
AI RESHAPING LIFE SCIENCES AND ITS APPLICATION

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Abstract :

In many fields, intelligent machines will either supplant or improve human talents in the future. The intelligence displayed by software or robots is known as artificial intelligence. It is a branch of computer science. In computer science, artificial intelligence is gaining popularity since it has improved human lives in numerous ways. Over the past 20 years, artificial intelligence has significantly enhanced performance in the manufacturing, service, and educational sectors. The fast-expanding technology known as expert systems is the result of research in the field of artificial intelligence. Artificial intelligence application domains are having a significant impact on many facets of life because expert systems are now frequently utilized to tackle complicated issues in a variety of field.

Keywords : AI, robots, application, future.

Introduction :

AI is fundamentally reshaping the life sciences by shifting the industry from reactive, trial-and-error methodologies to a proactive, "AI-first" paradigm. This transformation spans the entire value chain, from molecular research to commercial patient care. [1]

AI is already transforming the life sciences industry, but this is just the beginning. Generative AI has the potential to reshape drug discovery and design, helping researchers develop complex molecules faster than ever. [2] Synthetic biology is another frontier, where AI is unlocking the potential of dynamic, intricate proteins that could lead to groundbreaking treatments. Agentic AI could further streamline operations, reducing the time and resources spent on manual tasks like benefits verification. [3] Wearables are also evolving. Some smartwatches detect irregular heart rhythms. Future AI-powered wearables could track biomarkers that signal disease before symptoms appear. AI is also advancing genetic research and healthcare technology, which helps researchers process massive datasets and speed up discoveries in generative biology. [4] AI is cutting down the time it takes to develop drugs, decode genetic data, and diagnose diseases. The companies making the leap now will decide what medicine looks like in the decades ahead.

Applications of AI :



In today's world, artificial intelligence has several uses. Because it can effectively handle complicated issues in a variety of industries, including healthcare, entertainment, banking, education, etc., it is increasingly indispensable in the modern era. AI is improving the speed and comfort of our everyday lives.

Fig No.: 1



The following industries use artificial intelligence.

1. Artificial Intelligence in Astronomy :

Artificial intelligence has the potential to be a valuable tool for resolving intricate cosmic issues. Understanding the universe's origins, mechanisms, and other aspects can be aided by AI technology.

2. AI in Healthcare :

Over the past five to ten years, AI has become more beneficial for the healthcare sector and will have a big impact on it.

AI is being used in the healthcare industry to diagnose patients more accurately and quickly than humans. AI can assist physicians with diagnosis and alert them when a patient's condition deteriorates so that medical assistance can be provided before the patient is admitted to the hospital. [6]

3. AI in Gaming :

AI is applicable to gaming. Chess is one of the strategic games that AI robots can

play.

4. AI in Finance :

The finance and AI sectors work best together. Automation, chatbots, adaptive intelligence, algorithm trading, and machine learning are all being incorporated into financial processes by the finance sector. [8]

5. AI in Data protection :

Cyberattacks are becoming more frequent in the digital world, and data protection is essential for every business. AI has the potential to increase the security and safety of your data. AEG bots and AI2 platforms, for instance, are used to more accurately identify software bugs and cyberattacks. [9]

6. AI in Social Media :

Social media platforms like Facebook, Twitter, and Snapchat have billions of user profiles that must be efficiently maintained and handled.

7. AI in Travel & Transport :

The travel industry is starting to need a lot more AI. AI may do a variety of tasks linked to travel, including generating trip plans and recommending hotels, flights, and the best routes to clients. AI- powered chatbots are being used by the travel industry to communicate with clients in a human-like manner for quicker and better responses.

8. AI in the Automotive Industry :

Some automotive sectors are utilizing AI to give their users virtual assistants for improved performance.

For example, Tesla has unveiled TeslaBot, an intelligent virtual assistant. Currently, a number of industries are creating self- driving cars that could improve the safety and security of your travels. [10]

9. Artificial Intelligence in Robotics :

Artificial intelligence plays a significant role in robotics. Robots are best examples for AI in robotics, recently the intelligent Humanoid robot named as Erica and Sophia has been developed which can talk and behave like humans.

10. AI in Entertainment :

Artificial Intelligence (AI) has transformed many industries by redefining their operations. It's now time for the entertainment industry. You can witness the impact of AI in Entertainment in various ways, such as movie production, game development, advertising, and more.



11. AI in Agriculture :

To achieve the greatest results, agriculture requires a variety of resources, including labor, money, and time. Agriculture is becoming more computerized these days, and artificial intelligence is developing in this area. AI is being used in agriculture for robotics, crop and solid monitoring, and predictive analysis. Farmers can benefit greatly from AI in agriculture.

12. AI in E-commerce :

AI is giving the e-commerce sector a competitive edge, and it is growing more demanding in the e-commerce industry. AI is assisting customers in finding related products with suggested brands, sizes, or colors. [11]

13. AI in education :

AI can automate grading, freeing up the tutor's time to instruct. AI chatbots can interact with pupils as instructors.

SOME OTHER APPLICATIONS :

1. The identification of fraud :

Artificial intelligence has two applications in the financial services sector. AI is used in the first credit application scoring process to determine creditworthiness. In order to track and identify fraudulent credit card transactions in real time, more sophisticated AI engines are used.

2. Virtual customer support (VCA) :

VCA is used by call centers to anticipate and address consumer questions without the need for human involvement. The initial point of contact in a customer support query is voice recognition combined with simulated human dialogue. Higher-level questions are sent to a person.

3. Medicine :

AI systems can be used by a medical clinic to offer medical information, schedule beds, and rotate staff.

4. AI is used in the domains of cardiology (CRG), neurology (MRI), embryology (sonography), and intricate internal organ surgeries.

5. telecoms :

Heuristic search is used by several telecoms businesses to manage their workforces. For instance, BT Group has implemented heuristic search in a scheduling program that offers the work schedules of 20,000 engineers.

6. Music :



Researchers are attempting to have a machine mimic the actions of a talented musician. Among the main topics of study in music and artificial intelligence include composition, performance, music theory, and sound processing. For instance, Orchestral, smart music, and chucks

7. Antivirus:

The use of artificial intelligence (AI) methods in antivirus detection has grown in significance. Currently, a few key AI methods are used for antivirus detection.

It enhances antiviral detection systems' performance and encourages the development of new artificial intelligence algorithms and their applications.

Future of AI :

Looking at the features and its wide application we may definitely stick to artificial intelligence. Seeing at the development of AI, is it that the future world is becoming artificial. Biological intelligence is fixed, because it is an old, mature paradigm, but the new paradigm of non-biological computation and intelligence is growing exponentially. The memory capacity of the human brain is probably of the order of ten thousand million binary digits. But most of this is probably used in remembering visual impressions, and other comparatively wasteful ways. Hence, we can say that as natural intelligence is limited and volatile too world may now depend upon computers for smooth working. (AI) is truly a revolutionary feat of computer science, set to become a core component of all modern software over the coming years and decades. This presents a threat but also an opportunity. AI will be deployed to augment both defensive and offensive cyber operations. Additionally, new means of cyber-attack will be invented to take advantage of the particular weaknesses of AI technology. Finally, the importance of data will be amplified by AI's appetite for large amounts of training data, redefining how we must think about data protection. Prudent governance at the global level will be essential to ensure that this era-defining technology will bring about broadly shared safety and prosperity.

Conclusion :

We have covered artificial intelligence in brief thus far. We've talked about some of its tenets, uses, accomplishments, etc. The ultimate goal of organizations and scientists working on AI is to solve most issues or complete jobs that are directly beyond the capabilities of humans. The world will undoubtedly alter as a result of advancements in computer science, and it is now the duty of the crème layer of engineers to advance this subject.

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