

SURVEY REPORT

STATE OF AI IN FINANCIAL SERVICES

2022 TRENDS



NVIDIA.

FROM THE INNOVATION LAB TO STRATEGIC IMPERATIVE

This report will dive into the data compiled from a survey of over 500 financial services professionals around the world about the trends, challenges, and opportunities that define the state of AI in financial services in 2022.

AI-enabled innovation is now mission critical for organizations in the financial services industry.

Competition for consumers and their financial data continues to intensify across incumbent banks, fintech, big tech, and big-box retail. This is compounded by highly innovative digital experiences being deployed across industries, which continue to shift consumer expectations. Financial services companies must enhance the level of personalization, data security, customer service, pricing, and more in the creation and delivery of financial products or expect to lose market share to those who do.

Artificial intelligence, machine learning, and deep learning equip financial services companies with the ability to accelerate revenues, create operational efficiencies, and enhance customer experiences. Since last year's "State of AI in Financial Services" survey, AI-enabled applications have moved from the innovation lab to being the nucleus of the new AI-led financial services enterprise. AI-enabled applications are powering banks, insurers, asset managers, and fintechs to—not only deliver improved services—but outperform competitors, increase customer lifetime value, and increase market share.

AI IS PERVASIVE ACROSS FINANCIAL SERVICES

> Deep Learning Dominates in Capital Markets and Retail Banking, While Fintech Relies on Machine Learning

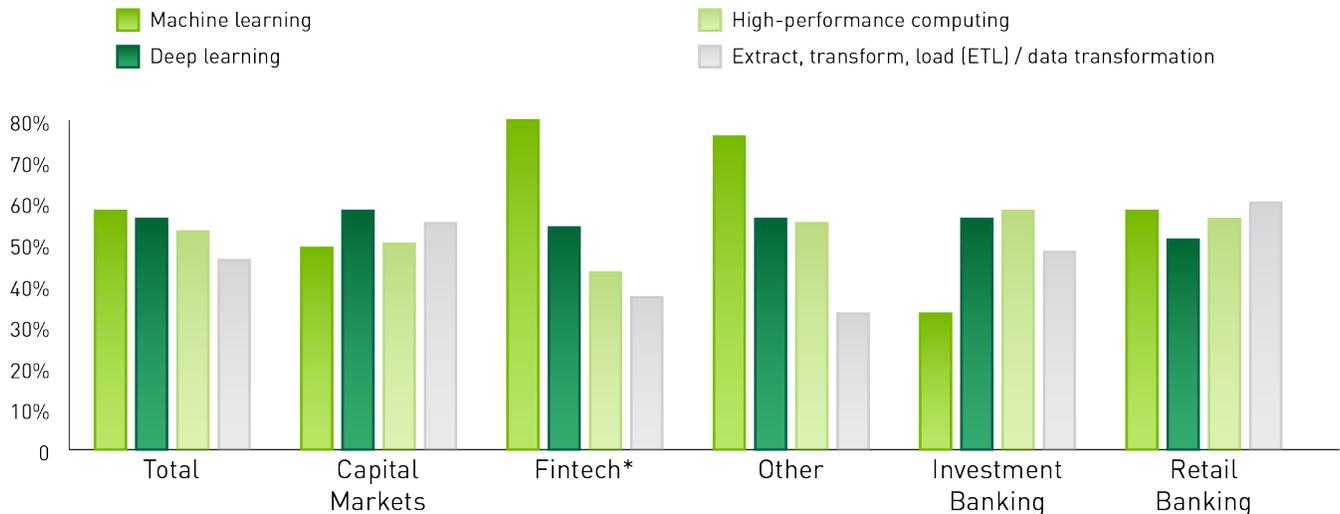
Across all sectors of financial services—capital markets, investment banking, retail banking, and fintech—over 75 percent of companies utilize at least one of the core accelerated computing use cases of high-performance computing (HPC), machine learning, and deep learning.

Which accelerated use case(s) are you using?



Capital market firms—hedge funds, asset managers, and exchanges—that need every possible edge to improve financial returns are the most prevalent users of deep learning at 58 percent. In contrast, 80 percent of fintechs—which have the enterprise AI capabilities available from the cloud but may lack the scale of data needed to enable many deep learning use cases—are leveraging machine learning.

**Which of the following accelerated computing use cases is your company investing in?
Select all that apply.**

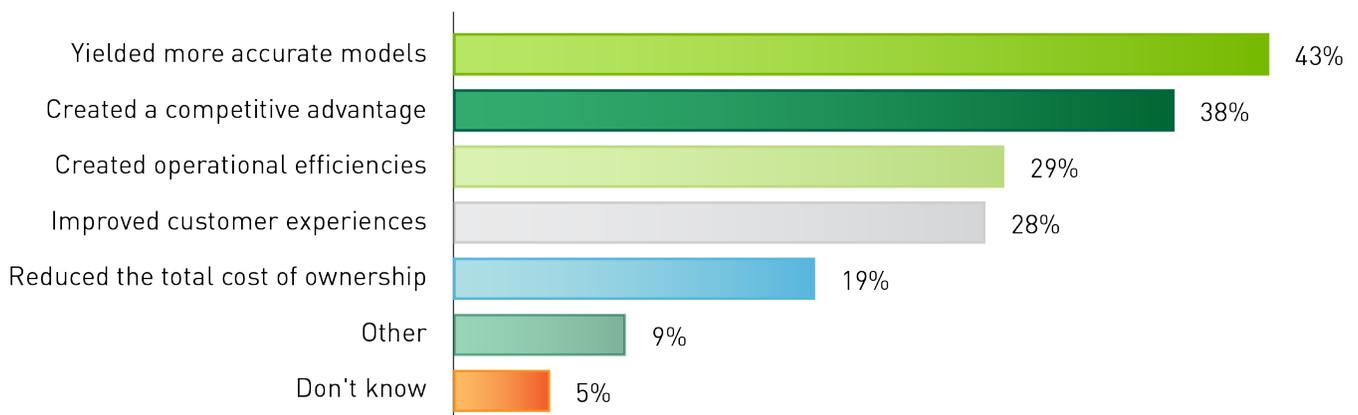


*Note: Small sample size

> Impact of AI in Financial Services

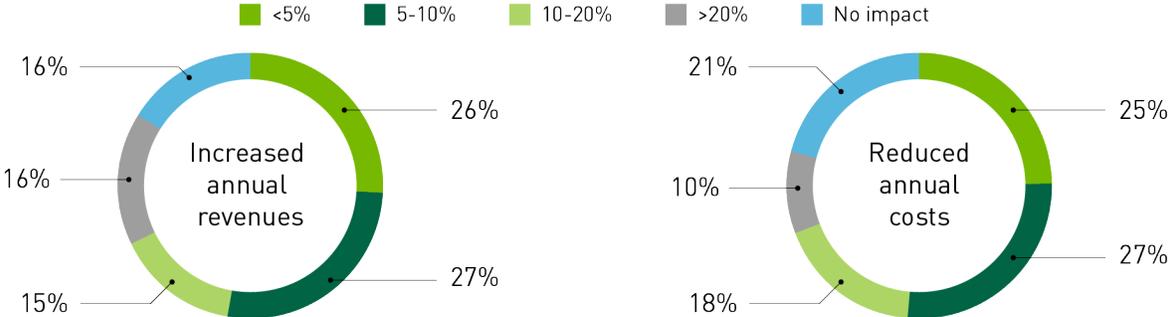
Ninety-one percent of financial services companies are driving critical business outcomes with investments in AI. First and foremost, 43 percent of respondents stated that AI is yielding more accurate models. Along with model accuracy comes a host of other benefits.

What benefits are you seeing from your AI investments?



Companies are experiencing significant financial benefit from enabling AI across the enterprise. Over 30 percent of respondents stated that AI increases annual revenues by more than 10 percent, while over a quarter stated that AI is reducing annual costs by more than 10 percent.

How has AI impacted your company?



The data reinforces the state of play for AI in financial services today: Companies not utilizing AI are in the minority and consequently more likely to deliver inferior customer experiences and less efficient operations, leading to reduced revenues and market share.

> AI Use Cases

In this year's survey, conversational AI entered the top three AI priorities for financial services, joining fraud detection and algorithmic trading.

Respondents to this year's survey reinforced the findings from last year, stating that AI is enabling a wide array of meaningful use cases for financial services companies. The top two of the top three priorities across the industry remain fraud detection and algorithmic trading, while conversational AI is a new entrant into the top three. More importantly, the percentage of companies investing in each use case jumped significantly year over year (YoY), with underwriting and acquisition, conversational AI, and anti-money-laundering (AML) and know-your-customer (KYC) fraud detection showing the largest percentage gains. Interestingly, nine of 13 use cases tracked in our study are utilized by at least 15 percent of respondents' companies, whereas none of the use cases had more than 14 percent industry penetration in last year's survey. This demonstrates the rapid adoption of AI across financial services, which is requiring banks to invest in enterprise AI strategies and infrastructure.

What AI use case is your company investing in? Select all that apply.

Use Case	2022	2021	YoY Change
Fraud detection: transactions and payments	31%	10%	310%
Conversational AI	28%	8%	350%
Algorithmic trading	27%	13%	208%
Fraud detection: AML and KYC	23%	7%	329%

Recommender systems / next-best action	23%	10%	230%
Portfolio optimization	22%	14%	157%
Default prediction	19%	6%	316%
Marketing optimization	19%	7%	271%
Compliance	17%	6%	283%
Underwriting and acquisition	12%	3%	400%
Creating synthetic data for model creation and optimization	11%		n/a
Claims processing	10%	4%	250%
Other	10%	3%	333%
Robo advisory	9%	4%	225%
Don't know	7%	4%	175%

When asked which use cases companies would continue investing in for the next six to 12 months, the top five varied by sector. Notably, fraud detection for payments and identity verification (AML and KYC) were the only two use cases to make the top five in three or more sectors, revealing the diversity of applications that are important to different types of financial services firms.

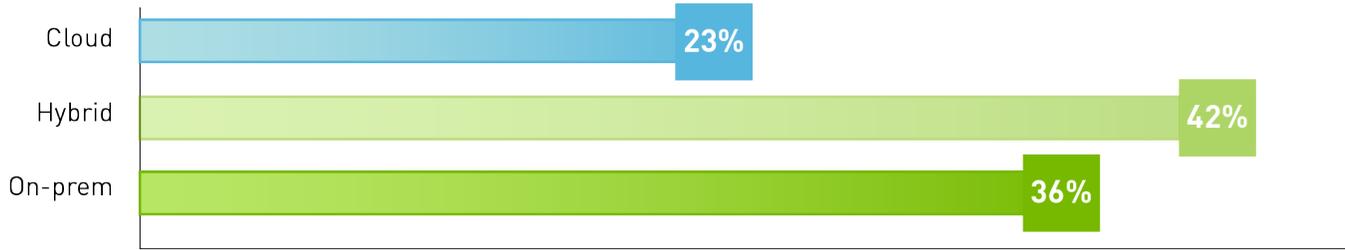
Which AI use cases will you continue to invest in? (top 5 in ranking order)

Capital Markets	Fintech	Investment Banking	Retail Banking
Algorithmic trading	Portfolio optimization	Fraud detection: transactions and payments	Fraud detection: transactions and payments
Portfolio optimization	Fraud detection: - transactions and payments	Fraud detection: AML and KYC	Fraud detection: AML and KYC
Recommender systems / next-best action	Compliance	Recommender systems / next-best action	Conversational AI
Conversational AI	Algorithmic trading	Claims processing	Underwriting and acquisition
Default prediction	Fraud detection: AML and KYC	Default prediction	Marketing optimization

> Hybrid and On-Prem AI Infrastructure Maintain Industry Favor

Financial services companies remain focused on optionality, cybersecurity, data sovereignty, and data gravity as they consider where to host their AI infrastructure. These preferences are extrapolated from responses as to where companies are running most of their AI projects with over three-quarters of the market operating either on-prem or in hybrid instances:

Where do you run most of your AI projects/workloads in 2022?



THE C-SUITE PERCEIVES AI VERY DIFFERENTLY

The “State of AI in Financial Services” survey interviews financial professionals across a wide range of roles, including the c-suite, developers (data scientists, data engineers, etc.), IT (infrastructure leaders, cloud engineers, MLOps, etc.), and managers. The data shows these groups perceive their company’s capabilities in AI very differently.

Thirty-seven percent of the c-suite views the AI capabilities of their company as industry leading, whereas only 20 percent of developers have the same perception. When asked about the biggest challenges in achieving their AI goals, the responses converged on a number of themes: lack of budget, too few data scientists, lack of data, and explainability.

What are the biggest challenges in achieving your company’s AI goals? (top 5 in rank order)

 C-Suite	 Developer	 IT
Lack of budget	Poor technology infrastructure	Lack of data
Too few data scientists	Lack of data	Lack of budget
Lack of data	Too few data scientists	Data privacy issues
Poor technology infrastructure	Lack of budget	Explainability
Explainability and cybersecurity	Explainability	Too few data scientists

CREATING EXPONENTIAL VALUE FROM AI MOVING FORWARD

While the survey identified several challenges to achieving a company's AI goals, there are several steps companies can take to improve the impact AI can have on revenue growth, operational efficiency, and customer satisfaction.

The survey uncovered a few areas of opportunity.

> Successfully Moving AI into Production



of respondents agreed that their company understands how to move an AI project from research to production. Creating a defined process with the target business outcome, identifying key performance indicators to measure success against the desired outcome, and building the research project as a pilot so that workflows are in place are all best practices companies can employ to improve their ability to scale AI applications into production.

> Pursuing Ethical AI



of respondents agreed their company understands the ethical issues associated with AI and proper governance. Companies must invest in creating an AI governance framework that addresses key aspects—including bias, data management, model/algorithm maintenance, and explainability.

> Supporting Explainability



of companies are already leveraging explainability in their AI and machine learning practices. For teams that don't have the expertise to build and maintain explainable AI in house, there are several companies that offer explainable AI platforms that can be integrated into a firm's overall AI governance practice.

LOOKING FORWARD

Financial services companies aren't standing idly by. When asked how their company plans to invest in AI technologies, a minimum of



of respondents said they'll do the following:

- Hire more AI experts
- Provide AI training to staff
- Engage third-party partners to accelerate AI adoption
- Spend more on infrastructure
- Identify additional AI use cases

Those investment priorities create a path to executing on an AI strategy. The expected impact is clear:



of respondents believe that AI will become a source of competitive advantage for their financial services company.

Today's market demands that companies deploy AI-enabled applications at scale. To build an AI-powered bank, leadership must invest in the enterprise AI infrastructure that enables data scientists, product managers and IT leaders to enact leadership's AI strategy. Successfully deploying an AI strategy will enable these financial services firms to achieve higher revenues, lower operating costs, greater customer satisfaction, and an overall competitive edge in the industry.

Ready to Get Started?

To learn more about driving the future of finance with AI, explore **NVIDIA's AI solutions** and **enterprise-level AI platforms** for financial services.