

AI-driven data analysis in healthcare

Leveraging scalable, secure infrastructure for better patient outcomes

When new technologies arrive with the ability to substantially improve efficiency and accuracy, healthcare leaders take notice. Such is the case with artificial intelligence (AI) and its impact on data analysis. Advanced AI algorithms can analyze enormous amounts of data (e.g., images, genomic data, electronic records, and clinical trial data) in a fraction of the time compared to traditional methods. This enables faster, more precise outputs that are used in diagnostics, treatment plans, drug development and more.

To fully harness the capabilities of AI-powered data analytics, however, healthcare companies can no longer rely on disparate legacy systems. Now is the time to prepare the robust network connectivity and edge services that are critical for AI success.

Challenges of integrating AI for data analysis

AI is fundamentally changing the way humans diagnose and treat diseases, develop drugs, and conduct real-time monitoring. But healthcare companies must navigate a complex landscape of technological and operational hurdles to fully realize the benefits of AI-driven systems.

- **Integration with existing systems:** Integrating AI-powered data analysis with legacy systems can be particularly challenging because outdated systems may not easily interface with modern AI technologies. This can lead to additional investments for seamless integration and data flow between systems.
- **Scalability:** Older systems were not designed to handle the large volumes of data required for AI-driven data analysis. This can limit the scalability of AI solutions and hinder their ability to process and analyze data efficiently.
- **Security concerns:** Legacy systems may have outdated security protocols, making them vulnerable to cyberattacks. Implementing AI tools requires robust security measures to protect sensitive patient and corporate data.

By addressing these challenges, healthcare companies can better position themselves to leverage AI for improved data analysis and overall operational efficiency.



85%

of healthcare leaders are exploring or have already adopted gen AI capabilities for various uses including enhanced data analysis.

Source: [Generative AI in healthcare: Current trends and future outlook](#) | McKinsey | 2025

AI-enabled data analysis in healthcare supports:

- Enhanced diagnostics
- Predictive analytics
- EHR management
- Drug discovery
- Administrative efficiency
- Remote monitoring and telehealth

LUMEN®

Solution: High-capacity, low-latency, scalable networking

Lumen® Wavelengths

The exponential and unpredictable surge in next-generation application demand is compelling customers to deeply control their core network infrastructure to interconnect their data centers and cloud environments. Lumen Wavelengths is a solution that addresses many of the challenges healthcare companies face with their AI transformation including:

- **Enhanced connectivity:** Lumen is uniquely positioned to solve customers' cloud and data center connectivity challenges with Wavelengths. The solution provides high-bandwidth interconnect for multi-data center operations, which benefits healthcare companies that need ultra-high bandwidth and low latency connections to synchronize data and support critical applications across multiple data centers.
- **Scalability:** Lumen Wavelengths is an ultra-high capacity (100G/400G), low-latency solution. It enables a scalable connectivity fabric for distributed IT instances residing in disparate public and private data centers and cloud-computing environments.
- **Security:** Healthcare companies need private, dedicated optical transport between secure data centers to meet regulatory requirements like HIPAA. Lumen Wavelengths provides secure and dedicated networking to help customers meet their compliance needs.

Results: Maximize ROI with an AI-ready network

Operational costs

Lumen Wavelengths offers high reliability and low downtime, which helps minimize operational disruptions and revenue loss. In addition, its high-capacity, low-latency connections enable faster data transfers and enhanced application performance, which helps drive productivity and optimize operational costs.

Maximize performance

Building a private, dedicated metro edge network allows healthcare businesses to control their own data density while enabling speed, reliability and security. At the same time, the scalability of Lumen Wavelengths allows customers to easily adapt to expanding bandwidth requirements while maintaining critical uptime and functionality.

Enhanced security

Lumen Wavelengths is an inherently private solution that enhances security by providing dedicated fiber-optic connections with advanced encryption, minimized congestion, and customizable security features that help minimize the risk of data interception and unauthorized access.

Transform data analysis with Lumen

[Lumen Wavelength Services](#)

Why Lumen?

With a comprehensive portfolio, Lumen can help your business deliver high-quality connectivity, minimize costs and complexity, and enhance your security posture. Rely on the extensive and deeply peered Lumen global network, Black Lotus Labs' threat intelligence, and our team of experts to help deploy and manage the solution.



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