning, natural language processing, and predictive analytics, have enabled banks to analyze massive datasets with unprecedented speed and accuracy. These advancements allow financial institutions to identify potential risks, such as credit defaults, fraud, and market volatility, earlier and more precisely than ever before. AI-driven systems excel in detecting patterns and anomalies in financial transactions, which strengthens fraud detection mechanisms and enhances regulatory compliance. By automating risk assessment processes, AI reduces human bias and operational inefficiencies, fostering more robust decision-making frameworks. Furthermore, real-time monitoring and automated alerts empower banks to respond swiftly to emerging threats, thus safeguarding assets and maintaining customer trust. Despite the evident benefits, integrating AI in risk management comes with challenges, including concerns over data privacy, algorithm transparency, and the ethical implications of automated decision-making. Addressing these issues requires a collaborative effort between regulators, technologists, and financial institutions to ensure AI's deployment is both responsible and effective. This paper aims to explore the transformative role of AI in banking risk management, examining its applications, benefits, challenges, and future potential in redefining the way risks are identified and mitigated in the financial sector..*

**Keywords:** Artificial Intelligence, Fraud Detection, Banking Sector, Predictive Analytic, Regulatory Compliance, Ethical AI