Artificial Intelligence

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***Abstract*: The purpose of this paper is to provide an overview of Artificial Intelligence (AI) and its future scope in the field of human-robot interactive communication and other research areas. Artificial Intelligence as the name suggests is not a natural intelligence but it is the intelligence of machines which is programmed to make them act like a human in terms of thinking, analyzing and processing. It is the branch of Computer Science Engineering that aims to create intelligent machines. Its aim is not only to understand human intelligence but also to explore more logical and desirable functions which could be more effective as compared to human beings.**

***Keywords*: Human-robotic interaction, artificial, intelligence, reasoning, machine learning, programming languages.**

1. Introduction

AI is made up of two words-'artificial' which means something not natural and 'intelligence' means the ability to think and understand. Intelligence consists of following factors such as reasoning, perception, learning, linguistic intelligence, etc. In terms of Computer Science, it is defined as the study of "intelligent agents" that can use past experiences to affect future decisions which can be really important characteristics for any intelligent machine. In order to give a proper definition, it can be defined as the field of study that illustrates the efficiency of machine learning just similar to human beings and its capability to take actions to definite behavior.

AI technology is increasing day by day. Many computer science and technology scientists are predicting that in the coming future it can be proved to be highly dominating and it will manage about 85% of consumer interactions without humans. It can be clearly seen as how we can comfortably command Siri, Alexa or Google assistant to do some sort of stuff for us.

2. History

The term AI was first introduced in 1956. Topics like problem-solving and symbolic methods were explored in 1950 than in 1960s, the US defense started working on it and started training computers to adopt basic human intelligence.

3. Difference between AI and machine learning

Both AI and machine learning are the terms of Computer Science. Artificial Intelligence is the study of computer science in which we can learn to train the machines so that they can do things and behave like human being, therefore it is an intelligence where all the capabilities of humans are desired to be adopted by computers whereas Machine Learning is the learning in which machines can learn on their own without being programmed. It is one of the applications of artificial intelligence where it provides the ability to learn automatically using past experiences.

Some other differences are- AI aims to increase the probability of success and accuracy whereas MI's aim is to increase accuracy and it does not really bother about success. AI is decision making whereas MI allows the system to learn new experiences from the previous data.

4. Some popular programming languages for AI

A. Python

It is considered to be the best programming language for developing the AI and a very obvious reason is its simplicity. The python belonging syntaxes are very simple and very easy to learn therefore, users can implement many AI algorithms in it without any difficulty. It also takes short development time in comparison to other developing languages such as C++, Java or Ruby.

B. Lisp

Lisp is considered as one of the oldest and suitable languages for all AI development. It is well known for its exceptional prototyping capabilities and easy dynamic creation of new objects with the functioning of automatic garbage collection.

C. Java

It is also considered as a very good alternative for the development of AI. It provides various benefits such as easy debugging, easy to use, better user interaction, etc. but it is a bit hard for the users to learn and master this language.

5. Need of AI

1. It can help machines to find out the solutions of complicated problems just like humans do and applying them in algorithm formats.
2. To create specialist systems that can exhibit intelligent behavior with the ability to learn new things.

6. Ethics of AI

The AI has made the human life much easier than before. Its one of the main advantages is that it completes the production process faster which contributes to lower the production cost. It can save much time, money and effort. The AI machines can

work effectively and can substitute humans in dangerous places, such as nuclear reactors, fire extinguishing, space programmes, defense, etc.

However, in the other hand, there are some drawbacks also of this technology. The AI machines replaces human resources which could increase un-employability, it can kill many people if misused by terrorists,

It can make people lazy to use their own mind and creativity because of the over dependence on the machines.

7. Applications of AI

It is playing a very vital role in the following fields such as,
1. Defense
2. Finance
3. Industry
4. Education
5. Health, etc.

8. Conclusion

AI has developed a very good understanding of the nature of intelligence and provided many important applications in a broad range of areas. It can do better functioning than human experts but there are many debates on this topic whether as AI is a threat for human existence or is it beneficial to the humanity. Many famous scientists such as Elon Musk, Bill Gates, etc. are not against this technology but are warning about the possible dangers of super-intelligence.

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