ARTIFICIAL INTELLIGENCE: A MARVELLOUS TECHNIQUE &ITS APPLICATIONS

Mohit Yadav[1], Priya Singh[2], Palak Keshwani[3]

[1]B.E. Student , CSE Dept ,KITE, Raipur(C.G)

[2]B.E. Student , CSE Dept ,REC, Raipur(C.G)

[3]Asst. Professor CSE Dept ,KITE, Raipur(C.G)

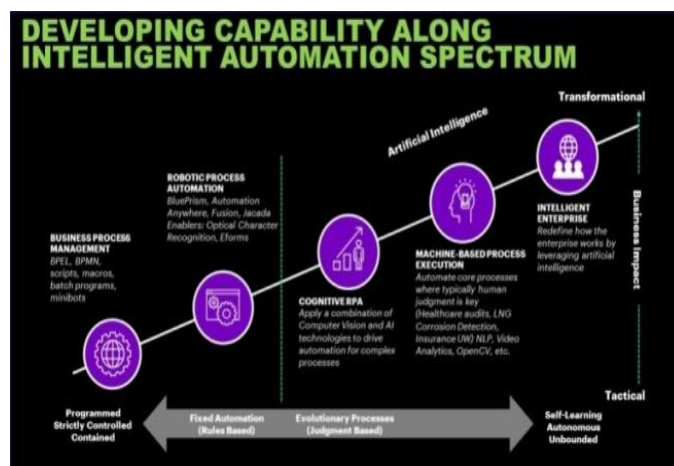*mohit.my844@gmail.com*, *priya0121singh@gmail.com*, *palakeshwani@gmail.com*

ABSTRACT

Artificial intelligence plays a very important role in the development process to make people advance. This paper tells about artificial intelligence and gives a brief description on implementation of artificial intelligence in various fields or era. It also describes the implementation of artificial intelligence from the past up to future. It discuss the implementation i.e. application of AI in various field like in medical, defense, transportation & communication, gaming, expert system, s/w engineering etc. It is a good platform to move ahead in the world of advance technology.

Keywords:- *Artificial Intelligence (AI), Machine Intelligence (MI), Natural Intelligence, Computer Science, Intelligent Agents, Humans, Operating System, Calcus Ratiocinator, Reasoning, Remote Sensing, Medical Diagnosis, Robes, Artificial neural network, Medical Diagnosis*

1. Introduction

Artificial Intelligence is also called as Machine Intelligence.AI is developed to make equipment more and more accurate and efficient in daily life. In other words, AI is the field of computer science which tells about the usage of computer by the construction of computational mechanism for any type activities in daily life. It is man made learning provided to a computer to solve the complex problems and to generate that type of system which runs itself by commanding once (for eg. Operating system). In simple word Artificial Intelligence is an intelligence shown by a computer or machine as compared to natural intelligence shown by human beings and animals. In the field of computer science, research on AI is the simple study of Intelligent Agent of any devices which show their environment and the action taken by the machine to achieve a goal.

History of AI

In 1300 CE an idea came in the mind of **Ramon Llull** to build a machine which can solve complex reasoning by using the concept of Calcus ratiocinator (calculating machine) and then as per the idea that machine can think ,learn ,create as same as humans. The Field of AI research was born at a workshop at **Dartmouth College** in 1956. **Attendees Allen Newell (CMU), Hebert Simon (CMU)** and their student are the founder and leaders of Research.

2. Applications of AI

Now a days the implementation of AI in various field is increasing in huge amount (for eg. Development of new technology likes 3D Printers and Robes, etc.) And the programs developed to perform various tasks like medical diagnosis, electronic trading, robot control and remote sensing. AI is most helpful in the tremendous development of industries, transportation, public sectors, etc. Today the AI researcher have founded a many advanced tools for solving any type of difficult problem in computer science. Russell & Norvig (2003) describe the various application developed in AI laboratories.

Some of the important application that are implemented and some are on the way are as follow:-

I. Robotics

The robotics is a branch which deals with making of machines which have an intelligent (i.e.AI) work as per programmed eg. *Robes, industries machines, planet rovers etc.*

Mainly robots are the artificial agent. It is a simple machine which is controlled by computer programs as directed by the user. Few applications of robotics can be seen as follows-

- In industries the robots are used to perform *heavy tasks* which cannot be done by a single person.
- Fixing machine parts like designing and modification in vehicles, etc.
- In the field of defense, robots can be used in diffusing bombs, etc.
- A robo named **SOFIA** is programmed which can talk, give answer and act like human beings.
- **Planet Rovers** are the robots used for **exploring distant planets** because they can do much of their work alone without any commands from earth as it takes a long time to send radio signal from earth to exploring planets .

II. Medical Field

In today's generations, AI plays a very important role to save the lives of many creatures by using advanced techniques. One of the most effective techniques is Artificial Neural Network. It is used as**clinical decision** support systems for medical diagnosis like **ConceptProcessing technology in EMR software**.

There are many several tasks which can beperformedin the medical field by using concept of AI.Some of those are:

- Computer-aided interpretation of medical images. This type of system is formed to scan the digital image of affected area e.g. **Computed tomography**. Basically this type of application is used in detection of tumor.
- Heart sound analysis.
- Drug creation.
- Robots for caring elderly.
- For training purpose **Avatars** are used instead of patients and design treatment plan.
- During surgery robots are used for small areas.
- In **JAPAN**, an operation was led to a big success where **artificial scull** was fitted to the patient's head by using AI.

III. Gaming

In video gaming the artificial intelligence plays a very important role by making a game's feature a classic and advanced to the people. The reason behind using AI in video games is to provide **a non-player character** (i.e. responsive, adaptive and intelligent) or you can say providing a character which is similar to human intelligence. The technique of AI is used in video gaming by draw upon existing ideas or methods.

If the term AI is attached to any of the video game then the many set of algorithm are used to make that game (i.e. control theory, computer graphics and computer science). In some games automated computation are used to get predetermined and limited responses to predetermined and limited inputs. The firs computerized game using AI is made in 1951 and publishes in 1952.

EXAMPLES:-

- Creatures(1996)

A creature is an artificial life program where the user "hatches" small furry animals and teaches them how to behave. These "Norns" can talk, feed themselves, and protect themselves against vicious creatures. It's the first popular application of machine learning into an interactive simulation. Neural networks are used by the creatures to learn what to

do. The game is regarded as a breakthrough in artificial life research, which aims to model the behavior of creatures interacting with their environment .

- Sid Meier's and Alpha Centauri (1999)

- Halo :Combat Evolved (2001)

A first person shooter where the player assumes the role of the Master Chief, battling various aliens on foot or in vehicles. Enemies use cover very wisely, and employ suppression fire and grenades. The squad situation affects the individuals, so certain enemies flee when their leader dies. A lot of attention is paid to the little details, with enemies notably throwing back grenades or team-members responding to you bothering them. The underlying "behavior tree" technology has become very popular in the games industry (especially since Halo 2).

IV. Manufacturing of Forest Product:-

- To get the good quality wood based product in the market as per demand of the customer's requirement.

- To overcome the costly test on the wood based product the AI is used in the form of **fuzzy logic** and **artificial neural network** are the two promising tools.

- By using this technique allows the manufacturing companies to reduce the manufacturing and testing time and cost without compromising the reliability results

V. Bank Cheque Signature and Thumb Verification system:-

To provide an authentication the signature and *thumb impressions*are used in banks, **UDAI** and at government sector. To be very perfect in verification in all these sectors the term AI and its techniques are used i.e. are artificial neural network. The main concept behind this verification is done by verifying the entered signature from the collection or set of signature which is saved already. For that the three processes are done i.e.*image pre-processing* (This technique is used for manipulation and modification and first step of verification), *feature extraction* (here we compare the other signature to signature which is going to verify), and at last the *artificial neural network.*
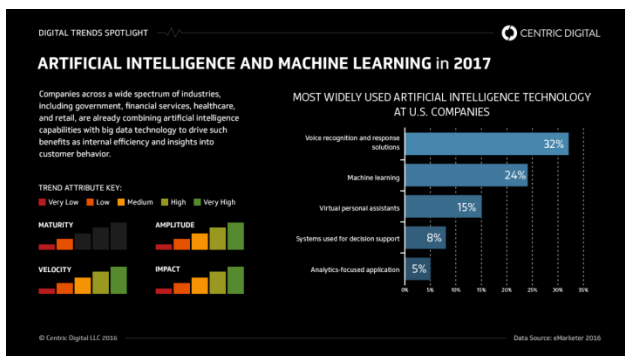
VI. Weather forecasting:-

To predict the weather the artificial intelligence techniques are used by doing analysis of past weather in form of *patterns* and then future weather is predicted.

VII. In Crime Investigation:-

In foreign countries, AI is used for identification of criminals or victims. Suppose, if an accident of murder case arrives then they can use the blood sample of the person to identify him. **DNA** of the individual can be saved and used as identification**.**

3. Modifications

- ➢ In future, we can design **robots** to perform as soldiers in armies, nurses in medical field, etc so that man force can be reduced. **Algorithm** can become a base in designing such advanced machines.

- ➢ In security, AI can be used to as **face detection machines** in **ATMs**, etc.

- ➢ It can be a big source of time saving as if everything is automatic then we don't need to waste our time in travelling for long distance.

- ➢ It can be implemented in medical field by using **artificial organ replacement** to save several lives.

4. Conclusion

This paper concludes that there are infinite applications of AI. It can be modified by using other techniques like application of algorithm, matrices as a fusion with AI.

5. Acknowledgement

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