

Artificial Intelligence and its Impact on Higher Education

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Abstract

AI stands for Artificial Intelligence. AI is a branch of computer science that is developing machines that can think and work like humans. When we set such programs in a machine (computer, robot) that it can think and work like humans, it is called AI. Artificial Intelligence began in the 1950s. AI is also known as robotics, software and applications. Through AI, we also get solutions to our various problems, such as education, health, business and personal problems etc. We can also use AI through search engines, software and applications. AI is being used in mobile as well as automobiles. The use of AI is also increasing rapidly in the manufacturing industry. The purpose of creating AI was to make a machine that has the ability to think, understand and work like humans. AI can work faster and for longer periods of time without getting tired or stopping like humans. In the future, AI will be able to perform all the tasks that a human does, such as speech recognition, planning, decision making, and solving problems that require translation between languages.

Artificial Intelligence

Artificial intelligence is a combination of two words: “artificial” and “intelligence.” The word “artificial” refers to something that is man-made or not natural, while “intelligence” refers to the ability to think, understand, and make decisions. When these two words are combined, artificial intelligence means “the ability to think and make decisions created by humans.” In other words, it is a form of intelligence that does not occur naturally but is developed and programmed by humans to perform tasks that normally require human thinking and reasoning.

AI is a branch of computer science that develops machines that have the ability to think and take decisions like humans, that is, when we set such programs in a machine (computer, robot) that it can think and work like humans, it is called AI. Artificial Intelligence (AI) has become an integral part of our daily lives, enhancing convenience and personalization across various platforms. Virtual assistants like Apple’s Siri and Amazon’s Alexa utilize AI to interpret voice commands, enabling users to perform tasks such as setting reminders, controlling smart home devices, and retrieving information hands-free.

We use Google search engine, voice assistant, Alexa to Chat GPT and all kinds of artificial intelligence tools in our daily lives.

How it’s used AI

1. Voice recognition:-Voice recognition technologies like Siri and Alexa are prominent examples of artificial intelligence in action. Similarly, Apple’s Siri has integrated deep learning models to enhance its speech recognition capabilities. These AI-driven systems continuously learn from user interactions, improving their performance over time and making everyday tasks more convenient through natural language conversations.

2. Chatbot:-A Chabot is a software application designed to simulate human conversation through text or voice interactions. Utilizing technologies like natural language processing (NLP) and machine learning, chat bots can understand user inputs and provide relevant responses, often mimicking human conversational patterns. They are widely employed in customer service to handle inquiries, offer support, and perform tasks such as booking appointments or providing product recommendations.

3. Streaming Services: - Streaming is a technology with the help of which you can play any video or audio directly on your device and for this there is no need to download any multimedia file to the device.

Through streaming, users can watch videos and listen to audio on Smartphone's and other devices and for this they do not have to wait for any media file to be downloaded. Streaming content includes videos, TV shows, movies, podcasts etc. You can stream on your computer, laptop, tablet, Smartphone etc.

4. Self-Driving Cars:-These are the cars that can run without any human driver with the help of AI (Artificial Intelligence). Because all these cars detect roads, traffic, and obstacles using sensors and cameras to run in autopilot mode. They are always able to take real-time decisions and with the help of IoT technology, they can communicate with traffic signals and other vehicles.

5. Healthcare:- AI also helps doctors to treat many diseases quickly and accurately. It analyses medical imaging and patient data and gives predictions accordingly. To do all these tasks, it takes the help of IoT devices such as smart wearables, which collect health data from your body, with the help of which AI (Artificial Intelligence) becomes even more accurate.

6. Educational tools: -Educational tools powered by artificial intelligence (AI) are transforming how students and teachers approach writing, research, and academic integrity. These AI systems are capable of analyzing written content, identifying errors in spelling and grammar, and detecting instances of plagiarized material by cross-referencing vast databases of existing work. By leveraging these capabilities, users can produce more polished and credible papers, while also learning from the feedback provided to improve their writing skills over time.

Benefits of Artificial Intelligence

- Any work can be done in less time using Artificial Intelligence because Artificial Intelligence has the ability to take faster decisions than Human Intelligence.
- Using Artificial Intelligence, one can get rid of the need for human help. On one hand, where human help was needed to run machines, now Artificial Intelligence machines operate automatically on the basis of their intelligence.
- Tools and chat bots based on Artificial Intelligence show excellent interaction with humans and can find accurate solutions to their problems.
- Freelance work can also be done using Artificial Intelligence.
- Artificial Intelligence works to save both time and resources.
- With the help of Artificial Intelligence, huge amounts of data can be collected and processed.

- Artificial Intelligence is also very helpful in making personal data secure and confidential.
- After the advent of Artificial Intelligence technology, new and easy paths have opened up for the future of mankind. There are vast future and employment possibilities in this.
- The biggest advantage of Artificial Intelligence is that the machines of this technology have the ability to work 24/7. If we talk about humans, then humans need to rest after some time. But AI devices can work 24 hours.
- Workflow means to improve the way of working or to make further improvements in it. AI has advanced and modernized the way humans work. So that work can be completed easily.

Disadvantages of Artificial Intelligence

- As we know that Artificial Intelligence works on the basis of data, in such a situation, due to misuse, private data or data privacy can also be harmed.
- Day by day people are becoming dependent on Artificial Intelligence, due to which their activity and creativity is continuously decreasing. Due to being based on Artificial Intelligence, the creativity of people is decreasing.
- The efficiency of people is decreasing due to the use of Artificial Intelligence technology and emotions and creativity are also decreasing.
- After the existence of machines, tools etc. based on Artificial Intelligence, the need for human help has almost ended. Due to which the problem of unemployment is increasing.
- A lot of money is spent in making devices of Artificial Intelligence. Because very modern software and hardware are used to make these devices. That is why AI devices are very expensive.

These are some of the shortcomings due to which Artificial Intelligence can also harm you. In such a situation, the beneficial or harmful effect of Artificial Intelligence also depends a lot on the user.

Main techniques of AI

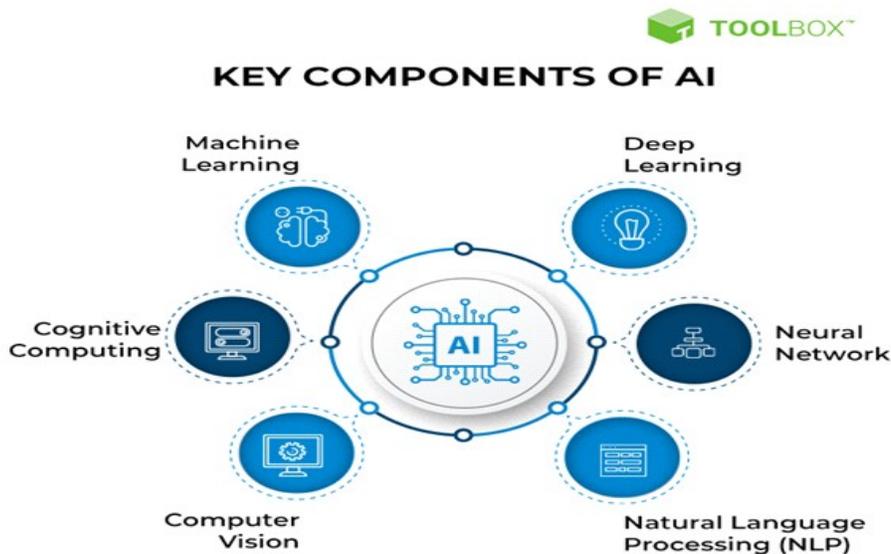
1. Machine Learning (ML): In this technology, machines learn by themselves by understanding data patterns, so that they can take good decisions without any human assistance.

2. Deep Learning: This technology is an advanced version of ML, in which Neural Networks are used. It is used in many technologies like image recognition, speech processing and self-driving cars etc.

3. Natural Language Processing (NLP): With the help of this technology, computers can understand human language (text and voice), like Google Translate, Chatbots and Voice Assistants (Alexa, Siri) etc.

4. Computer Vision: It provides machines the ability to see and recognize photos and videos. Like Face Recognition, Medical Scans and CCTV Analysis etc.

5. Robotics: In this technology, with the help of Artificial Intelligence and ML, such smart robots are made, which can work exactly like humans, like Industrial Robots, Humanoid Robots and Autonomous Cars etc.



The future of Artificial intelligence

AI is not only making the work of humans easier, but it is also increasing the opportunities for many new jobs and research.

In the coming times, it will be used more in many areas like Education, Cyber security, Finance, Healthcare and Manufacturing etc.

With the help of AI-powered automation, the work of companies will be much faster and accurate.

With its use, manual errors will be reduced significantly and apart from this, the efficiency of working faster will also increase.

If AI (Artificial Intelligence) and Robotics are used properly, then there will be better coordination between humans and machines, which will make work even easier.

Conclusion

Artificial Intelligence is a technology that is changing our lives in many ways. It is not only making our work easier but also creating new opportunities. AI has revolutionized areas like healthcare, education, business, and entertainment, automobile industries, mobile phones. However, there are some challenges with AI, such as job loss, privacy violation, and data bias. Keeping these problems in mind, we should use AI in the right way.

The future of AI is very bright. If we use it properly, it can make our lives even better. AI should be seen as a tool, not as something that replaces humans.

Impact on Higher Education

Beyond enhancing the educational experience, AI also offers significant benefits in optimizing administrative functions within higher education institutions. It can be used to automate routine tasks such as scheduling, grading, and handling student inquiries, allowing faculty and staff to focus on more strategic and student-centred responsibilities. AI-powered systems can analyse large volumes of data to improve decision-making in areas like course planning, student retention, and resource allocation. By integrating AI into these operations, colleges and universities can increase efficiency, reduce operational costs, and provide more personalized support to students throughout their academic journey.

Adaptive learning platforms can adjust obstacles and the difficulty of courses to suit each student's needs, thereby maximizing engagement and understanding. To another extent, virtual assistants and chatbots have become one of the user favourites and are becoming increasingly prevalent in higher education institutions. These intelligent systems can handle a variety of tasks, from answering student inquiries to assisting with administrative processes such as course scheduling.

Educators will guide students through deeper learning experiences, fostering creativity and problem-solving skills. AI handling tasks such as grading or content delivery, teachers can dedicate more time to understanding each student's unique needs and potential. This collaboration between human insight and technological precision will enrich the learning process, ensuring that education remains both personalized and deeply human.

1. Create Unique Methods

a) Digital lessons:- Artificial Intelligence (AI) is revolutionizing digital learning interfaces by enabling the creation of customized educational materials.

b) Information visualization:- AI can adapt these learning experiences to the needs of individual students, offering personalized paths that cater to different learning styles and paces. By harnessing AI, educational content becomes more interactive and immersive, transforming traditional methods into dynamic, student-centered experiences that enhance understanding and retention.

2. Personalized teaching and learning:- Artificial Intelligence (AI) is revolutionizing education by offering personalized learning experiences that fulfil student's needs. Tools such as virtual teaching assistants and immersive virtual tours enable students to engage with educational content at their own pace, anytime and anywhere.

3. Research support:- Artificial Intelligence (AI) is revolutionizing research in higher education by streamlining data analysis, literature review, and academic writing. Advanced AI platforms assist researchers in identifying patterns within extensive datasets, generating models, recommending pertinent articles, and even drafting manuscripts for publication.

4. Administrative Support:- Artificial Intelligence (AI) is revolutionizing administrative operations in higher education institutions by automating and optimizing various processes. Universities are employing AI tools to manage student records, transportation logistics.

How AI is reshaping the college experience —

Artificial intelligence is opening doors to greater ideas:

- a) Faster analyses
- b) Make unique models with technology.
- c) Focus on maximizing learning
- d) Build better relationship with plan.

Although, these content more than beneficial for reshaping the experiences. Artificial Intelligence (AI) is playing a pivotal role in enhancing knowledge and awareness towards the goal (purpose).

Benefits of AI in education —

1. Personalized Learning: -Artificial Intelligence is educational content to meet individual student needs, adapting in real-time to learning styles, and performance. It is helpfulfor students master material more effectively.

2. 24/7 Access to Learning: - This platform is virtual for the work of students to learn at any time and revisit materials as needed.

3. Enhanced Administrative Efficiency: -AI automates routine tasks such as scheduling, grading, and record-keeping, allowing educators and administrators to focus more on strategic and student-focused work.

4. Smart Content Creation: - AI can help generate learning materials such as quizzes, flashcards, summaries, and even interactive simulations, making it easier for teachers to enhance their lesson plans.

5. Virtual Learning and Support: - Tools like virtual tutors and teaching assistants provide personalized help, answer questions, and guide students through complex topics.

6. Cost and Resource Efficiency: - By automating tasks and optimizing resource use, AI helps institutions reduce costs while improving the quality and consistency of educational services.

7. Improved Accessibility: - AI tools, like speech-to-text, translation, and content customization, make learning more accessible for students with disabilities or those who speak different languages.

Challenges of AI in Education

With all the great opportunities offered by AI tools and capabilities, teachers also need support in overcoming the challenges that come their way.

1. Data Privacy and Security: - AI systems often rely on large amounts of personal student data, raising concerns about how that data is collected, stored, and protected from misuse or breaches.

2. High Implementation Costs: - Developing, integrating, and maintaining AI systems can be expensive, particularly for smaller institutions with limited budgets.

3. Dependence on Technology: - Relying too much on AI can make institutions vulnerable to technical failures or disruptions, potentially impacting teaching and learning processes.

4. Ethical Concerns: - Issues such as surveillance, student profiling, and automated decision-making raise ethical questions about transparency, fairness, and accountability.

5. Limited Emotional Intelligence: - While AI can assist with instruction and feedback, it lacks the empathy, understanding, and nuanced judgment that human educators provide.

6. Need for Teacher Training: - Educators must be trained to use AI tools effectively, and many may lack the technical skills or support needed to integrate AI into their teaching.

7. Lack of Human Interaction: - Over-reliance on AI can reduce face-to-face interactions between students and educators, potentially affecting the development of social and emotional skills.

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