An overview of Artificial Intelligence

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ABSTRACT

In the future, intelligent machines will totally replace or enhance human capabilities in many areas. Artificial intelligence is the science to make more intelligent machine. It is one the best field of computer science. Artificial Intelligence is becoming a well-known field in computer science as it has enhanced the human life in many areas. Anyone can make their career in artificial intelligence. Artificial Intelligence is an growable technology as it has no end This paper gives an overview of this technology and the application areas of this technology. Artificial Intelligence is one of best emerging technology that try to simulate human reasoning. It emphasizes the creation of intelligent machines, that how that work and reacts like humans.

Keywords: *Artificial Intelligence (AI), Applications of AI, Types of AI, Scope in AI*

1. INTRODUCTION

Artificial intelligence is one of the latest technologies that are try to simulate human reasoning in AI system. The art of bringing learning , adaption and self organization to the machine is the art of Artificial intelligence. John McCarthy coined the term in 1956 as branch of computer science concerned with making computers behave like humans. It is the study of the computation that makes it possible to perceive reason and act. It makes machines smarter and more useful. It works with the help of artificial neurons (artificial neural network) and scientific theorems (if then statements and logics).Artificial intelligence is the ability of a computer program to learn and think . Artificial Intelligence is an scopical area of computer science that features the creation of intelligent machines, that work just like humans.

Artificial is defined in different approches by various researchers during its evolution such as "Artificial Intelligence is the study of how to make computers do things which at the moment , people do better. Creating a machine capable of understanding the concepts behind the words is important because it allows for more human like conversations as well as improved translation. There is also fascinating research into detecting human emotions through audio and video cues. In particular, this paper provides a full review of recent developments within the field of artificial intelligence and its applications. The work is targeted at new aspirant's t to the artificial intelligence field. It also reminds the researchers about some of the issues they have already known.

2. TYPES OF ARTIFICIAL INTELLIGENCE

Basically, Artificial Intelligence is divided into various types/forms. There are two main types of Artificial Intelligence, which are based on capabilities and functionalities of Artificial Intelligence.
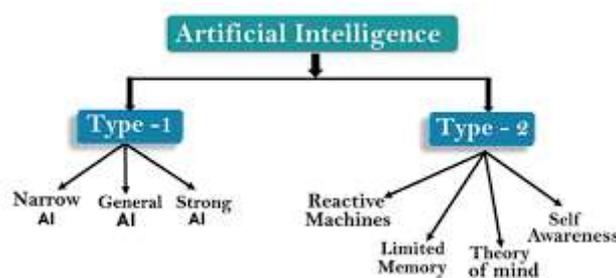

Fig Types of AI

2.1 AI Type -1: Based on Capabilities

1. Weak AI or Narrow AI:- Narrow Ai Is the one type of AI which is able to perform a dedicated task with intelligence. The most common AI which is available in the world is that the Narrow AI.
Narrow AI cannot perform beyond its limitations. as it is only trained for one particular task.
2. General AI:-General Ai is one another type of AI, which could perform any intellectual task with efficiency just like a human. The idea behind the general AI is to make such a system which could be smarter and think like a human by its own.

3. Super AI: Super AI is a level of intelligent of system at which machines could surpass human intelligence , and also can perform any task better than the human. It is an outcome of general AI. Some special features of String AI, include capability, ability to think, to reason, solve the puzzle , make judgments , plan and learn by its own.

2.2 AI Type-2:-based on Functionality

1. Reactive machines:- Purely reactive machine are the most basic types of artificial intelligence. Such AI system do not store memories or past experiences. These type of AI only focuses on the current scenarios and react on it as per possible best action. Google's AlphaGo is the one example of reactive machines.
2. Limited Memory :- These type of AI can store past experiences or some data a short period of time These machines can use stored data for a limited time period Self-driving cars are the best example of Limited Memory systems.
3. Theory of Mind:- This is the AI which understands the human emotion, people, belifs and be able to interact socially. This type of machines are still not developed, but researcher are taking lots of efforts to make this type of machines.
4. Self-Awareness:- Self-Awareness AI is the future of Artificial Intelligence. These machines will be super intelligent , and will have their own sentiments and self-awareness. These machines will be smarter than human mind.

3. APPLICATION OF ARTIFICIAL INTELLIGENCE

3.1 Applications of AI

AI has been dominant in various fields such as –

1. Gaming:- AI plays an vital role in crucial in strategic games such as chess, tic-tac-toe, etc. Where machines can think large number of possible position based on heuristic knowledge.
2. Natural Language Processing:- It is possible to interact with the computer that understands natural language spoken by humans.
3. Expert Systems:- There are some applications which integrate machine, software , and special information to impart reasoning and advising. it provide explanation and advice to the users.
4. Vision Systems:- These type of system understand , interpret and comprehend visual input on the computer.
5. Speech Recognition:- Some intelligent systems are capable of hearing and comprehending the language in terms of sentences and their meanings while a human talks to it.
6. Handwriting Recognition:- The handwriting recognition software reads the text written on paper by a pen or on screen by a stylus.

4. THE CHALLENGE OF THE ARTIFICIAL INTELLIGENCE

This work grew out of the challenges that AI possesses in view of the rise and growing nature of information technology worldwide that has characterised business- and non-business organisational development (Barzilay et al. (2002), Baxter et al.

The necessity for research in AI is being motivated by two factors that are (i) to give the new entrants into the AI field an understanding of the basic structure of the AI literature (Brooks (2001), Gamberger and Lavrac (2002), Kim (1995), (ii) the level of interest in AI that has prompted an increased interest and huge investments in AI facilities. Interested researchers from all disciplines wish to be aware of the work of others in their field, and share the knowledge gleaned over the years (Rosati (1999), Kaminka et al. (2002),

By sharing AI knowledge, new techniques and approaches can be developed so that a greater understanding of the field can be gained. To these ends, this paper has also been written for researchers in AI so they can continue in their efforts aimed at developing this area of concentration through newly generated ideas, Instantly they would be able to push forward the frontier of knowledge in AI. In the section that follows this paper presents a brief explanation of some important areas in Artificial Intelligence.

In another section, a comprehensive review of the literature along the major categories of artificial intelligence is presented. The review raises some important questions with serious research implications for those who are interested in carrying out research artificial intelligence. These questions if well addressed will solve some unresolved technical and non-technical issues carried over from the last decade to the present time

5. FUTURE IN ARTIFICIAL INTELLIGENCE

Artificial Intelligence has coming with a very long way in the last few years.. But there's still a large amount of work required to develop strong AI. It is also necessary to further develop methods for detecting human emotions and actions. This is a multi – disciplinary subject and will require advancements in Psychology, Linguistics, Machine Learning, Natural Language Processing and Image Processing to learn how

humans behave to detect emotions and to analyze human expressions and body language. Here are some ways listed below in which AI is going to be helpful to us in the near Future:

a. Automated Transportation: - We have already begun to see the beginning of smart cars or self-driving cars, but for now these kinds of vehicles need to have a driver at the wheel for safety. Instead of these very exciting ongoing developments, the technology isn't perfect yet, and it is going to take a while for the common people to accept these smart vehicles to use widely. The U.S. Transportation Department has released definitions of different levels of automation since Google began testing a self – driving car in 2012.

b. Cyborg Technology: - Being human has its own flaws and one of the biggest disadvantages of being human is simply our own body and brain. Now, according to a researcher Shimon Whiteson it is possible to augment ourselves with computers in the near future in order to improve our own natural abilities.

c. Attaining Dangerous Jobs: - Robots have already begun to attain some of the most dangerous jobs like defusing a bomb. Well, technically they are not robots; they are drones, which are being used as the physical counterpart in bomb defusing, which requires a human to control them, instead of using an AI system. In spite of whatever their classification is, they have also saved thousands of lives by taking over these kinds of jobs in the world.

d. Improved Elder Care: - For most of the elderly people, living everyday life and doing the basic needs is still a struggle, and for doing that most of them to hire outside help to manage their care or they just have to rely on family members. As the computer scientist at Washington State University Matthew Taylor says 'AI is at a stage where replacing this need isn't too far off'. Home robots would be able to help the elderly people with their everyday tasks and will allow them to stay independent and in their homes for as long as possible, which results in improving their overall well-being.

6. CONCLUSION

The term "Artificial Intelligence" include within its scope a wide range of technological processes, making it tricky to understand and hence create policy for. This literature synthesis attempts to provide a broad overview of the key technologies that compose the umbrella term referred to as AI and the key common factors/issues to its different disciplines. As is evident from this literature synthesis, the field of AI offers tremendous promises as solutions and optimisation for a variety of problem statements we face. However, equally importantly, AI also throws up key normative and practical questions of ethics and governance that will play a central role with increased adoption of these technologies. While the some of the tensions between efficiencies promised by AI, and the criticisms pointed to by those advocating greater caution in its adoption may appear irreconcilable, it is important to delve into these points of conflicts. So that are able to rethink, existing system and create new once.

7. REFERENCES

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