EXECUTIVE BRIEF

BRING AI-POWERED FRAUD DETECTION TO FINANCIAL SERVICES

NVIDIA

IMPROVING FRAUD DETECTION AND IDENTITY VERIFICATION WITH AI

Digital interactions across financial services are growing exponentially—from mobile banking to e-commerce transactions to online applications for financial products. Banks' traditional processes are stretched to sustain this proliferation of digital services, let alone fight the new types of fraudulent activities being perpetrated by bad actors.

Because of this, many companies are turning to artificial intelligence to accelerate and boost the accuracy of fraud detection and identity verification. Meaningful gains can be achieved through AI with even minor improvements in detection accuracy, which can significantly reduce costs and improve regulatory compliance. AI-enabled applications— leveraging deep learning techniques such as **graph neural networks**, **computer vision**, and **natural language processing**—can reduce false positives in transaction fraud detection and enhance identity verification for anti-money laundering (AML) and know-your-customer (KYC) requirements, improving both the customer experience and the bank's financial health. This is leading executives across the industry to integrate these new technologies into their current processes.

CHANGING BANKING'S OUTLOOK WITH AI

NVIDIA's AI platform and partner ecosystem accelerate the performance and delivery of AI-enabled applications in financial services. With deep learning, banks can combat the most sophisticated types of transaction and identity fraud—boosting fraud detection accuracy, reducing false positives, and identifying previously unknown patterns across accounts and entities to improve compliance with AML and KYC regulations.

Leveraging the NVIDIA full-stack platform, leading banks are deploying enterprise AI capabilities that reduce operational costs, drive higher revenues, improve customer satisfaction, and create long-term competitive advantage.

Financial institutions can develop their own AI capabilities on the NVIDIA platform with software development kits that support the entire fraud detection and identity verification pipeline—from data preparation to model training to deployment. Or they can purchase solutions from **partners** that use NVIDIA's accelerated computing to power AI-enabled services.

REAL-WORLD USE CASES. REAL-WORLD RESULTS.

> **American Express** deployed deep learning models optimized with NVIDIA® TensorRT and running on NVIDIA Triton™ Inference Server to detect fraud. Their fraud algorithms monitor every transaction around the world in real time, and they generate fraud decisions in mere milliseconds. They improved fraud detection accuracy by 6 percent.

> **BNY Mellon** processes more than $1 trillion payments daily. They're training AI models with more extensive and diverse datasets by collaborating with financial partners. BNY built a collaborative fraud detection framework that runs Inpher's secure multi-party computation, which safeguards third-party data on NVIDIA DGX™ systems. BNY Mellon's GPU-powered machine learning and AI models outperform rules-based models, improving fraud prediction accuracy by 20 percent, while preserving the privacy and residency of the input training data.

> **Swedbank and Hopsworks** are partnering to meet KYC and AML compliance requirements with AI. KYC and AML have massive regulatory and economic implications, costing the industry $10 billion a year in fines due to fraud. Existing solutions rely on databases of human-engineered rules that match patterns in financial transactions. In conjunction with Swedbank, Hopsworks has deployed decision support systems that use combinations of feature stores and deep learning techniques to produce state-of-the-art fraud solutions on NVIDIA A100 Tensor Core GPUs.

BREAKING DOWN THE ROI

With fraud prevention alone, AI can make a significant impact on an organization's bottom line. Let's take a look at some example numbers for a credit card company.

Quarterly Activity

Almost **19 million** credit card transactions	**$5 billion** in payments	**$3.4 million** in fraudulent payments[1]

The company turned to AI. They invested in NVIDIA A100 Tensor Core GPUs to develop, train, and deploy models that could identify and prevent fraudulent payments.

The Results

10% reduction in fraud[2]	**$340,000** in fraudulent payment prevention per quarter	**1,360%** ROI in year 1

But these numbers don't tell the whole story. Less fraud means more data remains secure, customers' livelihoods are protected, employee productivity remains high, and the organization's financial health is protected.

PARTNERING WITH NVIDIA

The intangible benefits of AI are equally as essential, which is why NVIDIA's solutions for banks go beyond products. The NVIDIA financial services team is composed of strategic and technical talent that partners with every level of the bank, from working with executives to build AI strategies for the next wave of digital transformation to training data scientists and developers on the latest application frameworks for developing and deploying models into production.

[1] PR Newswire. "Payment Card Fraud Losses Reach $27.85 Billion." November 21, 2019.

[2] NVIDIA Technical Blog. "**GPU Inference Momentum Continues to Build**." March 18, 2019.

Our solution architects and developer technicians stay on the pulse of innovative technology trends and channel those insights to help NVIDIA and our customers build next-generation products and platforms. They work closely with an organization's developers to help them adopt AI, accelerated computing, and simulation capabilities to produce cutting-edge applications and achieve rapid, meaningful breakthroughs in research.

These NVIDIA industry experts are ready to support the evolution of your enterprise AI capability, whether it's on prem, in the cloud, or on hybrid infrastructure.

A FULL SUITE OF BENEFITS

With a full-stack computing platform and a team of industry experts, NVIDIA benefits reach all internal teams critical to a bank's enterprise AI transformation.

- **Business leaders** value the faster time to insight, lower total cost of ownership and greater scalability and productivity delivered by NVIDIA's AI platform.
- **Product managers** utilize application frameworks and pretrained AI models to deploy and accelerate the delivery of AI-enabled applications.
- **Data scientists and developers** can train AI models faster and boost accuracy to improve ROI and customer satisfaction.
- **IT leadership** values the scalability of the platform, with turnkey reference architectures that are supported by NVIDIA AI Enterprise software, hardware, and networking to maximize performance.

START ON THE PATH TO MORE SECURE TRANSACTIONS

NVIDIA is poised to help financial organizations realize the full benefits of AI, maximizing utility, speed to market, scalability and ROI. Speak with your NVIDIA representative today to discuss your priority use cases and about scheduling an AI Ideation Workshop for fraud detection and identity verification.

Ready to Get Started?

To get started with AI solutions for fraud detection, contact **financialservices@nvidia.com**

Learn more about **NVIDIA's solutions for the financial services industry**.

Read a blog on **synthetic data generation**.