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# The Use of Artificial Intelligence in Various Fields

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***Abstract:*** ***Intelligent machines will ultimately substitute or improve on human abilities in many fields. Artificial intelligence is the intelligence displayed by software or robots. It falls within the umbrella of computer science. As it has improved human lives in many ways, artificial intelligence is growing in popularity as a subject of study in computer science. Over the past two decades, artificial intelligence has significantly boosted performance across a variety of industries, including manufacturing, services, and education. Artificial intelligence research has given rise to the fast-expanding field of expertise system. Artificial intelligence applications have a significant impact on many aspects of life because expert systems are frequently employed nowadays to handle complicated problems in domains like education, engineering, business, medical, weather forecasting, etc. The quality and efficiency have increased in the fields using artificial intelligence technologies. This paper provides an overview of this technology and the application of artificial intelligence in various fields, paying particular attention to how this technology is used in the field of education and discussing its significance, search methods, inventions, and future.***

## I. BACKGROUND

A classical philosopher's attempt to characterise human thought as a symbolic system can be seen as the forerunner of modern artificial intelligence (AI) technology. The programmable digital computer, a device built on the impersonal foundation of mathematical reasoning, was the culmination of this endeavour and was created in the 1940s. Some scientists were inspired by this device and the concepts it represented to start thinking seriously about the prospect of developing an electronic brain. The first decades of the twenty-first century saw a boom in investments and interest in artificial intelligence (AI), despite the fact that this concept had to advance slowly over the years (e.g., the AI winter, 1950–1980) due to factors like limited computer power, funding cuts, etc.

## II. PROBLEM STATEMENT

This study attempts to evaluate on a tool to help you guide your team towards building the right product.

## III. OBJECTIVE

*1)* To programme computers, in particular, to perform tasks that require intellect from humans.
*2)* To understand the working of AI in various industries.

## IV. RESEARCH METHODOLOGY

Secondary Data collection method through different websites and articles.

## V. LITERATURE REVIEW

According to a fairly broad classification, there are sixteen categories for artificial intelligence (Becker et al. 2000; Singer et al. 2000; Chen and Van Beek 2001; Hong. Stone et al. (2001) and Stone (2001). According to Peng and Zhang (2007), Zhou et al. (2007), and Wang et al. (2007), these include reasoning, programming, artificial life, belief revision, data mining, distributed AI, expert systems, genetic algorithms, systems,knowledge representation, machine learning, natural language understanding, neural networks, and theory of computation. The author used a flow diagram to demonstrate the overall structure of this document and the connections between the various fields of AI because many users of this article might need a quick overview of the field, as shown in Figure 1. An overview of some of the key domains of AI is provided below (Chan and Darwiche (2002), Pool and Zhang (2003), Bhattacharyya and Keerthi (2001), Chawla et al. (2002), Al-Ani and Deriche (2002)).

## VI. INTRODUCTION

Artificial intelligence is the study of intelligent machines and software that can reason, learn, gather knowledge, communicate, manipulate and perceive objects. It is different from Psychology and computer science in its emphasis on perception, reasoning and action. AI is a technology that makes machines smarter and more useful, using artificial neurons and scientific theorems.

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It is used in many applications, such as Expert systems, Intelligent computer aided instructions, Natural language processing, Speech understanding, Robotics and sensory systems, Computer vision and scene recognition, Neural computing, Fuzzy logic, Evolutionary computing, Computer aided instructions and Hybrid artificial intelligence.

## VII. WHAT IS ARTIFICIAL INTELLIGENCE?

"Artificial intelligence is the study of concepts to create robots that react to stimulus in a way that is analogous to how people typically react, given the human ability for thought, judgement, and intention. Such machines ought to engage in critical evaluation and internal selection of opposing viewpoints. These robots were made with human talent and labour, but despite being imitations, they ought to behave with life, spirit, and sensitivity".

## VIII. SCOPE OF ARTIFICIAL INTELLIGENCE IN DIFFERENT AREAS

### *A. Language Understanding*

The capacity to "understand" and respond to natural language is known as language understanding. translation from spoken to written language as well as translation from to switch from one natural language to another.

Computational linguistics:
Speech Understanding
Semantic Information Processing
Language Translation
Question-Answering
Information Retrieval

### *B. Learning And Adaptive Systems*

The ability to adapt behavior baged on previous experience, and to develop general rules concerning the world based on such experience.

Cybernetics
Concept Formation

### *C. Application of Artificial Intelligence Techniques in Medical Area*

Artificial intelligence techniques have the potential to be applied in almost every field of medical area.

Evolutionary Computation in Medicine

Evolutionary computation is the general term for several computational techniques based on natural evolution process that imitates the mechanism of natural selection and survival of the fittest in solving real-world problems. The most widely used form of evolutionary computation for medical applications are „Genetic Algorithms" (Holland, 1975). „Genetic Algorithms" based on the natural biological evolution are the most widely used form of evolutionary computation for medical applications. The principles of Genetic algorithms have been used to predict outcome in critically ill patients. MRI segmentation of brain tumours to measure the efficacy of treatment strategies is also done through evolutionary computation. They have also been used in computerized analysis of mammographic micro calcification.

### *D. Application of Artificial Intelligence in Accounting Databases*

Artificial intelligence is being looked into as a possible solution to the issues with accounting databases. The following are some issues with the accounting database systems that are currently in use. Accounting information does not satisfy the needs of decision-makers. The computerised accounting databases cannot be processed by humans or are not understood by them. System usage is challenging. The numerical data are the main focus. The analysis of vast amounts of data with or without the decision maker's direct involvement can be helped by integrating intelligent systems with accounting databases (either with the decision maker or independently of the decision maker). In order to identify which accounting events are recorded by the system, the systems can analyse the data and help the users comprehend or understand transactions (Daniel, 1991). We can store and retrieve knowledge in natural language thanks to artificial intelligence. Some artificial intelligence technologies or methods support a deeper comprehension of the events recorded by the accounting system. In order to capture context, symbolic or linguistic data are prioritised over just numeric data.

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The database's intelligence is added by the artificial intelligence and expert system to help users. Such algorithms assist users by sifting through vast amounts of data without the users' direct involvement. These models also support decision-makers who must make decisions quickly by offering alternate options for the search and assessment of data.

*E. MRI Brain Tumour Analysis*

A general regression neural network (GRNN) based automatic three-dimensional classification approach was suggested for the MRI brain tumour pictures. This method's classification accuracy and time consumption rates were both good. Least Squares Support Vector Machines (LS-SVM) was another intelligent classification method that was suggested. It distinguishes between normal and pathological brain MRI data slices. Because the false negative rate for LS-SVM was so low in comparison to other classifiers, this method had a greater classification accuracy. A lot of research is being done since brain MR pictures automatically detect abnormalities.

*F. Application of Artificial Intelligence Techniques in the Computer Games*

Playing games is one of the most popular uses for computer technology. In the evolution of computer games, they have grown from modest text based to the three-dimensional graphical games with complex and large worlds. The systems as graphics rendering, playing audio, user input and game artificial intelligence (AI) when put together provide the expected entertainment and make a worthwhile computer game. Artificial intelligence is the most important part of every computer game and playing the game without artificial intelligence would not be any fun. If we remove artificial intelligence from computer games, the games will be so simple that nobody will be interested in playing the computer games anymore. Without the game AI, the winning would not be difficult at all. Artificial intelligence is used to solve common problems in the computer games and provide the features to the games. Specifically, non-playing character (NPC) path finding, decision making and learning are examined. There are several ways that AI contributes to modern computer games. Most notably are unit movement, simulated perception, situation analysis, spatial reasoning, learning, group coordination, resource allocation, steering, flocking, target selection, and so many more. Even context dependent animation and audio use AI.

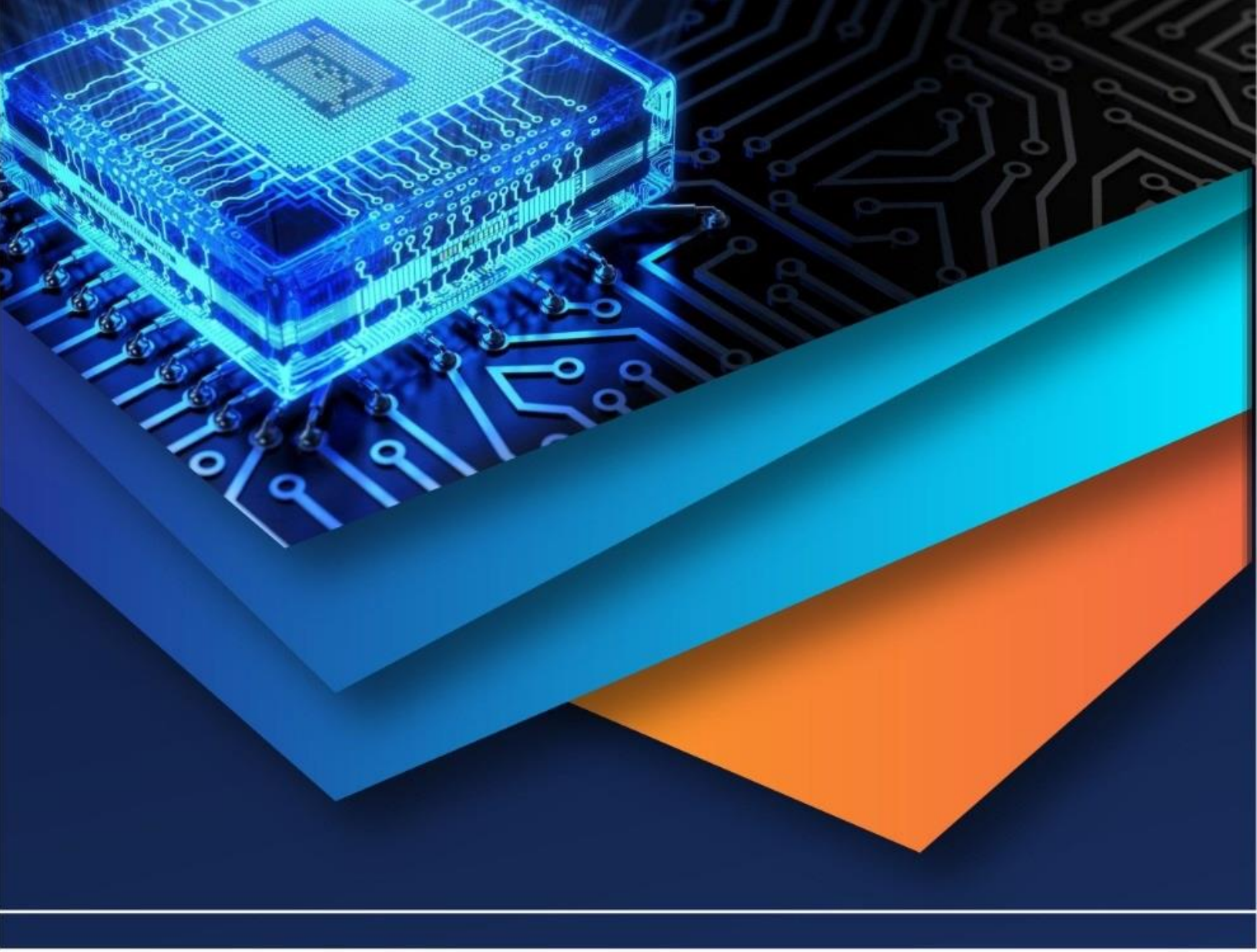
## IX. THE FUTURE OF AI

It is true that many professionals are conducting research in the area of artificial intelligence, and robots will only get stronger in the future. But because everything that has benefits also has drawbacks, there may be moral dilemmas involving machines. For instance, who will be liable if a machine designed for delicate work makes a mistake? We cannot hold a doctor responsible for a diagnosis produced by an AI programme that provides the incorrect result. Therefore, policymaking will be required. And in the future, these types of machines will be created that can converse with humans in a manner similar to that of a person and can make educated guesses about what has to be done when.

## X. CONCLUSION

The study of artificial intelligence has given robots the capacity to think conceptually and analytically. The artificial intelligence techniques from the past 20 years have made a significant contribution to several fields. Artificial intelligence will keep taking on more and more significance across a range of industries. This essay is focused on the idea of artificial intelligence and its application to many fields, with a focus on "the field of education." As we are all aware, artificial intelligence refers to professional-supplied machine intelligence. As you are all aware, artificial intelligence has made every area of our lives easier, whether we are writing an essay, playing a game, or making a significant choice. Multiple expert minds can be integrated in a machine to create a force greater than a single expert mind. One machine is capable of performing numerous labour - intensive tasks, and it never gets weary. Now that emotional robots of this kind are being developed, people's loneliness will be eradicated. But it also has another feature that might endanger us. Another is that it is unable to replicate human emotion. Therefore, it is best to only employ machines when they are actually necessary.

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