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A Review on Artificial Intelligence and its Application in Modern Times

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Abstract — As name implies artificial intelligence is making the machines like human that can think like human and can do the work like human. Artificial intelligence is the intelligence exhibited by machines or software. It is the subfield of computer science. Artificial Intelligence is becoming a popular field in computer science as it has enhanced the human life in many areas. Artificial intelligence in the last two decades has greatly improved performance of the manufacturing and service systems. Study in the area of artificial intelligence has given rise to the rapidly growing technology known as expert system. Application areas of Artificial Intelligence is having a huge impact on various fields of life as expert system is widely used these days to solve the complex problems in various areas as science, engineering, business, medicine, weather forecasting. As the artificial is good for us same like it can be dangers' for us. So in this paper, we have tried to find out how AI affects our modern life firstly We tried to explain what artificial intelligence is. Than from what artificial intelligence is got or branches of artificial intelligence. Here We also give the fields where AI is used like in transportation, in journalism, in playing game etc and how artificial intelligence work or we can say the searching techniques are used for finding the solution. And at last I tried to find that what inventions are done in this field and what will be future of Artificial intelligence.

Keywords: Artificial Intelligence, Heuristic, Transportation, Exhibited, Rapidly

I. INTRODUCTION

Artificial intelligence is the established name for the field, but the term "artificial intelligence" is a case of much confusion because artificial intelligence can be defined as the opposite of real intelligence. Artificial intelligencis defined as the concept of solving the problem in such a manner where the complex problem deals with the help of machines in more specific human like fashion or in simple words .It is combination of two terms machine + human being. Intelligence can solve the hard problems easily [4]. It means human intelligence in a machine that can be in robots, computer or any other electronic equipment. In artificial intelligence problems are solved regarding the real world in it human being give commands and problem is solved by the machines. With the invention of digital computers, time consuming and error-prone numerical computations are done with relative ease and accuracy. It then struck to humans "why not seek the help of the computers in the reasoning process". As all know human brain is more complex, complicated and advanced with respect to intelligence. And then human tried to simulate that intelligence on computers. The basic idea for intelligence in machines came from Turing test .An article was published in mind magazine by Turing in the year of 1950 ,which give birth of a controversial topic "can machine think". In modern time artificial is used in many fields' like- medical diagnosis, stock trading, robot control, law, remote sensing, scientific discovery, finance, online and telephone customer service, heavy industry, transportation etc. there can be as many definition of intelligence as many there are expert each define intelligence in his own way[3].

II. MEANING OF ARTIFICIAL INTELLIGENCE

Artificial intelligence is combination of two words artificial+ intelligence. Where artificial means not real or natural and by intelligence means the ability to reason, to trigger new thoughts, to perceive and learn intelligence is. Artificial intelligence can be defined that area of computer science that mainly focus on the making on such kind of intelligent machines that work and give reaction same like human beings. It is combination of many activities which includes for designing the artificial in computers that are like- recognizing the speech, Learning, Planning, solving the problem. When any system adapts itself according to situation in any environment is called Intelligent [5]. In other words it can be defined as programming such machines which can think and act with some level of human intelligence is known as artificial intelligence. In 1956, john McCarthy used the term artificial intelligence. Artificial intelligence can be defined as efficiently use of limited resources [6]. So artificial intelligence can be defined as making computer programs to solve complex problems same like as human solve the problems. So it is also divided into two parts one is to solving the complex problem by the machine and second is same like human beings. The term artificial intelligence is also used to describe a property of machines or programs: the intelligence that the system demonstrates. Artificial Intelligence is

combination of science and engineering for making the machines which behaves in intelligent manner. In it many fields are combined like philosophy, psychology, and computer science.

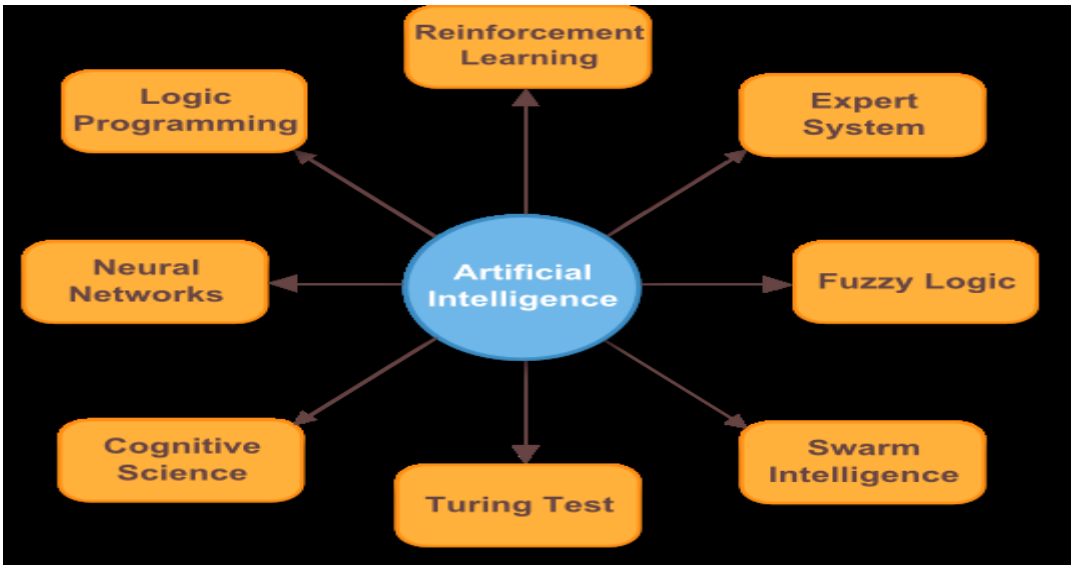

Figure 1. Factors included in AI

AI technologies have matured to the point in offering real practical benefits in many of their applications. Major Artificial Intelligence areas are Expert Systems, Natural Language Processing, Speech Understanding, Robotics and Sensory Systems, Computer Vision and Scene Recognition, Intelligent Computer- Aided Instruction, Neural Computing. From these Expert System is a rapidly growing technology which is having a huge impact on various fields of life. The various techniques applied in artificial intelligence are Neural Network, Fuzzy Logic, Evolutionary Computing, and Hybrid Artificial Intelligence.

III. AREAS OF ARTIFICIAL INTELLIGENCE

A. Language understanding:

The ability to "understand" and respond to the natural language. To translate from spoken language to a written form and to translate from one natural language to another natural language.

- Speech Understanding
- Semantic Information Processing (Computational Linguistics)
- Question Answering
- Information Retrieval
- Language Translation

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. Problem solving:

Ability to formulate a problem in a suitable representation, to plan for its solution and to know when new information is needed and how to obtain it.

- Inference (Resolution-Based Theorem Proving, Plausible Inference and Inductive Inference)
- Interactive Problem Solving
- Automatic Program Writing
- Heuristic Search

D. Robots:

A combination of most or all of the above abilities with the ability to move over terrain and manipulate objects.

- Exploration
- Transportation/Navigation *6.3* Industrial Automation (e.g., Process Control, Assembly Tasks, Executive Tasks)
- Security
- Other (Agriculture, Fishing, Mining, Sanitation, Construction, etc.)
- Military
- Household

E. Games:

The ability to accept a formal set of rules for games such as Chess, Go, Kalah, Checkers, etc., and to translate these rules into a representation or structure which allows problem-solving and learning abilities to be used in reaching an adequate level of performance.

- Particular Games (Chess, Go, Bridge, etc.)

F. Providing Services to Customer:

Now a day's, for providing services to the customer artificial intelligence is using in place of human being. When any person do calculation like preparing bill, handling account information he can do calculation error but machine do calculation properly and no mistake is done by the machine. Artificial intelligence also has a component that is natural language processing with the help of which human being can directly communicate with machine in their natural language and can get services directly.

IV. SEARCHING TECHNIQUES IN AI

In AI for finding the solution of problem searching has to be done because solution is not known in advance. For it AI programs are developed which do the searching process for solution because solution steps are not known beforehand and have to be found out.

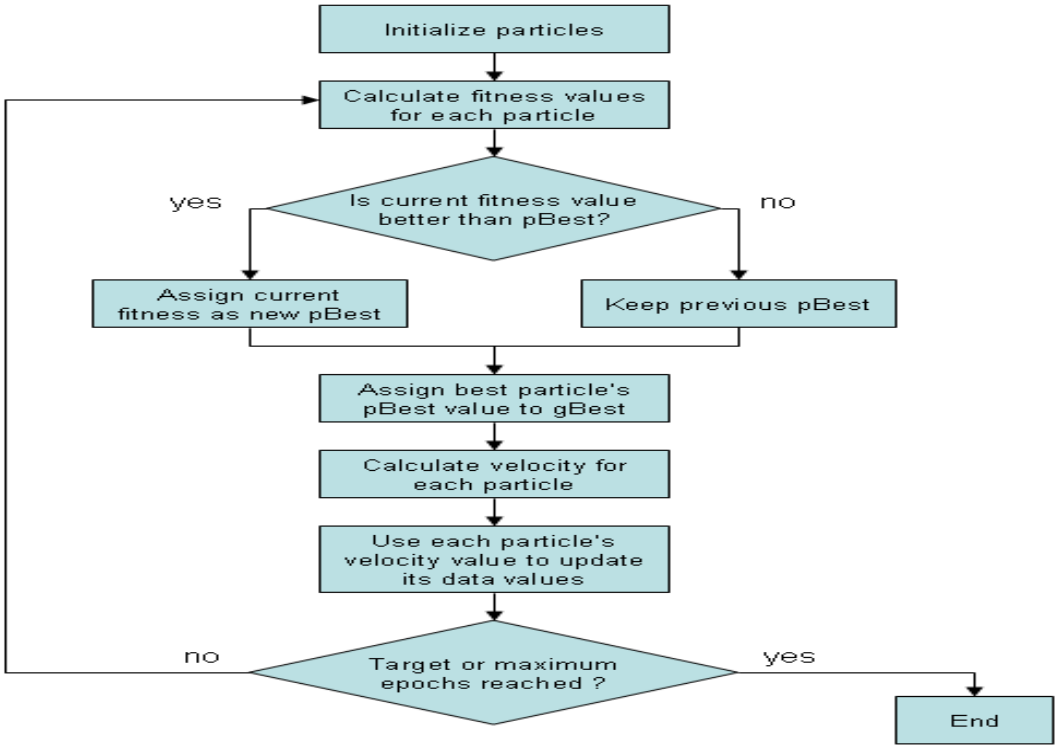

Figure 2. Example of Searching in AI

For doing searching following steps are required

1. Initial state.
2. A set of legal operators.
3. Goal state or final state.

Searching Techniques are broadly classified into

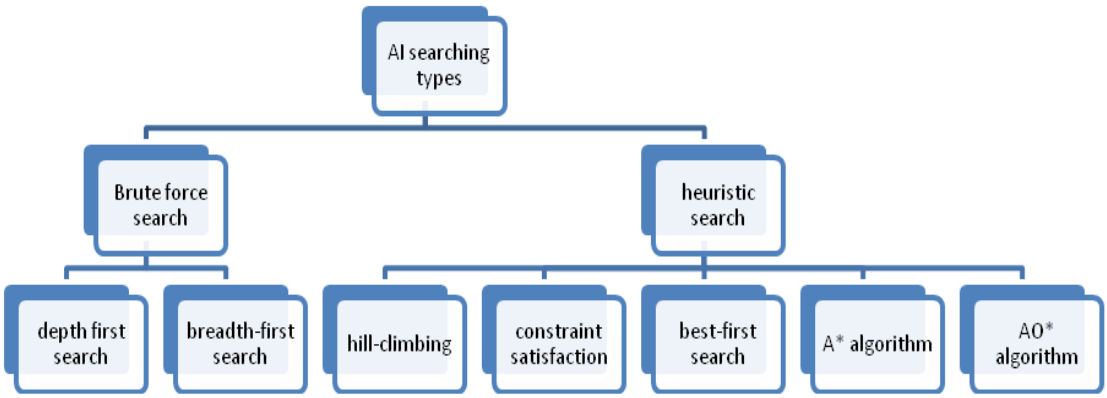

Figure 3. Different Searching Techniques in AI

V. THE FUTURE OF AI

It is true that many experts are doing research in the field of Artificial intelligence and in future machines will become more and more powerful. Today many experts are working on to link human mind with machine using AI techniques. So in future now machine will work using thinking process of human mind. But anything which has advantages there exist disadvantages also so there can be ethical issues related to machines. For example, if any machine is made for very sensitive work and did any mistake than who will be responsible. If an AI program is made for diagnosis purpose and it gives the wrong answer then we cannot claim the doctor for it. So for it policy will have to make.

VI. CONCLUSION

The field of artificial intelligence gives the ability to the machines to think analytically, using concepts. Tremendous contribution to the various areas has been made by the Artificial Intelligence techniques from the last 2 decades. Artificial Intelligence will continue to play an increasingly important role in the various fields. This paper is based on the concept of artificial intelligence, areas of artificial intelligence and the artificial intelligence techniques.

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