Importance of Artificial Intelligence In India

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ABSTRACT

As machines become increasingly capable, tasks considered to require "intelligence" are often removed from the definition of AI, a phenomenon known as the AI effect. A quip in Tesler's Theorem says "AI is whatever hasn't been done yet." For instance, optical character recognition is frequently excluded from things considered to be AI, having become a routine technology. Modern machine capabilities generally classified as AI include successfully understanding human speech, competing at the highest level in strategic game systems (such as chess and Go), autonomously operating cars, intelligent routing in content delivery networks, and military simulations.

Artificial intelligence (AI) is intelligence demonstrated by machines, unlike the natural intelligence displayed by humans and animals, which involves consciousness and emotionality. The distinction between the former and the latter categories is often revealed by the acronym chosen. 'Strong' AI is usually labelled as AGI (Artificial General Intelligence) while attempts to emulate 'natural' intelligence have been called ABI (Artificial Biological Intelligence). Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Colloquially, the term "artificial intelligence" is often used to describe machines (or computers) that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving"

KEYWORD *Artificial Intelligence, machine, learning, technology*

INTRODUCTIONS

Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from experience. Since the development of the digital computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks—as, for example, discovering proofs for mathematical theorems or playing chess—with great proficiency. Still, despite continuing advances in computer processing speed and memory capacity, there are yet no programs that can match human flexibility over wider domains or in tasks requiring much everyday knowledge. On the other hand, some programs have attained the performance levels of human experts and professionals in performing certain specific tasks, so that artificial intelligence in this limited sense is found in applications as diverse as medical diagnosis, computer search engines, and voice or handwriting recognition. Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal. A subset of artificial intelligence is machine learning, which refers to the concept that computer programs can automatically learn from and adapt to new data without being assisted by humans. Deep learning techniques enable this automatic learning through the absorption of huge amounts of unstructured data such as text, images, or video.

Learning

There are a number of different forms of learning as applied to artificial intelligence. The simplest is learning by trial and error. For example, a simple computer program for solving mate-in-one chess problems might try moves at random until mate is found. The program might then store the solution with the position so that the next time the computer encountered the same position it would recall the solution. This simple memorizing of individual items and procedures—known as rote learning—is relatively easy to implement on a computer. More challenging is the problem of implementing what is called generalization. Generalization involves applying past experience to analogous new situations. For example, a program that learns the past tense of regular English verbs by rote will not be able to produce the past tense of a word such as *jump* unless it previously had been presented with *jumped*, whereas a program that is able to generalize can learn the "add *ed*" rule and so form the past tense of *jump* based on experience with similar verbs.

OBJECTIVES

To Study the importance of Artificial Intelligence in India

To Study the effect of Artificial Intelligence on business in India

Applications of Artificial Intelligence

The applications for artificial intelligence are endless. The technology can be applied to many different sectors and industries. AI is being tested and used in the healthcare industry for dosing drugs and different treatment in patients, and for surgical procedures in the operating room.

Other examples of machines with artificial intelligence include computers that play chess and self-driving cars. Each of these machines must weigh the consequences of any action they take, as each action will impact the end result. In chess, the end result is winning the game. For self-driving cars, the computer system must account for all external data and compute it to act in a way that prevents a collision.

Artificial intelligence also has applications in the financial industry, where it is used to detect and flag activity in banking and finance such as unusual debit card usage and large account deposits—all of which help a bank's fraud department. Applications for AI are also being used to help streamline and make trading easier. This is done by making supply, demand, and pricing of securities easier to estimate.

Categorization of Artificial Intelligence

Artificial intelligence can be divided into two different categories: weak and strong. Weak artificial intelligence embodies a system designed to carry out one particular job. Weak AI systems include video games such as the chess example from above and personal assistants such as Amazon's Alexa and Apple's Siri. You ask the assistant a question, it answers it for you.

Strong artificial intelligence systems are systems that carry on the tasks considered to be human-like. These tend to be more complex and complicated systems. They are programmed to handle situations in which they may be required to problem solve without having a person intervene. These kinds of systems can be found in applications like self-driving cars or in hospital operating rooms.

Advantages of Artificial Intelligence

Artificial intelligence (AI) is pushing the boundaries of machine-enabled functionalities. This bleeding-edge technology facilitates machines to act with a degree of autonomy, resulting in effective execution of iterative tasks.

AI facilitates the creation of a next-generation workplace that thrives on seamless collaboration between enterprise system and individuals. Therefore, human resources are not made obsolete, but rather, their efforts are bolstered by emerging tech. In fact, AI provides organizations' with the luxury of freeing up resources for higher-level tasks.

The following are the primary advantages of AI:

- AI drives down the time taken to perform a task. It enables multi-tasking and eases the workload for existing resources.
- AI enables the execution of hitherto complex tasks without significant cost outlays.
- AI operates 24x7 without interruption or breaks and has no downtime
- AI augments the capabilities of differently abled individuals
- AI has mass market potential, it can be deployed across industries.
- AI facilitates decision-making by making the process faster and smarter.

TYPES OF ARTIFICIAL INTELLIGENCE

There are four types of artificial intelligence: reactive machines, limited memory, theory of mind and self-awareness.

REACTIVE MACHINES

The most basic types of AI systems are purely reactive, and have the ability neither to form memories nor to use past experiences to inform current decisions. Deep Blue, IBM's chess-playing supercomputer, which beat international grandmaster Garry Kasparov in the late 1990s, is the perfect example of this type of machine. This type of intelligence involves the computer perceiving the world directly and acting on what it sees. It doesn't rely on an internal concept of the world. In a seminal paper, AI researcher Rodney Brooks argued that we should only build machines like this. His main reason was that people are not very good at programming accurate simulated worlds for computers to use, what is called in AI scholarship a "representation" of the world.

LIMITED MEMORY

This Type II class contains machines can look into the past. Self-driving cars do some of this already. For example, they observe other cars' speed and direction. That can't be done in a just one moment, but rather requires identifying specific objects and monitoring them over time.

These observations are added to the self-driving cars' preprogrammed representations of the world, which also include lane markings, traffic lights and other important elements, like curves in the road. They're included when the car decides when to change lanes, to avoid cutting off another driver or being hit by a nearby car.

THEORY OF MIND

In psychology, this is called "theory of mind" – the understanding that people, creatures and objects in the world can have thoughts and emotions that affect their own behavior. This is crucial to how we humans formed societies, because they allowed us to have social interactions. Without understanding each other's motives and intentions, and without taking into account what somebody else knows either about me or the environment, working together is at best difficult, at worst impossible.

SELF-AWARENESS

The final step of AI development is to build systems that can form representations about themselves. Ultimately, we AI researchers will have to not only understand consciousness but build machines that have it.

BENEFITS OF ARTIFICIAL INTELLIGENCE IN INDIA

Improving Personalized Shopping Experience

Providing customers with personalised marketing increases engagement, helps generate customer loyalty and improves sales. This is why companies are putting so much effort into it. One of the advantages of using AI is that it is able to identify patterns in customers' browsing habits and purchasing behaviour. Using the millions of transactions stored and analysed in the cloud, AI is able to provide highly accurate offers to individual customers.

Automating Customer Interactions

Most customer interactions, such as emails, online chat, social media conversations and telephone calls, currently require human involvement. AI, however, is enabling companies to automate these communications. By analysing data collected from previous communications it is possible to program computers to respond accurately to customers and deal with their enquiries. What's more, when AI is combined with machine learning, the more the AI platforms interact, the better they become.
One example of this is AI Chatbots which, unlike humans, can interact with unlimited customers at the same time and can both respond and initiate communication – whether on a website or an app.
It is estimated, that by 2020, 85 percent of all customer interactions will be taken care of by intelligent machines that are able to replicate human functions. The days of using a call centre look like they are coming to a close.
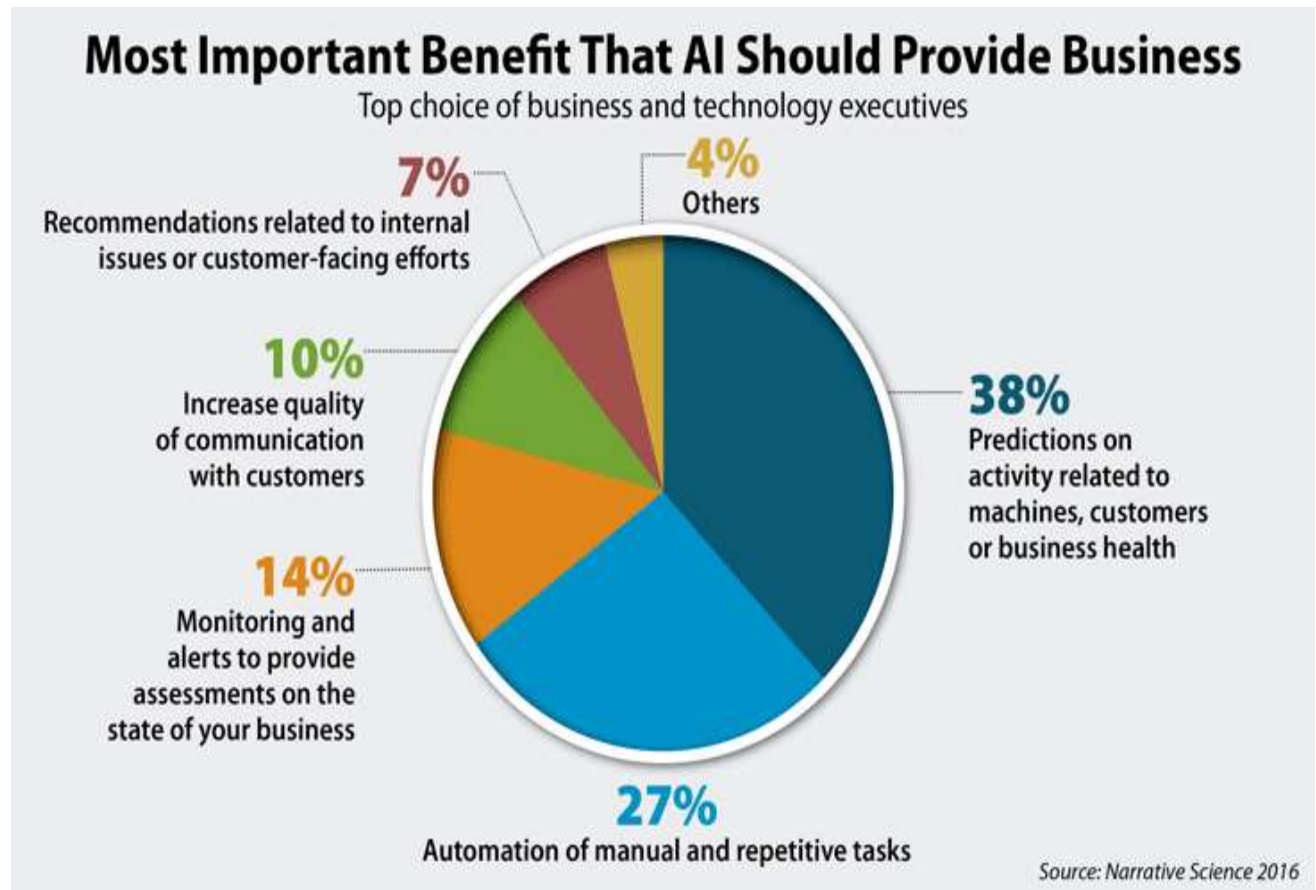
Real Time Assistance

AI is also useful for businesses that need to constantly communicate with high volumes of customers throughout each day. For example, in the transport industry, bus, train and airlines companies, which can have millions of passengers a day, can use AI to interact, in real-time, to send personalised travel information, such as notice of delays. Some bus companies, for example, are already tracking the location of their buses and using AI to provide travellers with real-time updates about where the bus is along its route and its estimated time of arrival. Customers receive this information on the bus company's app.

Data Mining

One of the biggest advantages of using cloud-based AI is that artificial intelligence apps are able to quickly discover important and relevant findings during the processing of big data. This can provide businesses with previously undiscovered insights that can help give it an advantage in the marketplace.

Operational Automation

AI is able to operate other technologies that increase automation in business. For example, AI can be used to control robots in factories or maintain ideal temperatures through intelligent heating. In Japan, human-looking robots now serve as receptionists in some of the countries' hotels automating check-ins, booking services and dealing (in four languages) with customer enquiries. In retail, AI is also being linked with RFID and cloud technology to track inventory. In China, police forces use AI to catch criminals. The country has a vast CCTV network and AI uses facial recognition to spot and track suspects so that they can be apprehended.

Most Important Benefit That AI Should Provide Business
Top choice of business and technology executives

7% Recommendations related to internal issues or customer-facing efforts

4% Others

38% Predictions on activity related to machines, customers or business health

10% Increase quality of communication with customers

14% Monitoring and alerts to provide assessments on the state of your business

27% Automation of manual and repetitive tasks

Source: Narrative Science 2016

Predicting Outcomes

Another advantage of AI is that it is able to predict outcomes based on data analysis. For example, it sees patterns in customer data that can show whether the products currently on sale are likely to sell and in what volumes. It will also predict when the demand will tail off. This can be very useful in helping a company purchase the correct stock and in the correct volumes. It is predicted that, within 10 years, the days of seasonal sales will be over as AI will mean there is too little leftover stock to sell off.

This ability to predict is not just useful in retail. AI is also being used in many other areas, for example, in banking where it can predict currency and stock price fluctuations or in healthcare where, remarkably, it can predict outbreaks of infections by analyzing social media posts.

Improve the Recruitment Process

It may be bad news for recruitment companies, but AI is now helping businesses automate the recruitment of new employees. It is able to quickly sift through applications, automatically rejecting those which do not meet the company's personal specification. This not only saves time (or money spent on a recruitment agency), but it also ensures that there is no discrimination or bias in the shortlisting process. The AI programs available can even take care of the many administrative tasks of recruitment.

CONCLUSION

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

AI systems provide businesses with a wide range of benefits, including personalised marketing, customer service, operational automation, inventory management and recruitment. And these are just a few of the many ways AI can be used. What's remarkable, however, is that many of the AI apps, which are designed specifically for cloud-based systems, are quickly and easily deployable. Companies whose systems are in the cloud can be benefitting from them in no time at all.

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