Understand More About Deep Learning,

The Technology Transforming Self-Insured Health Plans

MARPAI

What will be.

Machines may not be able to comprehend concepts and reason like humans, but they are becoming increasingly intelligent.

Once relegated to the realm of science fiction, machines that can think and learn are now commonplace and part of everyday life. Computers may not currently have the ability to perform these tasks in the same way as humans, but they can process data, make decisions and even "learn" by detecting patterns in data and then adjusting a program to respond to these patterns.

Artificial Intelligence (AI) works by combining robust databases with computer science to help users solve problems and make decisions. **Machine Learning** (ML), a type of AI, enables software applications to improve outcome prediction and allows machines to learn from experiences without being programmed and without coding. **Deep Learning** (DL) is often confused with Machine Learning, but Deep Learning is actually a subset of Machine Learning.

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Deep Learning

Deep Learning uses neural networks to mimic the way human brains learn and enables the machine to analyze and learn from data. In this case, the more data, the better, since neural networks become better at understanding with increasing amounts of data. Deep Learning has many advantages over Machine Learning systems. Deep Learning offers increased prediction levels, lower false positives and higher detection rates.

We use Deep Learning in our everyday lives. It's the technology that enables advanced features of Google maps, facial recognition, customer self-service and chatbots, for example. If you've interacted with Alexa, or used your voice to control your smart phone by asking Siri, you've used Deep Learning.

The Deep Learning system market is exploding as the range of use cases across industry sectors expands. Emergen Research projects the global Deep Learning system market size will reach $93.45 billion by 2028. Driving this growth is adoption of cloud-based technology and the use of Deep Learning systems in big data analytics, as well as the increasing deployment of smart cities technologies used to perform tasks like monitoring traffic patterns and energy systems management to keep environments safe.

$93B

Technology has altered nearly every aspect of healthcare delivery.

New devices improve patient diagnosis and treatment. New advances in robotics make surgeries less invasive and more precise. Sensors and wearables are widely used to improve health and wellness. Cutting edge research is helping us understand how the human body works and enables genome sequencing, for instance, to provide valuable information on drug sensitivity and genetic predisposition to specific illness. And in the age of COVID-19, technology has enabled telemedicine and remote health monitoring tools.

Deep Learning applications are also impacting healthcare in myriad ways, including enabling faster and more accurate diagnostics and reducing administrative tasks to free professionals to work on their core competencies. Ultimately, it helps providers and payors reduce the cost of care and improve patient outcomes.

While Deep Learning is an important technology for most sectors, it is transformative for healthcare.

Here are some of the most compelling Deep Learning use cases specifically in the area of patient care.

Additional applications of Deep Learning include improving fraud detection, boosting customer and member engagement, tracking provider quality and performance monitoring.

Electronic Medical Records

Electronic medical records (EMR) have been around since the 70s, but it wasn't until January 1, 2014 that all public and private healthcare providers and other professionals were required by law to adopt and demonstrate meaningful use of EMRs in order to maintain existing Medicaid and Medicare reimbursement levels. EMRs have many benefits, including enabling professionals and patients to access personal health records, providing a more secure way to store records and minimizing errors.

Today, organizations can use Deep Learning to leverage digitized health record data to make personalized prediction of risks and health issues. Deep Learning models can analyze both structured and unstructured data like clinician's notes, test results and medications. Taken together, this information can identify patients whose trajectories are likely to lead to worsening health, and expensive and life-altering outcomes.

Clinical Imaging and Diagnostics

According to the [National Institutes of Health](#), the first applications of Deep Learning to clinical data were on image processing, specifically to analyze Magnetic Resonance Imaging (MRI) scans to predict Alzheimer's disease and its variations. Deep Learning has also been used to segment multiple sclerosis lesions in multi-channel 3D MRI and for differential diagnosis of tumors and carcinomas from ultrasound images.

Mobile Devices

Smartphones equipped with sensors and other wearables connected to mobile apps facilitate health monitoring and allow users to monitor their medical risk factors and ostensibly directly access personal analytics to facilitate preventive care and help manage ongoing illness. Deep Learning can be key in analyzing this new type of data.

Chatbots
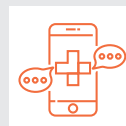
Chatbots, which are software programs that interact with humans using natural language processing in a test or test-to-speed format, are widely used in healthcare. A digital personal assistant can help medical professionals do their job by offering solutions for simple medical issues so the doctor or nurse can focus on more complex cases.

Precision Medicine

Deep Learning is beginning to enable the identification of new associations between genes, pharmaceuticals and other factors by processing huge amounts of genomic, clinical and human data. Researchers in the precision medicine field are focusing on discovering patterns in the data that can help practitioners personalize care strategies.

Unlocking AI's Greatest Value in Healthcare

Deep Learning is a key to unlocking the greatest benefits of Artificial Intelligence in healthcare to deliver benefits to patients, providers, health plan members and companies with self-insured health plans. It can help reduce the cost of claims while improving patient outcomes, identify inefficient processes, boost customer satisfaction and improve the customer experience.

In addition, Deep Learning can help practitioners predict diseases, find correlations between factors that cause seasonal illness by analyzing past data, and help organizations meet regulatory requirements. In return, patients will benefit by receiving a higher quality care, directly access personal analytics to facilitate preventive care and help manage any ongoing illnesses they have to keep environments safe.

About Marpai

Marpai, Inc. (Mar-pay) is an AI technology company primarily competing in the $22B third-party administrator (TPA) sector serving self-funded employer health plans. Marpai brings deep learning, the most advanced AI, to employer health plans to reduce costs, create healthier lives and simplify everything. With AI, Marpai aims to predict near-term health events to prevent costly claims, elevate care quality, reduce use of overpriced care, fill gaps in care, empower proactive member health and eliminate costly inefficiencies and excesses in claims processing. Marpai operates nationwide, offers world class provider networks like Aetna and Cigna and partners with brokers and consultants.

For more information, contact Pam Burns, SVP Enterprise Sales, at PBurns@marpaihealth.com or visit www.marpaihealth.com

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Marpai, Inc.
5701 E Hillsborough Ave
Ste. 1417
Tampa, Florida 33610, US