



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

ARTIFICIAL INTELLIGENCE- AN OVERVIEW WITH REFERENCE TO PRESENT DAY CONTEXT

Dr. Darakhshan Anjum, Assistant Professor

School of Management Studies

Baba Ghulam Shah Badshah University, Rajouri – 185234,

Jammu and Kashmir, India.

Abstract

Artificial Intelligence refers to the capability of machines and computer systems to perform tasks that typically require human intelligence, including learning, reasoning, decision-making, language understanding, and problem-solving. AI systems operate through complex algorithms, machine learning models, natural language processing, and data analytics, enabling them to simulate cognitive processes and generate intelligent responses (Russell & Norvig, 2021). In the educational domain, AI applications encompass adaptive learning platforms, intelligent tutoring systems, automated grading mechanisms, predictive analytics tools, virtual assistants, and AI-driven mental health support systems. Artificial intelligence is the capacity given by humans to machines to memorize and learn from experience, to think and create, to speak, to judge and make decisions. . In the last few years, the growth of artificial intelligence India has been phenomenal. The growth of AI has been impressive. An attempt has been made in this paper the application of artificial intelligence in different field.

Keywords : Artificial, Application, Development, Intelligence.

Introduction:

Artificial Intelligence (AI) has emerged as one of the most influential and transformative forces reshaping the academic system. AI-enabled systems are increasingly being adopted by universities and colleges to optimize instructional delivery, streamline administrative operations, enhance research capabilities, and strengthen student support mechanisms (Holmes, Bialik, & Fadel, 2019).

Artificial Intelligence refers to the capability of machines and computer systems to perform tasks that typically require human intelligence, including learning, reasoning, decision-making, language understanding, and problem-solving. AI systems operate through complex algorithms, machine learning models, natural language processing, and data analytics, enabling them to simulate cognitive processes and generate intelligent responses (Russell & Norvig, 2021).

In the educational domain, AI applications encompass adaptive learning platforms, intelligent tutoring systems, automated grading mechanisms, predictive analytics tools, virtual assistants, and AI-driven mental health support systems. These applications collectively aim to personalize learning experiences, improve academic efficiency, and provide data-informed decision-making support to institutions.. A systematic review conducted by Zawacki-Richter, Marín, Bond, and Gouverneur (2019) found that AI applications in higher education significantly contribute to personalized learning, automated assessment, and enhanced student support services.

Objectives of the Study

The focus of the study is on the following objectives:

- i) To review the artificial intelligence.
- ii) To study the application of artificial intelligence.

“Artificial Intelligence is the science and engineering of making intelligent machines, especially intelligent computer programs.”(John McCarthy, 1956).

John McCarthy, who coined the term Artificial Intelligence, emphasized that AI involves designing systems capable of performing tasks that require human-like intelligence.

“Artificial Intelligence is that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment.”(Nils J. Nilsson, 1998). Nilsson linked AI to intelligent behavior and adaptive functioning.

“Artificial Intelligence is the automation of activities that we associate with human thinking, activities such as decision-making, problem-solving, learning, and self-correction.” (Bellman ,1978). Bellman stressed the automation of cognitive processes.

“Artificial Intelligence is a system’s ability to correctly interpret external data, to learn from such data, and to use those learning to achieve specific goals and tasks through flexible adaptation.” (Andreas Kaplan and Michael Haenlein, 2019).

AI-powered support systems can extend beyond academic assistance to address emotional and psychological needs. Mental health chatbots and AI-based counseling tools offer confidential and accessible support to students experiencing stress, anxiety, or academic burnout. In institutions where professional counseling services are limited, such tools may provide preliminary guidance and encourage help-seeking behavior (Ifenthaler & Gibson, 2020).

The policy envisions a digitally empowered education system that supports personalized learning, multidisciplinary innovation, and research excellence. Additionally, national initiatives led by NITI Aayog aim to promote AI research, skill development, and ethical governance frameworks, reinforcing the strategic importance of AI in India’s educational transformation (NITI Aayog, 2018).

Artificial Intelligence (AI) refers to the capability of machines and computer systems to perform tasks that traditionally require human intelligence, including learning from experience, reasoning logically, solving problems, making informed decisions, understanding language, recognizing patterns, and adapting to new situations.

Unlike conventional computer programs that operate strictly according to pre-defined instructions, AI systems are designed to analyze data, identify relationships, and improve their performance over time through algorithms and machine learning techniques (Mitchell, 1997; Russell & Norvig, 2021). These systems rely on computational models such as neural networks, deep learning frameworks, and natural language processing tools to simulate aspects of human cognitive functioning.

By processing vast amounts of structured and unstructured data, AI technologies can generate predictions, provide recommendations, and execute complex operations with a level of speed and accuracy that often surpasses human capabilities in specific domains (Goodfellow, Bengio, & Courville, 2016). The conceptual foundation of Artificial Intelligence is rooted in the idea of creating systems that can mimic or replicate intelligent behavior.

According to **Stuart Russell**, “*Artificial Intelligence is the study of agents that receive percepts from the environment and perform actions*” (Russell & Norvig, 2021). This definition highlights the notion of intelligent agents—systems that perceive their surroundings through sensors, process information internally, and respond through actions designed to achieve specific objectives. In this sense, AI is not merely about automation but about rational action and goal-oriented performance. Intelligent agents are programmed to maximize desired outcomes, whether in solving mathematical problems, interpreting human language, or making strategic decisions based on data analysis. The emphasis on perception, reasoning, and action underscores the dynamic and interactive nature of AI systems. Artificial Intelligence encompasses several subfields that contribute to its functioning. Machine learning enables systems to learn patterns from data without being explicitly programmed for every scenario (Mitchell, 1997).

Deep learning, a subset of machine learning, uses artificial neural networks inspired by the human brain to process complex data such as images, speech, and text (Goodfellow et al., 2016). Natural language processing allows machines to understand and generate human language, enabling applications such as virtual assistants and chatbots (Jurafsky & Martin, 2023).

Computer vision enables systems to interpret visual information, while robotics integrates AI with mechanical systems to perform physical tasks. Together, these components form a multidisciplinary domain that combines computer science, mathematics, cognitive psychology, linguistics, and engineering. In educational settings, Artificial Intelligence has become a powerful tool for enhancing both instructional delivery and institutional management. AI-driven adaptive learning platforms analyze student performance in real time and adjust instructional content according to individual needs, ensuring that learners receive customized guidance. Intelligent tutoring systems provide immediate feedback, clarify misunderstandings, and support mastery learning by identifying knowledge gaps (Holmes, Bialik, & Fadel, 2019).

Predictive analytics tools help institutions monitor academic progress and identify students who may be at risk of poor performance or dropout, allowing timely intervention (Zawacki-Richter et al., 2019). AI-powered chatbots and virtual assistants facilitate communication between students and institutions by answering queries related to admissions, course selection, scheduling, and academic policies. AI contributes to research advancement and administrative efficiency in universities.

Automated data processing systems assist in managing large volumes of academic records, scheduling classes, evaluating examinations, and optimizing resource allocation. In research environments, AI tools accelerate data analysis and enable interdisciplinary collaboration by uncovering hidden patterns within complex datasets (Holmes et al., 2019). By reducing manual workload and increasing operational accuracy, AI allows educators and administrators to focus more on creative, strategic, and student-centered tasks.

In higher education, therefore, Artificial Intelligence operates as a supportive technological framework designed to improve learning experiences, strengthen academic performance, and enhance institutional effectiveness. It represents a shift from traditional, uniform educational models toward more personalized, data-driven, and adaptive systems. However, while AI offers immense potential for innovation, its integration must be guided by ethical considerations, transparency, and human oversight to ensure that technological advancement aligns with educational values and student well-being (UNESCO, 2021).

Applications of Artificial Intelligence

The applications to artificial intelligence in the present days are as follows:

1. Artificial Intelligence in Automotive Industry.
2. Artificial Intelligence in Robotic.
3. Artificial Intelligence in Travel and Transport.
4. Artificial Intelligence in Social Media.
5. Artificial Intelligence in Data Security.
6. Artificial Intelligence in Finance.
7. Artificial Intelligence in Gaming.
8. Artificial Intelligence in Healthcare.
9. Artificial Intelligence in Astronomy
10. Artificial Intelligence in Education.
11. Artificial Intelligence in Surveillance.
12. Artificial Intelligence in Entertainment.
13. Artificial Intelligence in E-commerce.
14. Artificial Intelligence in Agriculture.
15. Artificial Intelligence in Space Exploration.
16. Artificial Intelligence in Manufacturing.
17. Artificial Intelligence in Defense.
18. Artificial Intelligence in Natural Language Processing(NLP) etc.

Lots of benefits of artificial intelligence like increased productivity, creation of new job opportunities, reduced human error, faster decision-making, automation of repetitive tasks and improved customer experience and so on.

Conclusion and Suggestion

The AI in today's environment plays a significant role in empowering youth and should prepare the students to face the business challenged boldly through AI. Dave Waters said "Predicting the future isn't magic, its artificial intelligence" Artificial intelligence refers to the development of computer system, making them able to perform tasks which require human intelligence such as visual perception, speech recognition, decision-making and translation between languages. In simple words, artificial intelligence is the study of the way in which computers can be made to copy the way human 'think'. The application of artificial intelligence in almost in every field

Abbreviations and Acronyms

AI	:	Artificial Intelligence
NLP	:	Natural Language Processing

References:

- <http://www.google.co.in>
- http://en.wikibooks.org/wiki/computer_science: Artificial_Intelligence
- <http://www.library.thinkquest.org>
- <https://www.javapoint.com/application-of-ai>
- The Business Line, New Delhi.
- The Financial Express, New Delhi.
- The Hindu, New Delhi.
- India Today