

Review Paper on Artificial Intelligence

S Kalidass, Department Of Computer Science and Engineering
Galgotias University, Yamuna Expressway Greater Noida, Uttar Pradesh
E-mail id - s.kalidass@galgotiasuniversity.edu.in

ABSTRACT: *There is various researches going on in artificial intelligence, and this improves lots of things in artificial intelligence in the last twenty years-and also capability of both service systems and manufacturing. This branch of computer science deals with the treatment of computers such as humans. There are various parts covered in artificial intelligence like expert systems, neural networks, game play, robotics and natural language. At present, any computer displays artificial intelligence (which is capable of simulating human behavior). In the field of game play there are greatest progress in AI. Nowadays the computer chess programs which is very used by the users are now allow beating humans. Nowadays neural network is the most growing area of artificial intelligence, which is proving victorious in many areas such as natural language processing and voice recognition. There are various programming languages that is known as languages of artificial intelligence because they are used almost exclusively in AI applications. LISP and Prolog are two most common programming languages, which is used in artificial intelligence. Artificial intelligence is working a lot to make human effort less but with development.*

KEYWORDS: *Artificial intelligence, machine learning, neural network, Turing test.*

INTRODUCTION

Artificial intelligence is a branch of computer science and this is concerned about how computers behave as a human. Artificial intelligence (AI) is responsible for developing intelligent software's and machines[1]. The word Artificial means man-made (Anything, which is made by human beings) and intelligence means the capacity to have different skills or having the capacity to learn different skills and knowledge through which a complex problem can be solved[2]. There are various cognitive functions which are integrated with intelligence such as; planning, language, memory, perception and attention. From the last ten years the field of artificial intelligence has grown up[3]. Intelligence is basically available in both humans and artificial intelligence. For the solving problems, reasoning and learning humans use their intelligence to solve a complex problem. This is basically defined for development of software which is used for solving complex problems using application processes. There are a number of tools used in Artificial Intelligence that belong from various branches such as; computer science, mathematics, biology, neuron science, psychology, philosophy and sociology[4]. Because of that there are various types of problems which relate to the different branches can get the solution in AI. This is the area of study which wants to make the systems/computers well educated/smart. This work (whatever work you want to perform in a computer/system) is not done by any commands and through any encodings in the place of artificial intelligence itself. John McCarthy came up with the concept, which is named with artificial intelligence and this concept came in 1995[5]. A test (Turing test) will be performed to check if a machine can react like a human or not?[6]. There is the various areas of artificial intelligence that are divided into sixteen (16) parts. That all parts are; programming languages, reasoning problems, life of artificial, distributed artificial intelligence, constraint satisfaction, belief revision, natural language understanding, knowledge representation, theory of computation(TOC), machine learning, data mining, genetic algorithms, systems, neural networks, proving methods of theorem.

Artificial Intelligence:

There are various branches that come under artificial intelligence such as; computer science, neuron science, philosophy, psychology, math's, sociology, biology ... etc. and these all branches provide various results related to their area. The design of machines behaves like humans commenced to become the core or important part in the mind of scientist's, this is possible that a machines/computers are able to think as a human can think. And this concept is given by a mathematician named as Alan Turing (A.T.).

And Alan Turing was able to evaluate that hypothesis and escalate the question either "machines can think"? After number of tests (later this is known as the Turing test) it is disclose that machines are capable of thinking and learning like humans. The Turing test uses a practical approach that is able to identify whether machines can respond like humans.

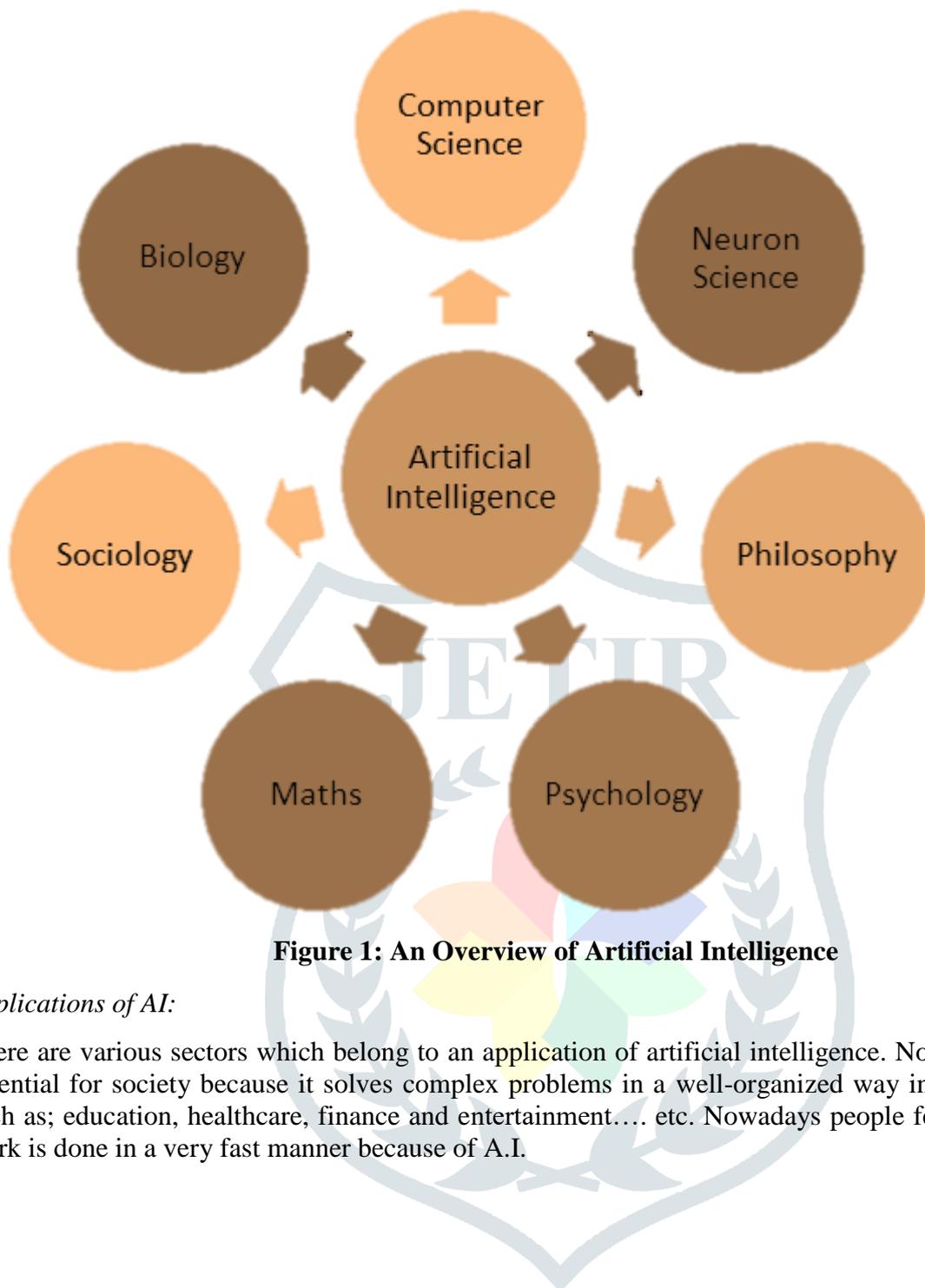


Figure 1: An Overview of Artificial Intelligence

Applications of AI:

There are various sectors which belong to an application of artificial intelligence. Nowadays this is very essential for society because it solves complex problems in a well-organized way in various industries, such as; education, healthcare, finance and entertainment.... etc. Nowadays people feel comfortable and work is done in a very fast manner because of A.I.

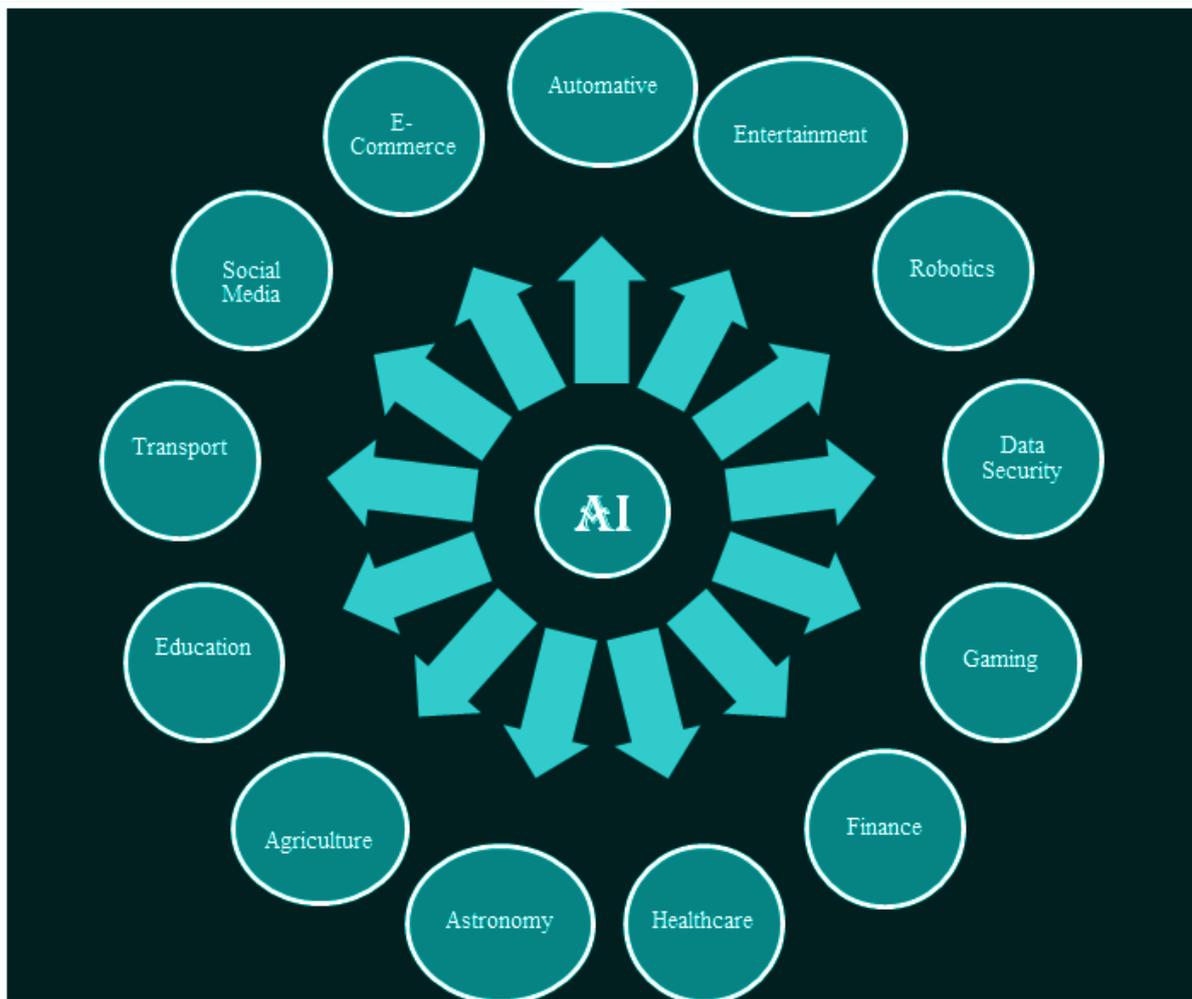


Figure 2: Applications of Artificial Intelligence

These are various sectors, which is an application in artificial intelligence. So below just introducing these all sections in brief. In our daily life there are various applications using by us without knowing such as; voice recognition, machine learning platforms, virtual agents, deep learning platform, decision management, Ai optimized hardware, text analysis and NLP, Robotics process automation, biometrics, computer vision , entertainment.

1. Social Media

There are various social media sites that are used by the people on a daily basis such as; Twitter Telegram, Instagram, Facebook and many more which contain a huge number of profiles of the users. For that here huge numbers of data of the users need to be stored and managed in a well-planned way. Artificial intelligence can arrange and control amounts of data and also can examine a huge amount of data to check the latest hash tag, trends in social media and also find out the various needs of all the users. Because nowadays the social media is popular for various reasons, through that various types of business also done, because through the social media information will be shared to the various people at the same time.

2. E-commerce:

In the field of E-commerce, here AI also provides a very impressive technical user interface to the industry. AI basically collects your likes and dislikes and according to that AI gives recommendations about any products such as; size, color and brand of that product.

3. Automotive:

Nowadays, there are various industries that are working on self-driven cars, which help us to provide safe and secure journeys. AI is used in various automotive industries, for the better performance user gets the virtual assistant, which is provided by the artificial intelligence. Such as Alpha virtual assistant, Tesla; Talbot is introduced by Tesla, which is an intelligent virtual assistant.

4. Entertainment:

There are various entertainment services used by the people in daily life such as; YouTube, Netflix or Snap tube, Amazon. And these all services are AI based Applications that provide recommendations for next shows or programs with the help of machine learning or artificial intelligence algorithms.

5. Robotics:

Artificial intelligence plays an important role in development of robotics. In general, robots do various repetitive tasks, and for that programming will be done in that robot. But with the help of artificial intelligence, can make smart/intelligent robots that can perform various tasks with their self-experiences and here no any programming is required in that. For Example: Recently the two intelligent humanoid robots are developed named as Erica and Sophia that can behave and talk like humans.

6. Data Security:

Nowadays cyber-attacks are very common. So for the Security reason there various types of data must be secured, every organization/company has secure their data from cyber-attacks is very important. Because cyber-attacks are increasing in a very large number in this digital world. So artificial intelligence is basically also used for security reasons. It makes users' data more safe and secure and there are various artificial intelligence platforms which provide services to the users like this.

7. Gaming:

There are various games which are played by the number of users per day, such as; Ludo, Chess, Knife shooter...Many more. So there are some strategies defined in that game. So for that purpose artificial intelligence is used here, where the large number of possibilities that are needed to think by the machines.

8. Finance:

Artificial intelligence is also a match of finance with the same. The finance industry is apply machine learning in automation, adaptive intelligence, and financial processes. To make the finance sector more effective artificial intelligence here used.

9. Healthcare:

In the healthcare sector, artificial intelligence also plays an important role, because the help of the artificial intelligence healthcare industry is growing very fastly. Applying artificial intelligence in the healthcare industry makes things better and faster. Using artificial intelligence doctors are provided with various real-time data about the patients at the same time, and also nowadays patients can get treatment before hospitalization. These all things happen because of artificial intelligence.

10. Astronomy:

Artificial Intelligence is very helpful to solve complex problems. And the technology of artificial intelligence is also very helpful for the purpose of understanding the whole world such as the origin of that particular thing, and how that thing works, etc.

11. Agriculture:

Nowadays there are various things in the agriculture field done automatically, For Example: solid and cropping grass done automatically, predictive analysis... etc. Agriculture is one of the fields, where various types of resources are required such as money, labor and also time is one of the important resources to get the best result. So artificial intelligence is very useful for the farmers that help farmers to do their work with less effort using this technology.

12. Education:

Artificial intelligence also helps to make education more technological. This is also able to automate the various types of results for the students so that teachers can get more time to teach their students. And chat boat of AI, as a helping assistant they can help the students in the education field. In the future AI will play

an important role in the teaching field, they can help students as a personal virtual tutors that students are able to study from anywhere in the world and also don't have any restrictions about the time.

13. Transport:

Artificial Intelligence also plays an important role in the field of travelling and transporting or can say in travel industries. Artificial intelligence also does various types of work itself. There are various types of work in the transport field such as best road routes or air routes for the customers, making all the arrangements during the travelling like requirement of hotels, foods...etc. And this also uses the chatbot which is powered by AI, which is able to interact with the customers for the fast and better response.

Neural Networks:

A neural network basically, a sequence of algorithms that attempt to identify the elementary correlation through a process in a set of data that mimics the way the human brain operates. In this sense, neural networks refer to any system of neurons, either artificial in nature or biological. It is also an interconnected node[7].

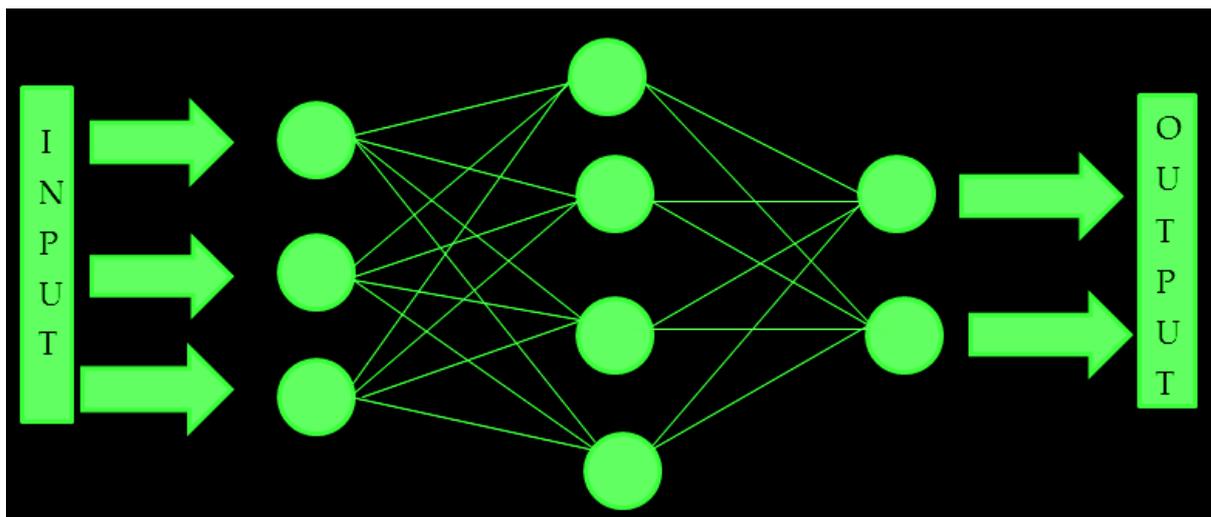


Figure 3: Neural networks in Artificial Intelligence: Feed forward

Machine learning:

The study of the computer algorithms that enhance the quality of the system through own experiences are known as machine learning. It is a part of artificial intelligence. Machine learning is becoming increasingly famous, and equally important. People find that it is much easier to get a machine to learn something from the facts than to spend time explicitly teaching it. The major factor is the quality of the learning algorithm[8].

Turing Test:

This test is a procedure of investigation into artificial intelligence (AI) to determine is a computer capable of thinking like a human. The test is named Turing test on the name of the inventor of this named as Alan Turing, founder of the Turing test and computer scientist, mathematician.

Turing suggest that a computer may be considered as artificial intelligence when this can copy responses of human at particular situations. There are three terminals are required for original Turing test, and all of them are physically divided from the other two. First part is run by a computer, while the next two parts are run by the humans. In the Turing test basically human behavior is converted into intelligent behavior with the help of the Turing test that humans cannot do.

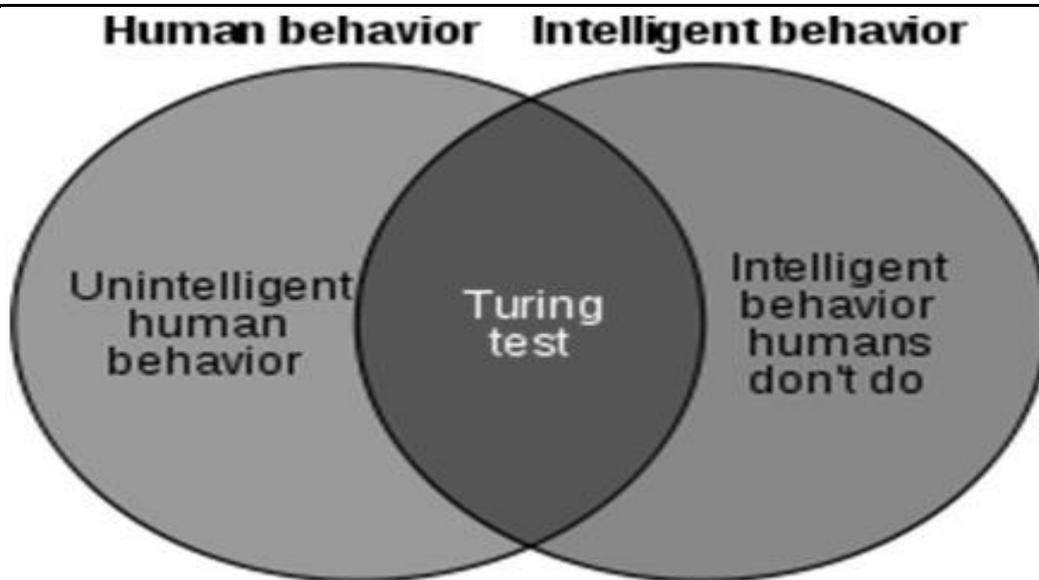


Figure 4: Turing Test

Importance of Artificial intelligence:

Artificial intelligence transform the way individual companies grow around the world by representing competition and new production factors business drive profitability. To notice the opportunity for AI, all most all companies in the whole world are earlier actively growing into different strategies of artificial intelligence. As well as, they must center on developing manage systems of AI, which is aligned with the ethical values and ethical that guide to positive response and authorize people. They are known as innovators for doing so. Successfully implementation of solutions of Artificial Intelligence (AI) with the help of introduction, numerous industries covering the earth can advantage from grow profits and unmoving rely on growth of economic. To take advantage of on this good time, fortunate implementation of artificial intelligence finds eight strategies for that which focus on acquire a human-centric talk to and taking responsible measures and innovative for the application. The manufacture of quick machines in different industries maintains the alive of illustrative structures, their demanding capacity and understanding (basic materials). When artificial intelligence has equal to or greater than that the intelligence of humans, social and political changes will naturally come about, all the benefits of AI if it is felt that it is necessary for humans to populate the creation. Is not needed. Current advances in the artificial technology reflect the orbit of communication satellites in capacity with their 486 processors. In the hereafter, self-replication of A.I can simply be construct with all person territory exterior the Earth, and mankind will not at all be up to oppose similarly on clear space.

CONCLUSION

Artificial intelligence can reach great recognition and proceed for human kind required to its many probability. Most systems of the artificial intelligence have the capacity to learn, which permit people to upgrade their concert above the time. The assumption of AI surface the part of the technology is at an initial or investigational degree[9][10]. The confirmation propose that AI can supply actual worth to our existence. I base my operations on executing tasks to access large number of details of information, processing it, examine it, and solving many problems, in the context to our working algorithms. Required to the current computing architecture of the cloud, for any organization this technology becomes more affordable. AI is these days being put in nearly every field of learning through various models like ANN (artificial neural network) and SVM (support vector machines). We must be able to realize and appreciate the outcome of each technological tendency. As per my prospective, right now as per contemporary period of AI disclosure and consequently; that must obtain this modify and welcome it by embracing AI and taking steps towards a better society.

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