NetApp AI Solutions for Healthcare

Accelerate your journey to AI

Key Benefits

Smart
NetApp® solutions unlock the potential of AI in healthcare by breaking down data silos and connecting disparate datasets to generate deeper insights.

Powerful
AI adoption is growing quickly across the healthcare industry, driving a boom in data growth. Get performance that is six times faster to feed, train, and operate data-hungry machine learning (ML) and deep learning (DL) applications.

Trusted
Data security is one of the greatest concerns in the healthcare industry. Provide trusted data protection, compliance, and secure access for your growing AI data.

Challenge
Constrained by shrinking margins, healthcare organizations must find new ways to improve operational efficiency while meeting—or exceeding—the highest standards of patient care. Global expenditures on healthcare services are expected to increase at an annual rate of 5.4% between 2017 and 2022—from $7.7 trillion to $10 trillion.[1] It's no wonder that healthcare organizations are looking to AI to combat the cost conundrum.

Artificial intelligence (AI) is getting better and more sophisticated at doing what humans do—and doing it more accurately, more quickly, and with lower cost. By 2026, AI is expected to create up to $150 billion in annual savings for the healthcare industry.[2]

The success of AI depends on access to large amounts of data that can be used to identify patterns, develop predictive insights, and enable increasingly accurate autonomous systems. But this data can be anywhere. It is inherently dynamic. And it often comes in multiple forms. IT leaders say that data silos and technology complexity are the two biggest challenges to moving AI projects into production. They need to move quickly without the limitation of where data exists. They need a true data fabric.

Become AI Ready
NetApp helps you tailor your data fabric to accelerate your journey to AI. Only NetApp enables you to integrate your data fabric and streamline the flow of data from ingestion and collection at the edge, to preparation, training, and inference at the core, to analysis and tiering using the world's biggest clouds. Our unified data management supports seamless, cost-effective data movement across the hybrid multicloud environment.

NetApp's world-class partner ecosystem provides full technical integrations with AI leaders, channel partners and systems integrators, software and hardware providers, and cloud partners. Together we have built smart, powerful, trusted AI healthcare solutions to achieve your business goals. NetApp partners with NVIDIA to help you accelerate your journey to AI. NetApp ONTAP® AI brings together NVIDIA DGX supercomputers, NetApp cloud-connected all-flash storage, and Cisco Nexus switches. This proven architecture simplifies, integrates, and accelerates your data pipeline for ML and DL.

We have also partnered with Parabricks to deliver an integrated solution that accelerates genomic pipeline sequencing an average of 10 to 50 times faster than CPU-based solutions.

1. Deloitte, 2019 Global Health Care Outlook.
2. Accenture, Artificial Intelligence (AI): Healthcare's New Nervous System.

NetApp®

EDGE SOLUTIONS	CORE DATA CENTER SOLUTIONS	CLOUD SOLUTIONS
NetApp ONTAP® Select gives you the power of ONTAP software on your choice of commodity servers, hypervisors, and media. Available in ruggedized configurations, it can support the harshest environments.	NetApp AFF A800 all-flash storage systems deliver ultralow latency of less than 200 microseconds and massive throughput of up to 300GBps. The NetApp ONTAP AI proven architecture, powered by NVIDIA DGX supercomputers and NetApp cloud-connected storage, meets the most demanding AI training needs. FlexPod® AI is based on an industry-leading converged infrastructure, powered by NetApp AFF cloud-connected storage, Cisco Nexus switches and Cisco UCS ML M5 purpose-built, AI/ML servers. FlexPod AI provides a versatile, UCS-based platform for AI/ML innovation that is trusted worldwide.	NetApp's cloud data services deliver instant productivity. Bring NetApp's superior data management and NFS capabilities to Azure with Azure NetAppFiles, to Amazon Web Services with Cloud Volumes Service for AWS and to Google Cloud with Cloud Volumes Service for Google. The NetApp AI Control Plane provides full-stack data and experiment management across the hybrid cloud. NetApp FabricPool automatically tiers cold data to the public cloud or to on-premises object storage and automatically recalls data when needed, extending your available storage capacity.

Table 1) Solutions for your AI data pipeline.

Smart: Accelerate Your Journey to AI

AI has applications in various areas across the healthcare space—from medical imaging to patient care, data security, fraud detection, and R&D. But to truly unlock the potential of AI in healthcare, you need to capture, prepare, access, move, and protect large volumes of data from multiple sources—potentially thousands of tables across hundreds of databases.

Smart AI solutions break down data silos, connecting disparate datasets to generate deeper insights. NetApp ONTAP data management software and NVIDIA GPU Cloud enable a unified software stack from edge to core to cloud. Whether you're crunching petabytes of genomics data or analyzing medical images from thousands of patients, NetApp solutions for AI seamlessly integrate with the world's biggest clouds so you can choose the best clouds for your workload.

With NetApp solutions for AI, you can focus your resources on innovation and patient care—not on managing hardware. Accelerate insights and innovation with intelligent data movers, auto-tiering and auto-provisioning, and predictive analytics. And get up and running fast with automation and orchestration of data—on site or in the cloud. With ONTAP AI, you can go from unboxing to deployment in as little as 20 minutes.

Powerful: Confidently Tap into Growing Data Sources

The AI healthcare market is growing quickly. At 40% compound annual growth, the market is expected to reach $6.6 billion by 2021 and $13 billion by 2025.[3] As AI adoption spreads across the healthcare industry, organizations face another boom in data growth.

With NetApp solutions for AI, you can confidently tap into growing data sources with virtually unlimited, nondisruptive scalability and performance. NetApp offers a powerful unified data platform to feed, train, and operate data-hungry AI, ML, and DL applications.

NetApp ONTAP AI offers 25 times more capacity than the closest competitor and limitless, nondisruptive scalability so you can confidently tap into growing data sources. And with 6 times faster performance, ONTAP AI delivers the high performance you need to dramatically reduce the time it takes to get from data to insights, actions, and outcomes.

Trusted: Rely on Trusted Data Protection, Compliance, and Security

Data security is one of the greatest concerns in the healthcare industry. The growth in data from AI can make it difficult to keep up with constant security threats and ever-changing compliance requirements. With NetApp, you can provide trusted data protection, compliance, and secure access for your distributed, diverse, and dynamic AI data.

NetApp enables you to integrate, protect, and secure a data pipeline from edge to core to cloud. NetApp's unified data platform supports a multitude of data formats and in-place analytics. With data encryption at rest and in flight, data is protected wherever it lives or wherever it moves to. Have confidence knowing that you can rely on a 25-year leader in NFS innovation with a broad AI ecosystem and 24/7 worldwide services and support.

3. Accenture, "Artificial Intelligence: Healthcare's New Nervous System," in Change Healthcare, ODSC East presentation.

Top Use Cases

Medical Imaging

Advances in medical imaging technologies, including 3D and 4D capabilities, real-time analytics, and GPU-accelerated processing, give radiologists powerful tools to make faster and more accurate diagnoses and recommendations for care.

Surgical Robots

AI-enabled robots assist in surgery and even perform procedures independently, allowing more surgeries to be done with greater accuracy. The combination of computer vision software and ML can now be used to manipulate instruments on a scale so small that it can't be done by hand.

Patient Care

Virtual nursing assistants—from chatbots to voice assistants and even animated avatars—can help nurses communicate information to patients quickly—when and where they need it. AI can also act as a second set of eyes, verifying the work of nurses, doctors, and pharmacists to make sure that prescriptions are accurate and safe.

Healthcare Management

Managing paperwork, finances, and the security of patient records while navigating a complex legal and ethical environment takes significant time and effort. AI enabled natural language processing software integrated with EHR systems can help clinicians spend more time with patients and less time at a computer.

Data Security

Targeted use of ML can also help healthcare systems address security of patient records. ML applications can track access to patient records in a hospital and assess whether that access is appropriate—or suspicious. In finance, AI can monitor behavior and transactions to detect anomalies that could represent fraudulent activity and can flag them for review.

Genomics

In genomics, AI software can help identify patterns among the human genome's more than 3 billion base pairs. In the process, it can identify individual mutations, and, based on experience, it can then make predictions and recommendations for the best course of treatment.

Research and Development

AI can also be used to streamline R&D for drug discovery, quickly and efficiently working through many possibilities, enabling new drugs to be brought to market faster and at a lower cost.

About NetApp

NetApp is the leader in cloud data services, empowering global organizations to change their world with data. Together with our partners, we are the only ones who can help you build your unique data fabric. Simplify hybrid multicloud and securely deliver the right data, services and applications to the right people at the right time. Learn more at **www.netapp.com**.