Machine learning is driving massive improvement and innovation in the healt
expediting advances in clinical operations, drug development, surgery, and da

The Covid-19 pandemic has further pushed the healthcare sector to actively ac
technology.

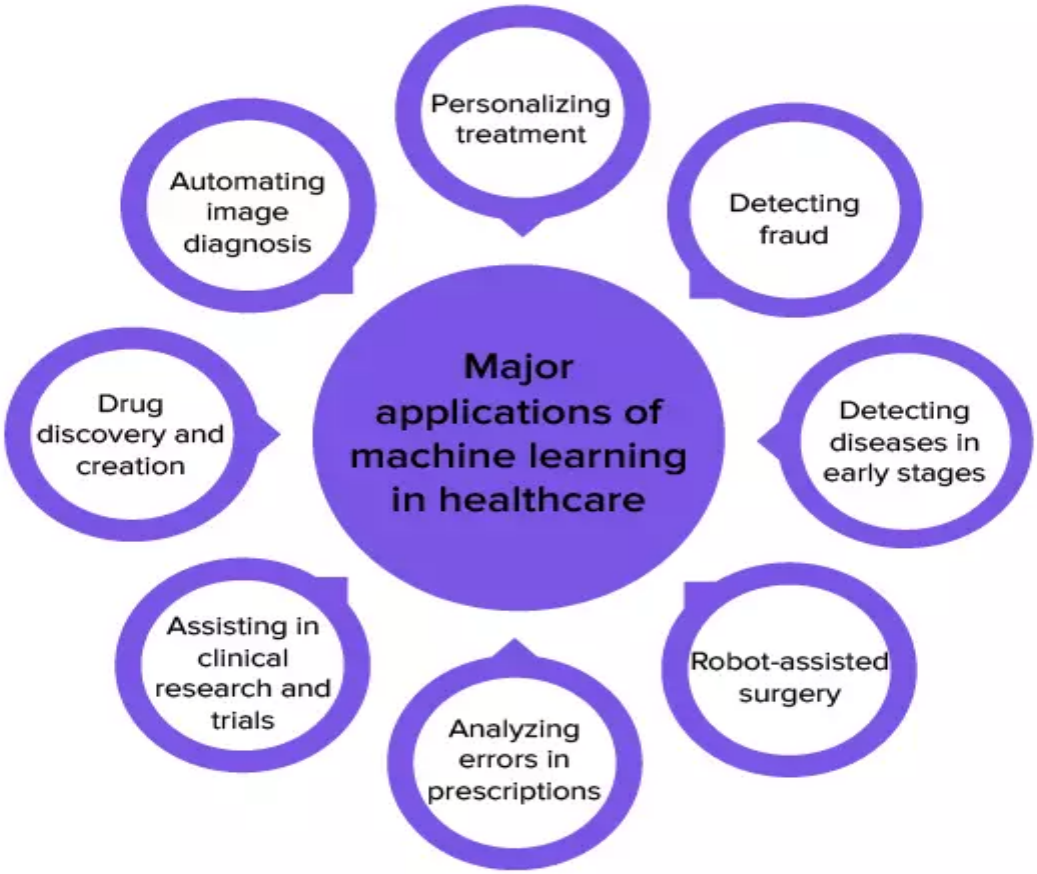
More importantly, patients are set to benefit the most as the technology can im
outcomes by analyzing the best treatment plans for them. ML is capable of de
early stage more accurately, helping to reduce the number of readmissions in h

In this article, we will find out the key applications of machine learning in hea
technology is redefining the industry with its exceptional benefits.

Let's begin!

Major applications of machine learning
healthcare

From maximizing hospital efficiency to making an accurate diagnosis, ML tec
proven to be a boon for the healthcare industry. Here are some major machine
applications in the healthcare industry to better engage with users and generate



Personalizing treatment

Offering personalized treatments is one of the key machine learning use cases domain. It allows healthcare organizations to deliver personalized patient care patients' medical history, symptoms, and tests. Using ML in medicine and hea develop customized treatments and prescribe medicines that target specific dis patients.

With ML, healthcare organizations can also have access to the analysis based records for the patient. This helps doctors make faster decisions on what kind suits the patient.

Additionally, machine learning in healthcare can assist doctors in finding out i

approval, processing, and payment of valid ones. Apart from detecting insuran
prevents the stealing of patient data.

Leading healthcare organizations such as Harvard Pilgrim Health are embraci
technologies to root out healthcare fraud. They are using ML-based fraud dete
identify claims and detect suspicious behavior.

Detecting diseases in early stages

There are a lot of diseases that you need to detect in the early stages to identify
and help patients secure a good way of living.

A combination of supervised and unsupervised algorithms under machine lear
assistance to doctors in the early detection of diseases. ML compares new data
a particular disease, and if the symptoms show a red flag, the doctors can take

Robot-assisted surgery

ML-powered surgical robots have revolutionized surgeries in terms of accurac
systems can perform complicated surgical procedures with reduced blood loss
risks. Additionally, post-surgery recovery is much faster and easier.

Maastricht University Medical Center is one of the best machine learning in h
examples. It has been using an ML-powered surgical robot to suture small blo
than 0.03 millimeters.

In the US alone, 5,000 to 7,000 people die annually because of prescription er
often stem from flawed EHR interfaces — doctors choose the wrong drugs fro
menu or get confused in dosing units. In such cases, ML technologies can be a

ML models analyze historic EHR data and compare new prescriptions against
prescriptions that deviate from typical patterns get flagged, so doctors can revi

For instance, Brigham and Women's Hospital uses an ML-powered system to
errors. Over a year, the system identified 10,668 potential errors, and 79% of t
valuable, so the hospital managed to save $1.3 million in healthcare-related co

Along with cost savings, an ML-powered error detection system increases the
preventing drug overdosing and health risks.

[Also Read: EHR Optimization Guide to Make Your Healthcare Offering

Assisting in clinical research and trials

Clinical research and trials are costly and lengthy processes. There is a good re
new drugs and medical procedures should be proven safe before being used w
are cases when the solution needs to be released as soon as possible – like with
COVID-19.

Fortunately, machine learning algorithms can make the process shorter. These
determine the best sample for the trial, gather more data points, analyze the on

trial participants, and reduce the data-based errors.

Atomwise is one such pharmaceutical company that makes use of supercompu therapy from the databases of molecular structure. In 2015, Atomwise used its technology to find out the current medicines in the market that could be redesi Ebola virus. They successfully found two drugs that could help reduce the risk

The analysis that would have taken several years happened in one day through based technology.

[Also Read: How digital transformation is reshaping the healthcare indus

Automating image diagnosis

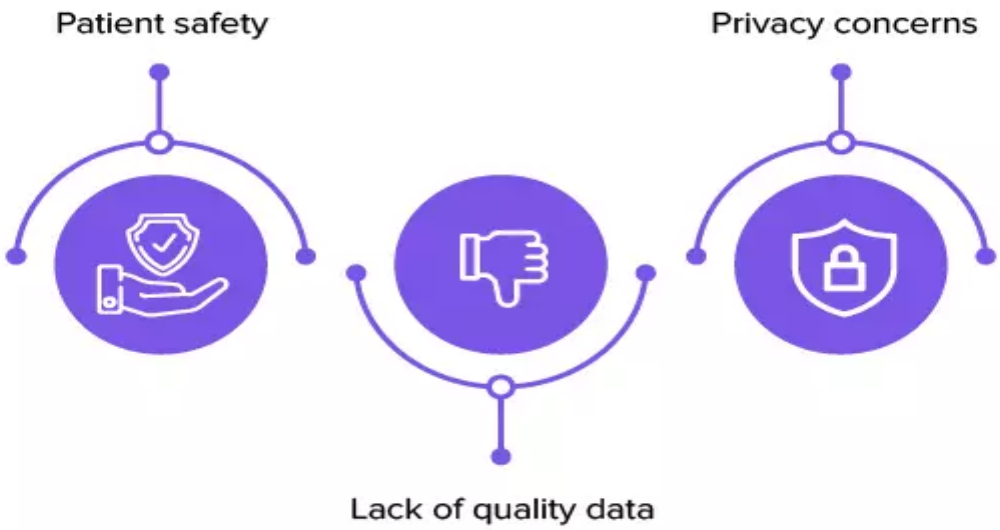
Hospitals and clinics use ML to recognize abnormalities in different kinds of as MRI or radiology scans. Image recognition assists doctors in diagnosing liv infections, tumors, improving cancer prognosis, and more.

The best example of ML-powered visual perception is the tool utilized by the Hospital. Utilizing ML algorithms, the tool analyzes biopsy images of childre between celiac disease and environmental enteropathy, doing it as reliably as

[1] Now that we have looked into the key machine learning applications and mach

The wide implementation of innovative technologies like AI and ML comes w
challenges. From the lack of quality data to patient safety, a number of roadblo
healthcare industry utilizing ML-based software and technologies.

So, let's take a look at them:



Patient safety

The decisions made by machine learning algorithms completely rely on the da
on. If the input is unreliable or wrong, the result will be wrong as well. The fla
harm the patient or even cause their death.

Lack of quality data

The results you get from machine learning algorithms depend on the quality o
Unfortunately, medical data is not always as precise and standardized as it ofte

Another key challenge of implementing AI and machine learning in healthcare of data collected that contains sensitive or confidential information. This, in tu additional security measures to be implemented. So, it's crucial to look for the development company that can offer a number of security options to ensure yo appropriately handled.

The future of ML in healthcare

The future of ML in the healthcare sector looks bright. Despite some challenge enhancing the patient experience, medicine practice of clinicians, and the phar operations. And the journey has just begun. According to Grand View Researc ML in the healthcare market are expected to expand at a compound annual gro 38.4% from 2022 to 2030.

The growing datasets of patient health-related digital information, increasing d personalized medicine, and the rising demand for reducing care expenses are s driving forces of the market growth.

Additionally, in the coming years, there could be programmed robots that wou the surgery room. ML-powered technologies in healthcare can enable doctors during operations by going down to the minutest details of the treatment.

Machine learning in the healthcare industry is also enabling "virtual biopsies" innovative field of radiomics. Leveraging machine learning and AI tools to ga faster, more accurate alerts for healthcare providers.

Machine learning is surely going to expand its base in healthcare in years to c

healthcare professionals and clinicians must start utilizing machine learning in

How can Appinventiv help your business a machine learning?

At Appinventiv, our team of professionals can help develop custom machine l

software solutions considering your healthcare business goals. Our technical k

experience in the industry can help you bring your vision to life.

One of our successful projects in this field is the YouCOMM app developed to

patients with nurses for medical help in real-time. The system allows patients

through the use of head gestures or voice commands.

Since the app launch, 5+ hospital chains in the US have been running on the Y

If you are also looking for AI and ML software development services or want

machine learning is used in healthcare, get in touch with our experts. We can h

implement machine learning in healthcare solutions and cater to your needs in