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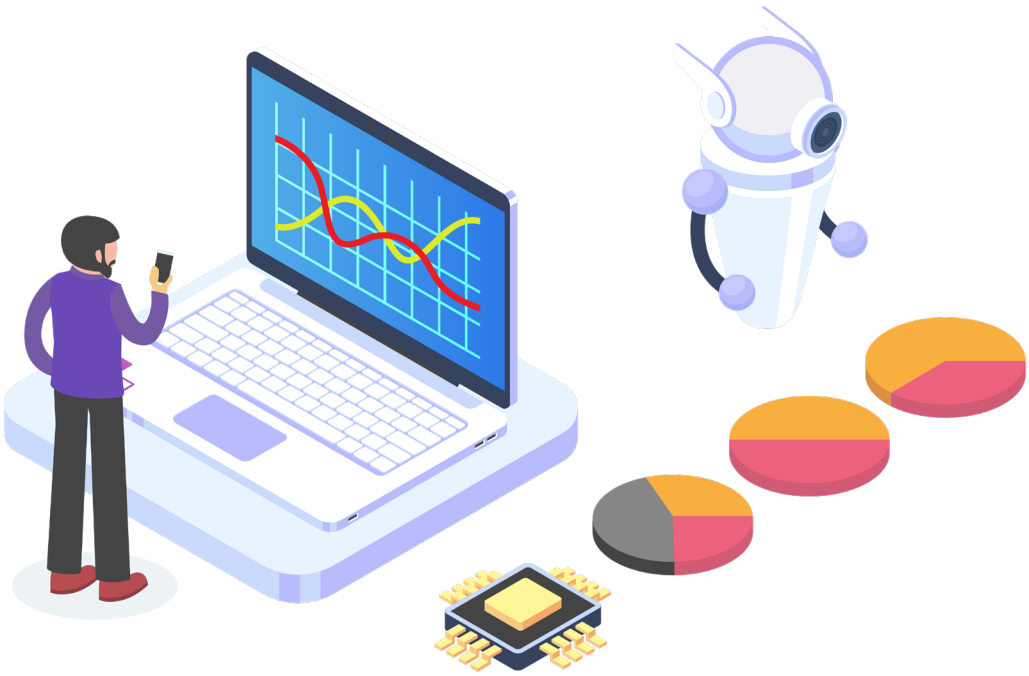

What is Artificial Intelligence? How does it Work?

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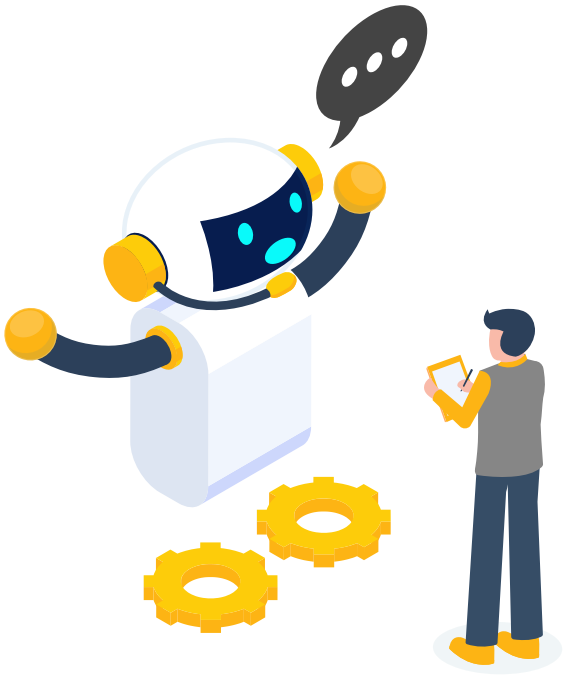
Artificial intelligence (AI) has grown in popularity over the last few years. It involves the simulation of natural intelligence in machines programmed to learn and imitate human actions.

With artificial intelligence, machines can learn from experience, adjust to new data and carry out human-like tasks. As AI continues to grow, it'll have a huge impact on the quality of our lives.

Most of the AI we have today heavily depends on deep learning and natural language processing. We can train computers to accomplish specific tasks by processing a lot of data and determining their patterns.



What is Artificial Intelligence?

Simply put, artificial intelligence is the intelligence programmed into computers or machines, which includes deep learning, machine learning, and other categories. This computer science aims to use computer systems to mimic functions of human intelligence.

This may sound threatening to those that are outside the world of computer science; they feel like human intelligence can be replaced by machines. However, this isn't what AI is used for.

AI has been used to improve our daily lives by making some processes more efficient. They allow computers to automatically do some complicated tasks, such as in the automatic language translation apps that translate speech in one language into text in another language or using machine learning algorithms to carry out research.

Artificial intelligence can rationalize and take actions that have the best chance of achieving a particular objective. With deep learning techniques, this automatic learning through the absorption of huge amounts of unstructured data is made possible.

Some ways we interact with artificial intelligence

- Search engines such as Bing, Google, and Yahoo use AI to determine the best result for a search
- The use of AI in automated marketing emails to determine what emails to send according to how customers interacted with the business
- Some online ads use AI to determine who'll view a particular ad, based on interests, previous behaviour, and searches made
- Chatbots are getting more popular in online messengers, helping large organizations to immediately assist customers
- AI is used in smartphones through voice searches to determine the best result for long-tail keywords and conversations

How Artificial Intelligence Works

AI works by using algorithms and other elements to help gear machines to think, perceive, and take action. Artificial intelligence can be powered by machine learning or simpler processes of rules.

The concept of AI isn't as complicated as it sounds. It can be a computer that is programmed to act in a particular manner or provide specific outputs according to set rules.

To fully understand how AI works, you need to go into the different subdomains of artificial intelligence and understand how it can be applied to the different fields of the industry.

Types of Artificial Intelligence

Artificial intelligence can be split into two broad categories - narrow AI and general AI.

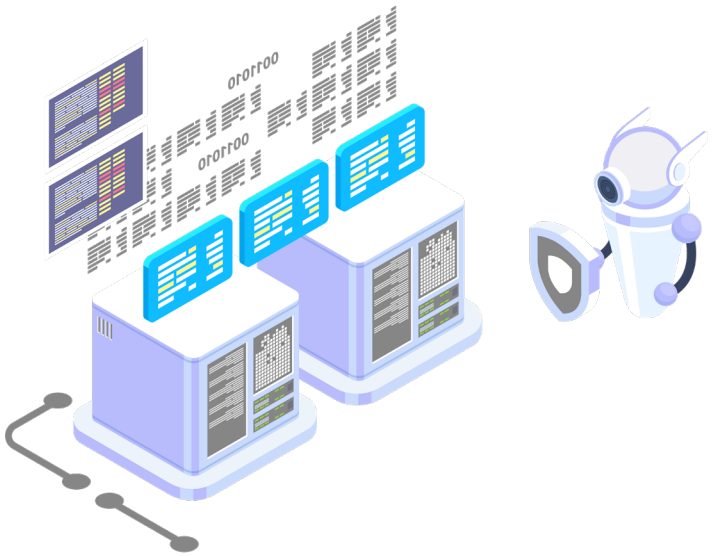
Narrow AI:

It is called also 'Weak AI' and is what we see all around us in computers today. Narrow AI carries out one task extremely well. And while these machines may seem intelligent, they are operating under different limitations than the most basic human intelligence.

This is seen in the speech and language recognition of the virtual assistants such as Siri, in the vision-recognition systems on self-driving vehicles, and in the recommendation of products you might like according to the things you bought in the past.

General AI:

It is often called "Strong AI" and is the AI used in movies, such as robots. General AI is a machine with general intelligence and, just like humans, can apply that intelligence to solve problems.

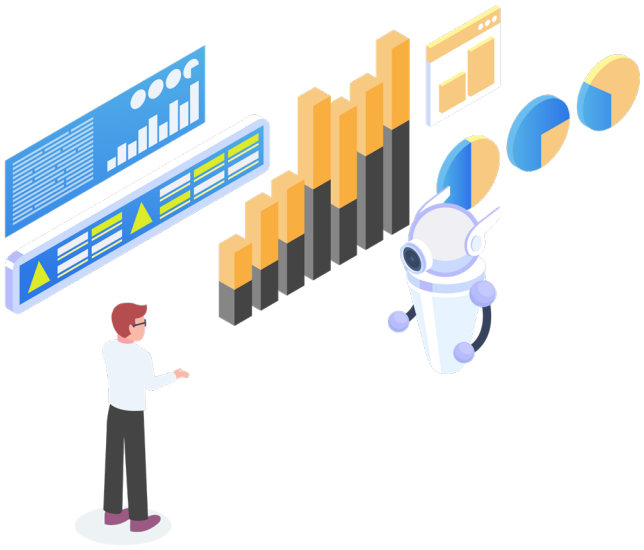


Applications of Artificial Intelligence

There are various ways we can apply artificial intelligence. This innovation can be used in various industries. For instance, it is being used in the healthcare industry for administering drugs and treatment to patients, and for performing surgeries in the operating room.

Other areas it is applied is in computers that play games like chess, and in self-driving cars. These machines have to weigh the consequences of any action they take because every action will influence the result.

AI also has applications in the financial sector, where it is used to determine and prevent fraudulent activities in banking and finance like unusual debit card usage and large account deposits. AI is used in the banking industry to make trading easier.



Types of AI Technology

AI is an umbrella term for the many ways algorithms present themselves. Some of the more commons types are:

Vision AI:

Face recognition AI vision technology can identify a single person even in a crowd of thousands of people and accurately match them to a vast database. Likewise, self-driving cars are using vision technology in navigation.

Natural Language Processing:

These days most of us speak to Alexa, Siri or OK Google and give these AI chatbot characters instructions to travel to destinations or requesting information about the weather or daily routines.

Analytics:

Facebook and Google serve posts and advertising after analyzing you and your interests through complex algorithms and analytics.

Virtual Humans

The Journal of Medical Internet Research article, Computer-Controlled Virtual Humans in Patient-Facing Systems: Systematic Review and Meta-Analysis summed up Virtual humans saying...

“Unlike formless conversational agents, like smart speakers or chatbots, Virtual Humans bring together the capabilities of both a conversational agent and an interactive avatar (computer-represented digital characters).

These algorithms can simulate key properties of human face-to-face conversation — both verbal and nonverbal (eg, gaze, emotions, head movements, and metaphoric gestures).”

Virtual Humans, as the article rightly identifies are not chatbots. They are not preprogrammed with present branching narrative language. Rather, they are trained with Natural Language Processing Skills and content-specific information to the simulations they perform in.

Take for example a Virtual Human that has been trained (using Machine Learning) to be a patient in a training simulation. They are given the attributes and language skills of that patient. Similarly, a language support Virtual Human can speak to a learner helping them practice their speaking and listening skills. The conversations are not pre-set, however, the content and knowledge levels, as well as emotional characteristics, are programmed to each individual.

The Future of AI Technology

With so much interest in AI technology, its growth expansion and capabilities are expanding exponentially. In every area of business, industry, healthcare and education AI is playing a vital role in pushing forward technological advances.

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