ARTIFICIAL INTELLIGENCE-A SURVEY

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ABSTRACT

Artificial intelligence in the last two decades is very much improved in the performance of the manufacturing and service systems. Study in the area of artificial intelligence has given rise to the rapidly increasing 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. Research in AI has built upon the tools and techniques of many different disciplines, including formal logic, probability theory, decision theory, management science, linguistics and philosophy. However, the application of these disciplines in AI has necessitated the development of many enhancements and augmentation.

Keywords: - *Turing Test, Gaming Industry, Weather Predictions, Expert System*

1. Introduction

The term Artificial Intelligence was given by John McCarthy in 1956.Numerous definitions for AI have been proposed by scientists and researchers, its volume is huge, next to unimaginable. It is not well-organized or well-formatted. It keeps changing constantly. Intelligence is commonly considered as the ability to collect knowledge and reason about knowledge to solve complex problems. In the near future, intelligent machines will replace human capabilities in many areas. Artificial intelligence is the study and developments of intelligent machines and software that can reason, learn, gather knowledge, communicate, manipulate and perceive the objects. John McCarthy coined the term in 1956 as branch of computer science concerned with making computers behave like humans.AI technologies have matured to the point in offering real practical betterment 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.

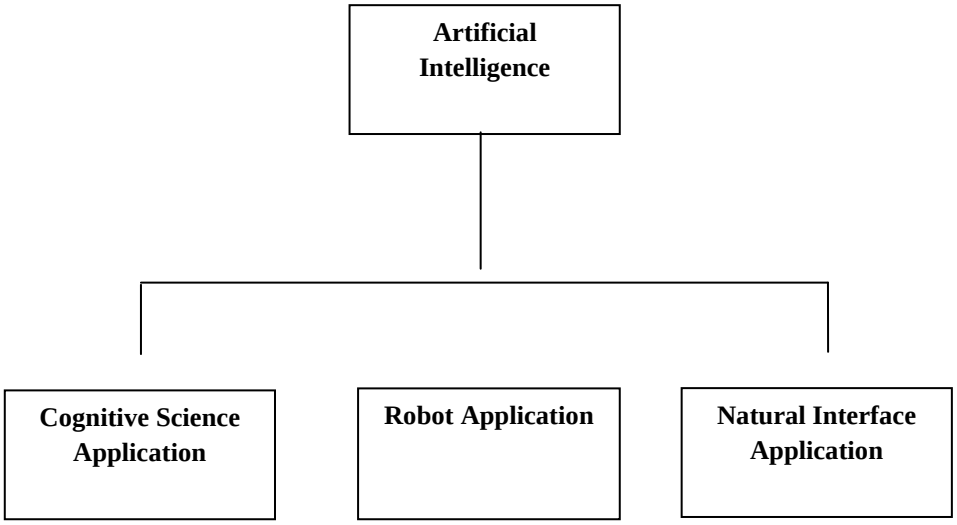
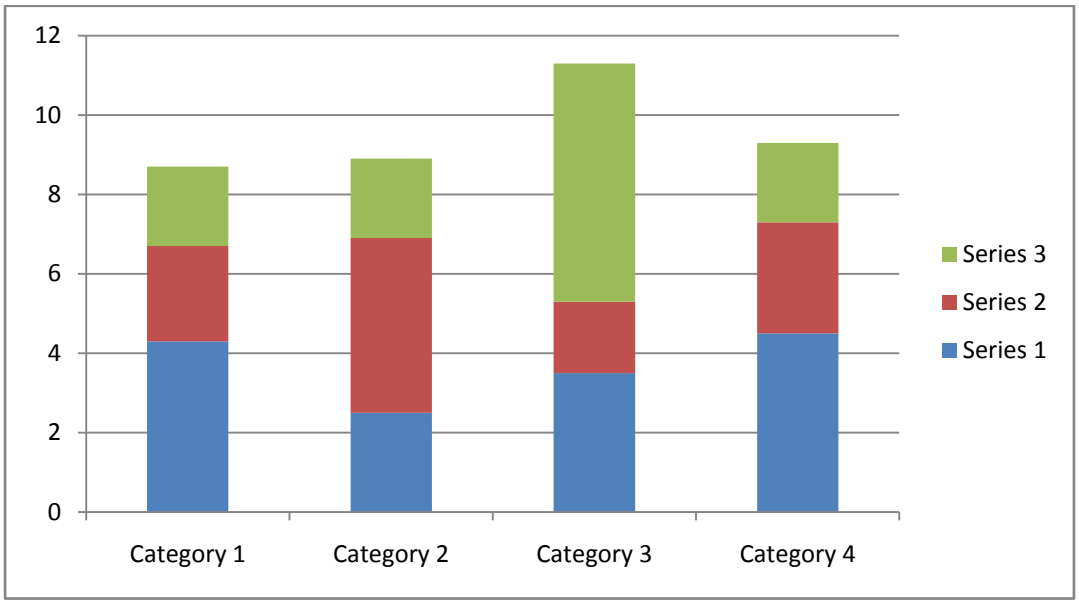


Fig 1:-Overview of Artificial Intelligence

- Expert System
- Visual Perception
- Natural Languages

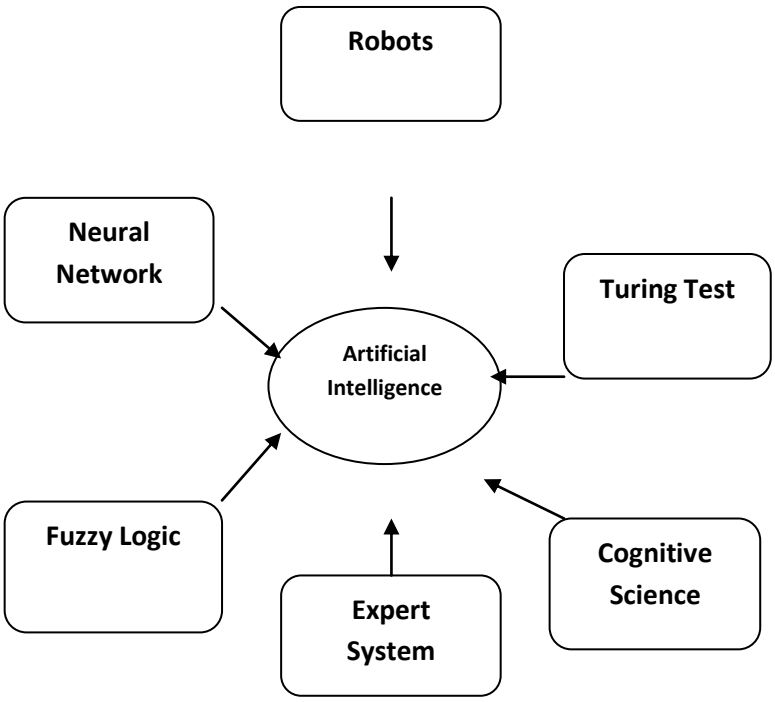


"Neural Network" "Fuzzy Logic" "Evolutionary Computing" "Hybrid AI."

Fig 2:- Papers published on different Artificial Intelligence

2. Description

Areas of artificial intelligence are as follows-



Healthcare re-imagined:-AI promises the capability to automate medical diagnostics by mining patient records and the scientific literature. This technology will allow doctors to focus primarily on dimensions of care while utilizing their experience to guide the process.

Robots:-Robotics are no where near achieving this level of artificial intelligence, but they have made a lot of progress with more limited AI. Today's AI machines can replicate some specific elements of intellectual ability. Industrial robots for moving, spraying, painting, precision checking, drilling, cleaning, coating, carving, etc.

Entertainment:- The entertainment industry is expected to transform in a bit different manner. The use of AI will make the industry more interactive, personalized, engaging in the future. Gaming ? AI plays crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where machine can think of large number of possible positions based on heuristic knowledge. Natural Language Processing ? It is possible to interact with the computer that understands natural language spoken by humans.

Applications of artificial intelligence

Artificial intelligence can play a key role in the sectors like healthcare, agriculture, personal care, home automation, banking and transportation. Currently, AI in its very basic form is influencing human life in the form of automated cars, virtual assistants, image recognition software, computer driven online conversations and so on. All these are instances of AI's role in the betterment of human life. We can also see a lot of global interest among the technological advancements

like Cognitive computing, Machine learning and Natural Language Processing. These are all small journeys to make machines smarter and self-adaptable compared to the old spoon fed, preprogrammed computing devices.

Artificial Intelligence Categories

AI is a broad topic which can be broken down into subcategories. The three main categories of AI includes:

- **Artificial Narrow Intelligence (ANI)**:-ANI is the weakest form of Artificial Intelligence. The machines with ANI capabilities can do a single task only. For example if the machine is intended to do chess game, it won't be able to do anything else. ANI machines use a logic driven process to replicate human actions. It sifts through massive amounts of information and accurately extracts the relevant information. Many of the AI applications that we see currently are based on ANI.

- **Artificial General Intelligence (AGI)**:-AGI machines hold strong intelligence or match with human level intelligence. AGI machines can successfully perform any intelligent tasks that a human being can do. AGI can be applied contextually where it use cognitive capabilities to arrive at decisions like human beings. It can simulate human reasoning and can extend it capabilities to a broad range of circumstances. We are still in the early stages of implementing AGI for addressing many real world problems.

- **Artificial Super Intelligence (ASI)**:ASI machines are much smarter and faster than the best human brains in every field that human beings excel. It is considered to be the greatest opportunity for human beings at the same time industry experts are concerning that whether it can become the greatest threat as well.

Roots of AI

Artificial Intelligence has identifiable roots in a number of disciplines, particularly

- Philosophy
- Logic/Mathematics
- Computation
- Psychology/Cognitive Science

Future of Artificial Intelligence

Today the role of AI is confined to specific narrow tasks and they don't have adaptable intelligence that humans exhibit, the influence of AI is drastically growing. Research and Markets, a leading Market Research organization's Artificial Intelligence Market - Global Forecast to 2020" report states that "the artificial intelligence market is estimated to grow from USD 419.7 Million in 2014 to USD 5.05 Billion by 2020, at a CAGR of 53.65% from 2015 to 2020. AI holds the power to redefine the current work environment in IT enterprises especially the way Knowledge capital and people capital are deployed. As labor force adapts to the demands of a new technology revolution, it leads to economic prosperity as well. It brings in tremendous opportunities in enterprises to deploy knowledge and people towards value creation as opposed to process management. To tap this huge potential, technology(AIaaS).With companies in India and abroad have started offering Artificial Intelligence platform as a solution or as a service AI getting more mature, let us

expect humans will get more empowered with self-learning machines that can create a smarter competition with the human brains and that will probably redefine the whole business ecosystem.

3. Conclusion

We have sketched two ways in which the ALP agent model building upon many different developments in Artificial Intelligence, can be used by ordinary people to improve their own human intelligence. It can help them express their thoughts more clearly and coherently, and it can help them make better choices. We believe that the application of such techniques is a fruitful direction of research for the future and a promising area for collaboration between researchers in AI and researchers in more humanistic disciplines. 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.

4.Acknowledgement

We would like to thank our guide who gave us an idea to write this paper and share our knowledge regarding Artificial Intelligence.

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