Artificial Intelligence; It's Time To Innovate The Future

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DOI- 10.5281/zenodo.7583119

Abstract

Recall how you spend an average day of your life- you get up, then you check your smartphone and You reach your workplace, and then start working over the internet . Can we imagine our life without artificial intelligence or without computers? We humans are lazy species. We would love to live in a world where there is minimal human labour and thus we are able to save plentiful time. Also we are producing huge lumps of data all the time. We as humans need something that processes and handles those data to minimize the strenuous efforts being put into handling it. This processing and handling of data is called data science. Data science in simple words, is the scientific study of data, which stores, records and analyses data for our benefit. Data science and artificial intelligence, are the two most important technologies in the modern world. It makes use of artificial intelligence in its operations. In simple words it is the simulation of human intelligence, which is processed by machines especially computer systems which includes learning information acquisition and rules for using it. When we hear the term artificial intelligence, the first thing that comes to the mind is robots. That's because big-budget films and novels about human-like machines that cause damage on Earth. But nothing could be farther from the truth. As technology progress, previous exemplar that defined artificial intelligence become outdated. For example, machines that calculate basic functions or recognize text through optimal character recognition are no longer considered to include artificial intelligence, since this function is now treated as an inherent computer function. John McCarthy coined the term Artificial Intelligence in 1956 and was defined as the science and engineering of making intelligent machines. Hence AI mainly focuses on developing machines to think and work just like humans. There is no doubt in saying that technology is an essential part of the development and growth. A thin line or mistake leads to disruption or destruction.

Keywords : artificial intelligence, data science, computer systems, human, machines, science and engineering, innovations

Introduction

Artificial intelligence as known as AI, develops machines, especially computer systems, to perform in a hyper intelligent manner as it includes imitation or cloning of human intelligence. An artificially intelligent system perceives its environment in such a manner that helps its analytical self in maximizing its chances of success. It is programmed to think like humans and mimic their actions through simulation of human intelligence in machines .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 feature of artificial intelligence is its potential to rationalize and take actions that have the best chance of achieving a specific goal.

Artificial intelligence is based on the principle that human intelligence can be defined in a way that a machine can easily mimic it and execute tasks, from the most simple to those that are even more complex. The goals of artificial intelligence include learning, reasoning, and

perception.AI is continuously evolving to benefit many different industries. Machines are connected using a multi-disciplinary approach based on mathematics, computer science, linguistics, psychology, and more

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 and personal assistants such as Amazon's Alexa and Apple's Siri where 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 solve problem without having a person intervene. It helps to carry out multiple tasks on a real time basis. These kinds of systems can be found in applications like self-driving cars or in hospital operating rooms.

Objectives Of The Study

Main focus of the study is to provide;

- An overview of artificial intelligence.
- An idea about sectors or industry where AI will be applied.
- Brief information about future of artificial intelligence.

Methodology

Descriptive research design is used for the study.

Sources Of Data Collection

Secondary data was used for the study. Secondary data includes magazines, journal, and newspaper and web resources.

Applications Of Artificial Intelligence

The applications for artificial intelligence are never ending. Artificial intelligence today is not just a theory, it has many practical applications. The technology can be applied to many different sectors and industries. A 2016 Gartner research shows that by 2020**, at least 30% of companies globally will use AI in at least one fragment of their sales processes.** Today business across the world are using artificial intelligence to optimize their process and reap higher revenues and profits.

Health

AI develops significant applications for patient to communicate by creating direct interface between technology and the human mind without using keyboards, mouse and monitors. It enables workflow assistants which help the doctors to free up their schedules and also reduce the time and cost by streamlining processes. AI-powered technology helps pathologists in analysing samples of tissue and helps in accurate diagnosis.

Business

Main contributions of AI in business is real-time reporting, processing of large volumes of quantitative data, critical decision making etc. With this efficiency and effectiveness of a business, it is quickly able to implement machine learning. The adaptive intelligence, chatbot automation helps to smoothen out the business process. This thus reduces the repetitive tasks that are normally performed by humans. Now-a-days business are able to better serve their customers by including AI in at least one of their domains.

Education

It must be very tedious for a teacher to grade homework and tests for large lecture courses. A significant amount of time is consumed to interact with students, to prepare for class, or work on professional development. But, this will not be the case anymore. Checking multiple-choice questions, fill-in-the-blank testing and automated grading of students can be done in a moment. It can tell the areas, where there is a need for improvement. A lot of times, it happens that the teachers may not be aware of the gaps that a student might face in the lectures and educational materials. This can leave students confused about certain concepts. With AI, the system alerts the teacher and tell what is wrong. It gives students a customized message which offers hints to the correct answer. This thus helps to fill in the gaps in explanation that might occur in courses. It also ensures that students are building the same conceptual foundation

Autonomous Vehicle

Long-range radar, cameras, and LIDAR, a lot of advancement has been made in the autonomous vehicle segment. Some of its usage in autonomous vehicles are:

- Directing the car to the gas station or recharge station when it is running low on fuel.
- Adjusts the trip's directions based on known traffic conditions to find the quickest route.
- Incorporate speech recognition for advanced communication with passengers.

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- Natural language interfaces and virtual assistance technologies.

Social Media

Instagram, Snapchat, Facebook, Twitter, everyone is using these social media apps to stay connected with the virtual world. A majority of our decisions are being influenced by artificial intelligence that is starting from notifications, to up gradations, everything is administered by AI. It considers all the past web searches, behaviours, interactions, and much more. So, while we visit these websites, our data is being stored and analysed and thus we are served with a personalized experience.

Tourism

Travel around with AI. Right time! Right Price! Competition in the travel and tourism industry is very high because of which prices tend to fluctuate and change often. With predictive analytics driven by artificial intelligence, the price can be predicted. The application is able to predict price patterns and alert travellers when to buy the tickets. So, the cheapest rate can be known before you book the flights to your destination.

History Of Ai

It was 1880's when a great scientist came up with this term and since then a lot of revolutions came in the field which helped the business and the economy to boom. Rome wasn't built in a day, and so is AI.

The seeds of modern AI were planted by classical philosophers who attempted to describe the process of human thinking as the mechanical manipulation of symbols. This work culminated in the invention of the programmable digital computer in the 1940s, a machine based on the abstract essence of mathematical reasoning. This device and the ideas behind it inspired a handful of scientists to begin seriously discussing the possibility of building an electronic brain.

The field of AI research was founded at a workshop held on the campus of Dartmouth College during the summer of 1956. Many of them predicted that a machine as intelligent as a human being would exist in no more than a generation, and they were given millions of dollars to make this vision come true.

Eventually, it became obvious that they had grossly underestimated the difficulty of the project. Hence the U.S. and British Governments stopped funding undirected research into artificial intelligence, and the difficult years that followed would later be known as an "AI winter".

Investment and interest in AI boomed in the first decades of the 21st century when machine learning was successfully applied to many problems in academia and industry due to new methods, the application of powerful computer hardware, and the collection of immense data sets.

1950   John McCarthy who is known as the founder of Artificial Intelligence coined the term 'Artificial Intelligence' in the year 1955. McCarthy along with Alan Turing, Allen Newell, Herbert A. Simon, and Marvin Minsky is known as the founding fathers of AI. Alan suggested the development of machines since humans are always in need of information as well as in search of reasons to solve problems to make decisions.

1974   With time, they became faster, more affordable and able to store more information.

1980 – The year of AI

In 1980, AI research fired back up with an expansion of funds and algorithmic tools. With deep learning techniques, the computer learned with the user experience.

2000's – Landed to the Landmark

After all the failed attempts, the technology was successfully established, but it was in the 2000s that the landmark goals were achieved. At that time, AI thrived despite a lack of government funds and public attention.

Future Of Artificial Intelligence

Reinforcement Learning

Reinforcement learning, in simple words, is an algorithm or programming that uses a system of reward and punishment to train algorithms. Reinforcement learning occurs when the machine uses previous data to evolve and learn. We humans as well as animals learn from past data. With the use of state of reinforcement learning the robots of Boston Dynamics, US, have already learned how to do backflips and jump

Drastic Change In The Employment Sector

Now that many companies are using robotic arms **(like SCARA)** in the routine operational aspects of manufacturing (assembly line operations, etc.), employees can put more focus on the critical aspects of their jobs. Adidas is planning to start Speedfactory in Europe. *Speedfactory is an*

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entirely robot-enabled manufacturing plant. It aims to reduce errors in manufacturing and shipping time. There will be a drastic increase in the unemployment rate in India.

Automated Transportation

It has five levels, which basically represent the extent of autonomy achieved.

- **Level 0**, the driver is responsible for performing all tasks to drive the car-from applying brakes to changing gears to controlling the steering.
- **Level 1** is driver assistance, where the driver assistance systems support the driver but do not take full control. One such feature is the park assist feature.
- **Level 2** is when the car can drive alone, but the driver has to be present in case the system fails. **Tesla's AutoPilot** and **Nissan's ProPilot**, both provide the steering, acceleration and braking systems, but the driver has to be able to intervene in case of a failure
- **Level 3**, the driver can entirely disengage from driving. But, the driver has to be present to handle any unforeseen failures. **Audi's A8L** can take up full driving responsibility in slow-moving traffic. This was the first car to claim level 3 autonomy.
- **Level 4** We can activate full self-driving mode at this level in certain conditions only, like cities and states. They can drive independently, but do require a driver. Google's Waymo project is one such car, which has been operating in the US driver free for some time now.
- **Level 5** is the ultimate level of autonomous transportation, which requires zero human interaction to manoeuvre. **One example** of a such car can be a **robotic taxi**. However, **Elon Musk**, the CEO of Tesla claims that they will be ready for this level in **2020**.

Gan (Generative Adversarial Networks)

GAN stands for **Generative Adversarial Networks**. Scientists and researchers regard GAN as an extension of reinforcement learning. A Generative Adversarial Network is a network wherein two **neural networks** compete with one another and have the ability to capture, analyze, and copy the trends and variations within a dataset. This technique can prove useful in criminal identification, in which eyewitnesses or policemen can create an avatar of the criminal by choosing from a set of options.

Caring For The Elderly

As AI is growing exponentially, another benefit that society can derive from it is that of some sort of attendant for the elderly. Scientists are working on robots that can provide medical care to senior citizens. There will come a day when we will find robots reminding our parents/ grandparents to take medicines, or assist them in carrying out tasks involving motor functions.

Defence

AI's autonomy makes them suited for hostile situations where sending humans may not be feasible.

Conclusion

AI is no more a technology of the future. It is now something that we are living alongside. It is as vast as a child's imagination. As the age-old saying goes, necessity is the mother of all innovations, and so is the case with AI. Human beings know what they need and are good at better defining their wants and quickly transforming this into reality. In the near future, things will happen at a quick pace that we will see major changes and innovation. One thing is clear it is going to be everywhere and will be as helpful as electricity. However, the exploitation of AI could be quite destructive. Anyway, we can't predict the future. So let's relax and wait for it while we extensively use our **Alexa** and **assistants.**

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