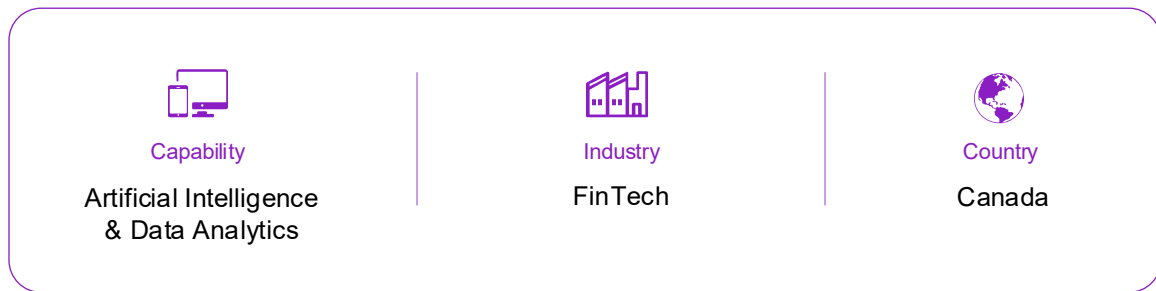# RISHABH SOFTWARE

Case Study

Real-Time AI-Enabled Bank Fraud Detection and Prevention System

Integrating Core Banking with AI Fraud Detection to Enhance Transaction Speed, Security, and Fraud Prevention for a Canada-Based Union Bank

PROJECT OVERVIEW

Our client, a prominent Canadian credit union was battling with critical blind spots: disjointed payment processing, limited time to spot frauds, and an overwhelming number of suspicious transactions. They approached Rishabh Software to integrate an AI-powered fraud detection system directly into their core banking platform to enable real-time fraud prevention and detection. The aim was to embed an AI-driven solution with advanced analytics to identify new threats and block fraudulent transactions.

Capability	Industry	Country
Artificial Intelligence & Data Analytics	FinTech	Canada

KEY FEATURES

We adopted a proactive, AI-driven approach to fraud detection and prevention in the banking industry by integrating advanced machine learning with real-time data analytics.

AI-Driven Fraud Detection

We combined a rules-based decision engine with ML algorithms to analyze transaction data and identify fraud patterns. This proactive fraud detection software enables prompt intervention to prevent unauthorized transactions and minimize fraud risks.
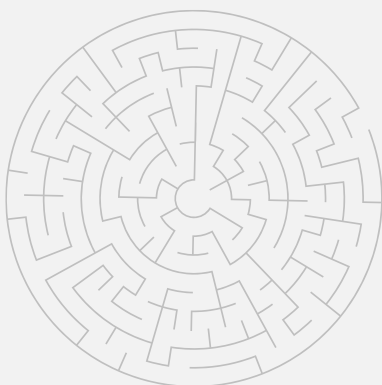
Real-Time Monitoring and Screening

The bank fraud detection software performs real-time monitoring of transactions and flags rapid withdrawals, repeat transactions, and unusual spending locations. This capability supports real time fraud detection in banking sector environments.

Predictive Analytics for Fraud Prevention

We used AI models to predict fraudulent activities by analyzing past data and real-time transactions. This highly efficient fraud prevention solution evolves continuously and stays ahead of emerging fraud tactics.

Seamless Integration and Scalability

The fraud detection solution smoothly integrated with the bank's core banking system and was built to support growing transaction volumes. This ensured uninterrupted operations and scalable performance.

CHALLENGES

- Limited fraud visibility across multiple banking applications.

- Narrow window for detecting fraud at specific terminals.

- Inability to handle high volumes of fallback transactions.

- Lack of transparency and traceability for unforeseen transaction scenarios.

To deliver proactive banking fraud analytics, we focused on integrating AI at every touchpoint. Key components of the developed solution include:

Connector Application

For each transaction submitted by the banking solution, the connector application establishes a synchronous socket connection with a timeout set according to SLA. It parses incoming transactions before forwarding them to the AI-driven analytics engine.

AI-Driven Analytics Engine

We developed a hybrid solution combining rules-based logic and unsupervised machine learning to analyze transactions in real time. This adaptive system detects new fraud patterns and flags suspicious behavior, enabling timely alerts for the bank.

Predictive Models for Fraud Prevention

Using AI-powered risk scoring models, we prioritized high-risk transactions by predicting fraud risks. These predictive models worked alongside heuristic rules to identify unusual trends and automatically route suspicious transactions to the case manager.

Load Balancer

We implemented automatic failover and intelligent clustering to ensure reliability and scalability. We achieved zero downtime and maintained an average transaction processing time of 125 milliseconds while handling 90 million transactions each month.

TECHNOLOGIES & TOOLS

Drools | JAVA IO | Java 8 | RabbitMQ

Apache Spark | APACHE STORM | APACHE ZooKeeper

Outcomes

0	4X	100%
downtime achieved through failover and intelligent load balancing	increase in operational efficiency driven by AI-powered automation and analytics	transactions processed per second with real-time fraud detection

ABOUT RISHABH SOFTWARE

As a Digital Engineering and Enterprise Transformation leader, we empower businesses to scale, innovate, and thrive in today's digital-first world through technology rooted in trust and transparency. We leverage emerging capabilities such as Cloud, Data Engineering & Analytics, AI, Automation and Application Engineering to drive digital transformation and unlock new opportunities. We have successfully served across 25+ countries, and we work towards customer delight as "WE CARE."

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