

How AI is helping improve the healthcare experience — three use cases



Tripti Sethi, Senior Director, Global Data and AI Center of Excellence Lead at Avanade, spoke to Information Age about how AI is helping to improve the healthcare experience.



With increasing amounts of data being generated in healthcare, how can organizations leverage AI and analytics to improve care and help make the healthcare system run more efficiently for an overall better patient and provider experience?

In this article, we explore, through various use cases how healthcare organizations can leverage the increasing amount of data available using artificial intelligence (AI), and machine learning (ML) and analytics to improve the patient care experience and drive operational efficiencies.

Use case #1: Utilizing unstructured data

[Unstructured data](#) in healthcare refers to anything from clinicians handwritten notes to prescription forms and patient call center logs. This information is increasing in volume and new ways of capturing and analyzing this data are needed.

Looking at how healthcare organizations can use this unstructured data to unlock new insights and drive patient-focused improvements, [Tripti Sethi](#) — Senior Director, Global Azure and AI COE Lead at [Avanade](#) — provided an example of the work done with [Answer ALS](#).

The challenge was harnessing big data and AI to search for answers and treatments. The goal was to leverage cloud computing, ML, an enormous amount of patient data and a powerful interactive data infrastructure – all to help determine what causes ALS and identify potential treatments.

She explained: “Answer ALS is a revolutionary research program founded and run by Johns Hopkins and the Robert Packard Center for ALS Research. Over 1,000 fellow ALS patients are participating.

Answer ALS brings together global research centers, leading technology companies and world-class researchers. However, the amount of unstructured data generated from this global collaboration presented a challenge. How could researchers efficiently tap into this data and unlock insights?”

Tripti continued: “To solve this challenge, we harnessed a powerful infrastructure cloud computing model with ML to create something similar to an Azure-based data query engine. The data query engine was capable of processing research queries in hours instead of days and weeks.

Researchers were able to analyze much more data in significantly faster times. This allowed researchers to use this platform as a foundation for new clinical trials to help expedite the development of successful treatment protocols for ALS patients,” she added.



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The future of AI in healthcare

AI is going to play a pivotal role in the healthcare sector as it accelerates to an increasingly virtual environment.

The shift to virtual care has been accelerated by the pandemic, which has created this huge explosion of data. But more can be done to gather insights and drive meaningful change using AI, ML and analytics, in order to catch up with this explosion of data.

“AI and analytics present so much opportunity for better patient care, improved internal efficiencies and more accurate treatment discovery. We just need to leverage these technologies, without forgetting the importance of ethics and compliance,” Sethi adds.

Learn more at:
[Avanade.com/health](https://avanade.com/health)

Use case #2: Leveraging AI and ML in the healthcare supply chain

AI and ML have an important [role to play in the future of healthcare](#), in terms of improving patient care and operational efficiency.

These advanced analytic methods can also be used to help healthcare organizations drive efficiencies and solve issues like supply chain challenges, which have been intensified by the pandemic.

Looking at another example, Sethi refers to a large pharmaceutical wholesaler, who Avanade partnered with to help improve their inventory tracking which was error prone and unreliable.

She explains: “Common tracking technologies like The RFID and Bluetooth technologies they were deploying as weight calculation sensors were unreliable and cumbersome — this led to a decrease in their margins.

To solve this challenge, we created a solution that combined AI, specifically computer vision and post-processing machine learning models to edge computer nodes with connected cameras that continuously monitored and tracked inventory changes in near real-time. This helped the pharmaceutical wholesaler improve margins and increase its billing accuracy.”

Use case #3: Leveraging analytics for treatment discovery

Similar to the importance of AI and ML, advanced analytics will have an important role to play in the future of healthcare — specifically in treatment discovery.

Referring to another use case, Sethi points to the work Avanade did at a leading non-profit health system in the US. They partnered to help extend cancer case reviews by four times, which accelerated diagnosis and treatment.

Explaining the initial problem, she says: “Once a cancer patient is diagnosed, the best of course of treatment is then established. Doctors from different specialties use the tumor board to collectively review and discuss cancer cases virtually. Regularly, specialty teams meet to review and discuss cancer cases. Their goal is to gain a deeper perspective and comprehensively analyze the best strategy for a particular patient. But it is not always easy to get a group of doctors in the same room.”

Sethi continues: “To help address this challenge, we worked with the organization to create a pilot solution that trained employees on a new collaborative solution and used analytics to provide insights for doctors and nurses so that they were better engaged, while simultaneously allowing them to input their insights into treatment discovery.”

In this pilot, it was important to train the healthcare employees to use and understand the analytics side of the solution so that they could readily garner insights, and also highlight the importance of sharing their knowledge.

“The addition of this diverse knowledge helped ensure that patients received the highest quality of care, and that the hospital could also accelerate the time for diagnosis, as well as treatments, which can lead to better satisfaction rates,” Sethi adds.

With all these use cases, the work being done is changing people’s lives every day and improving the care experience, oftentimes without patient’s knowing it. This is important, as these improvements should happen in the background, without causing any disruption to patient care.