



# Accelerating Financial Services With AI

How banks, payment firms, and asset managers are leveraging AI for smarter finance and enhanced customer experiences.



## AI for Superior Performance in Financial Services

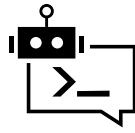
Financial services companies are tapping into the power of AI to automate repetitive tasks, improve efficiency, and reduce costs. Per a recent **NVIDIA survey**, more than 90 percent of financial organizations plan to increase spending on AI infrastructure next year. This will help banks, payment firms, and asset managers scale industry-specific AI use cases, including fraud detection, customer experience, trading, compliance, and risk management.

Financial services institutions are also using accelerated data science and AI to improve banking services, support customer service agents, and keep accounts and transactions safe.

### Top Use Cases for AI



Customer Service Support



Chatbots



Quantitative Finance



Fraud Detection

## Enhancing Banking and Investment Services With Generative AI

Generative AI has the potential to transform nearly every aspect of banking, from portfolio planning and risk management to compliance and automation.

Thanks to its ability to quickly collect and analyze large amounts of data from disparate sources, banks can use generative AI to identify patterns and behaviors associated with money laundering and fraud, improving the security of transactions and peace of mind for customers.

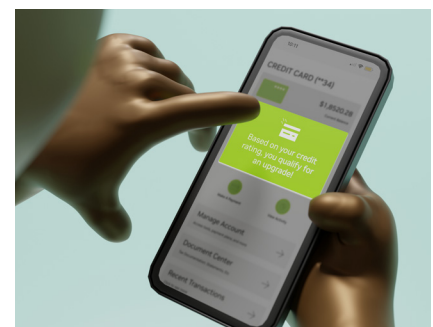
Financial organizations have also begun using generative AI for portfolio management and investment planning. By analyzing historical market trends and real-time data, generative AI can summarize huge swaths of unstructured market data and offer guidance on when to buy or sell assets to maximize returns. Generative AI can also be used for automated trading strategies such as algorithmic trading and quantitative analysis.

Generative **natural language processing** (NLP) and **large language models** (LLMs) are being widely adopted across the financial sector to improve customer experiences. These technologies can be used to better understand and respond to customer inquiries and provide timely responses that cater to specific needs. They can also be used for sentiment analysis following customer interactions to improve products and service offerings.

Finally, generative **recommender systems** are bringing new precision to personalized banking and marketing by automatically suggesting the services, actions, and content that are best suited to an individual customer's needs.

**More than 90 percent** of financial organizations plan to increase spending on AI infrastructure next year.

[A State of AI in Financial Services Survey Report](#)



## Improving Customer Service With Speech AI and Translation

By providing multi-language, self-service options with speech AI and supporting customer service agents with multilingual, AI-powered virtual assistants, banks can improve customer experiences while keeping costs low.

Multilingual voice assistants can be trained on finance-specific vocabulary, enabling them to better understand and resolve customer inquiries. Voice assistants can also use rephrasing techniques to confirm understanding of a caller's request before offering a solution. This helps provide customers with more accurate information in their native language and increases efficiency when bots redirect calls to customer service agents.

By automating processes like authentication, account setup, and account maintenance, speech and translation AI helps banks and customers save significant time and resources.

With these benefits, banks and other financial services organizations can offer more personalized services and faster issue resolution, all while controlling customer service support costs.


## Detecting and Responding to Threats With AI-Based Cybersecurity

Financial organizations are among the favored targets of cyber attackers and lose an **average of \$6 million** per cyber incident. Fortunately, AI security systems can detect and respond to threats quickly, letting organizations stay one step ahead of attackers and mitigate data breach fallout.

Financial organizations are using AI-based cybersecurity solutions to monitor user activity and identify unusual behavior that indicates malicious intent. By scanning large volumes of data in real time, these systems can identify problematic transactions or behavior patterns that would otherwise go unnoticed by analysts.

AI can also enhance phishing and ransomware detection. With NLP, AI systems can detect suspicious emails or texts that contain malicious links or payloads. These algorithms scan incoming communications for keywords and sentence structures associated with malware or other types of attacks and automatically halt potential threats in the inbox.

By combining automated threat detection with advanced analytics, AI is helping financial organizations identify intrusions and anticipate threats to keep financial records, accounts, and transactions secure.



Financial organizations **lose an average of \$6 million** per cyber incident.

## A Spotlight on AI Use Cases in the Financial Sector

**NVIDIA, Deutsche Bank, Bloomberg**, and others are creating generative LLMs trained on domain-specific and proprietary data to power finance applications. Financial **transformers**, or “FinFormers,” are models that can learn context and understand the meaning of unstructured financial data. They can power Q&A chatbots, summarize and translate financial texts, provide early warning signs of counterparty risk, quickly retrieve data, and identify data quality issues.

**Kore.ai**, a conversational AI software company, trained its BankAssist solution on 400+ retail banking use cases for interactive voice response, web, mobile, SMS, and social media channels. Customers can use a voice assistant to transfer funds, pay bills, report lost cards, dispute charges, reset passwords, and more. Kore.ai’s agent voice assistant has also helped live agents provide personalized suggestions so they can resolve issues faster. The solution has been shown to improve live agent efficiency by cutting customer handling time by **40 percent with a return on investment of \$2.30 per voice session**.

**FinSec Innovation lab**, a joint venture by MasterCard and Enel X, replicated a real-world ransomware attack in its lab. In the original attack, a card-processing company suffered an estimated \$7 million in lost business after LockBit ransomware infected 200 company servers in just 1.5 hours. With the NVIDIA Morpheus cybersecurity framework, NVIDIA DOCA™ App Shield for intrusion detection, and NVIDIA® Bluefield® DPU computing clusters, FinSec was able to detect the ransomware attack in less than 12 seconds, quickly isolate virtual machines, and recover 80 percent of the data on infected servers.

## Improving Performance and Customer Satisfaction With AI and Accelerated Computing

Financial service institutions manage some of the largest, most complex, and most sensitive datasets of any industry. As data needs grow and AI models expand in size, intricacy, and diversity, energy-efficient processing power is becoming more critical to finance operations.

To efficiently manage large-scale datasets and deliver real-time performance for AI in production, financial service organizations must shift from legacy infrastructure to accelerated computing. Here are some easy ways banks can get started with AI.

The **NVIDIA RAPIDS™ Accelerator for Apache Spark** software utilizes GPUs to accelerate data processing by up to 5X, reducing infrastructure costs. This lets financial organizations efficiently process large volumes of data for critical AI use cases like summarizing unstructured market data to inform investment decisions, using speech AI to power self-service banking, and using AI defenders to monitor networks and keep transactions safe.

Kore.ai’s solution **reduced customer handling times by 40%**.

It took FinSec **less than 12 seconds** to detect a ransomware attack.

NVIDIA’s accelerated computing platform offers a comprehensive suite of products and services to power next-generation data science and AI workloads.

For real-time AI results, banks and other financial services organizations can leverage **NVIDIA TensorRT™**, **TensorRT-LLM**, and **NVIDIA Triton™ Inference Server**. Triton Inference Server simplifies and optimizes AI model deployment at scale, supporting both NVIDIA GPUs and Arm® CPUs. The TensorRT SDK powers high-performance deep learning inference, delivering up to 36X faster performance compared to CPU-only applications. By delivering unparalleled speedups in analytics and machine learning tasks, AI practitioners and software developers not only reduce infrastructure and energy costs but also enable real-time performance for critical AI applications like fraud detection and cybersecurity.

**NVIDIA AI Enterprise** is an end-to-end, cloud-native software platform that accelerates the data science pipeline and streamlines development and deployment of production-grade AI applications, including generative AI, speech AI, AI-based cybersecurity, and more. Financial service institutions can leverage the security, support, and stability provided by NVIDIA AI Enterprise to improve productivity of AI teams, reduce total cost of AI infrastructure, and ensure a smooth transition from pilot to production.

With accelerated computing, financial service institutions can supercharge complex calculations and data processing, powering enhanced performance for crucial AI workloads. This enables banks and investment firms to strengthen cybersecurity protocols, analyze market data to inform investment strategies in real time, and enhance customer experiences. As a result, with AI, organizations can realize cost reductions, operational efficiencies, increased revenues, and improved customer service—enabling them to compete more effectively and win market share.

RAPIDS Accelerator for Apache Spark **accelerates data processing by up to 5X.**

## Ready to Get Started?

To learn how AI is reshaping the financial sector, visit [www.nvidia.com/finance](https://www.nvidia.com/finance)

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