

Literature Review on Artificial Intelligence

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Abstract- In this fast growing era of adapting the new technology's to improve the way of life the artificial intelligence is fast growing technology which can enhance the current processes and make them automatic and precise. This paper will cover the basic and historical background of AI, the current related work which is going on AI and development of AI and machine learning with this content also the some of the applications of AI which nowadays are used in various fields. For Future research on Artificial intelligence it is very important to understand the basic concept of AI this paper will cover basic fundamentals which are required for further research on this field.

Keywords-: Artificial intelligence, Machine Learning, Application, Supervised, unsupervised, reinforcement

I. INTRODUCTION

The Father of Artificial intelligence, John McCarty gives a definition of AI, Artificial Intelligence is the science of making machine intelligent by using computer program. The AI means or says that "Fittest of survival" its means that all humans are survive and state that his existence by using technical knowledge that is it says that "Todays Science is tomorrow technology".

When we use term AI?

The term AI used when the human manufactured machine simulate some functions by such that different humans minds gathered together and solve the problem and learned something.

From 1923 to 2000 valuable data is collected and apply practically i.e in 2000 interactive robot commercially available, the name is kismet that shows emotions.

The above data express that old hardworking mind are converted into new automated minds.

Old hardworking Minds  New Automated Minds

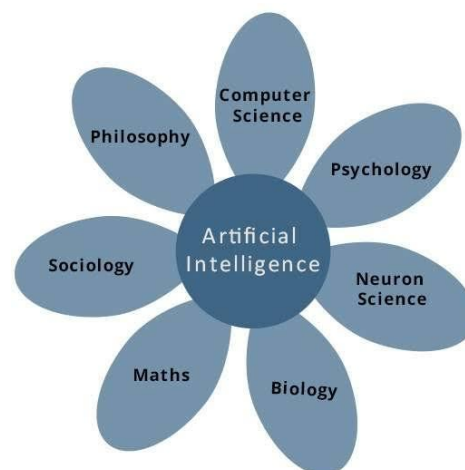


Fig. I. Diagram of Introduction to AI.

II. RELATED WORK AND HISTORICAL PERSPECTIVE

Peter Norvig and Stuart Russel in their research paper "Artificial Intelligence" have implemented the basic aspect of artificial intelligence.

Niklas Lavesson also have described about supervised type of machine learning.

Gorge F Ludger also have described structure and strategies for artificial intelligence.

1950- John McCarthy coined the Artificial intelligence.

1958- John McCarthy invents LISP programming language for AI.

1979- The First Computer controlled autonomous Vehicles, Stanford Cart was built.

1990- Major Advantages of AI:

- Natural language understanding and translation
- Time management
- Planning of multi-tasking
- Data mining
- Games
- Schedule management, etc.

1997 - Deep blue chess program developed by, Gerry Kasparov

II. ARTIFICIAL INTELLIGENCE

The father of AI John McCarthy said that ‘Artificial intelligence is a term combining the knowledge of computer science and engineering to make automatic \ intelligent machines for human use and for automation revolution. It also involve computer and logical program that used in small devices for make a machine automatic ,it also used the mathematical rules, biology, and mechanical engineering. Artificial intelligence can be categorized into following four types

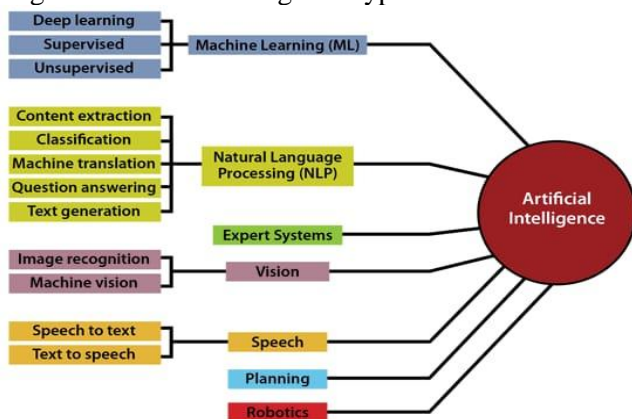


Fig. II. Sectors in AI.

1. Reactive machines
2. Theory of mind
3. Limited memory
4. Self-awareness

1. Reactive machines.

It is most basic type of AI. The definition of reactive machine is very simple “It cannot make memories also it doesn’t used any past experience or data for present decisions”. It means that it only reacts with current situations so called reactive.

Example: chess playing super computer (Deep blue).

2. Theory of mind.

Theory of mind is a term which is related to machine behavior, thinking like human, emotions ,playing activities like human etc. it also consist of decision making abilities same as human. Theory of machine is

able to derived information from human and adapt it into learning centers for how to communicate and how to treat different situations.

3. Limited theory.

Limited theory is related to data. It means that, it derived knowledge from previously learned information, stored data. Limited memory builds on observational data with addition of pre-programmed data, which is already fix in automated vehicle.

4. Self- awareness.

Self-awareness involves that type of machines consisting human like consciousness.it includes ability of recognized, replicate, human like actions also think about and understand it’s all situations. But it’s not currently available.

III. MACHINE LEARNING

Machine learning is an application of artificial intelligence.it consist of application of ability to automatically learn and improve from past experience. Machine learning also mainly focuses on the development of computer programs that access data for learning something. Its primary function is to allow the computers to learn automatically. It is very effective output for handling a data in big industries. For e.g. Robot, that handle or manage a data and also the multiple job work like super computer. Machine learning can be categorized in to four types they are as follows.

1. Supervised machine learning
2. Unsupervised machine learning
3. Semi supervised machine learning
4. Reinforcement machine learning

1. Supervised machine learning.

The supervised machine learning compare its output with the previously output and find the errors from that and after modify that errors. It also involves mapping learning from whole collection of input to target variable. (Image Source – datafloq.com)

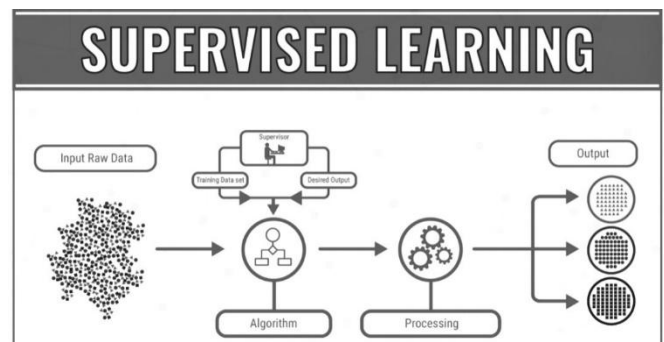


Fig. III. Diagram of supervised learning machine.

2. Unsupervised machine learning.

It relates with “How system operate function for describing a hidden structure from unlabeled data”.

It is used to train is not labelled.

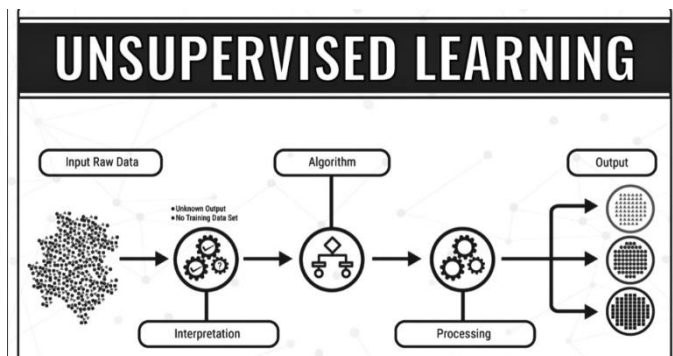


Fig. IV. Diagram of unsupervised machine learning.

3. Semi supervised machine learning.

It is in between that both supervised and unsupervised machine learning. It means that it having both labeled and unlabeled data for the use of training. But it includes unlabeled data in major amount and labeled data in minor amount.

4. Reinforcement machine learning.

The computer program which interacts with the changeable environment in which it perform some function to win against competitor. This method allow the machines and computerapplications to show the ideal behavior with a specific limit for increasing its performance.

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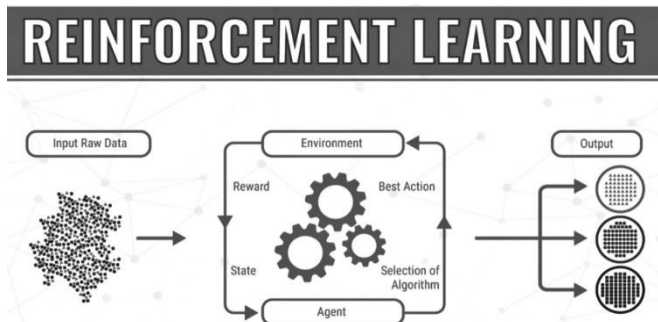


Fig. V. Diagram of Reinforcement machine learning.

IV. APPLICATIONS OF AI

A. Automatic driving cars

Once a time no one can imagine that cars can be driving automatically but now it's because converting from imagination to reality as per research two new approach i.e. "Google self-driving car" and autopilot feature introduce by Tesla now the day is not for that one day there will be on self-driving car.



Fig. VI. Self-driving car.

B. Gaming

The popular application of AI which familiar with people is video games. In past few years the huge amount of effort and money are being invested every year in order to make AI perfect.



Fig. VII. Gaming.

C. Natural Language processing

Natural Language uses machine learning to overcome meaning of text. You can extract information about people, places, etc. With this would have capabilities to express the natural language significantly.



Fig. VIII. Natural language processing.

D. Image processing and vision system:-

This system will required an enhance ability of process image and collect information. Then most well-known image processing software that perform facial recognition utilizes 2D spatial analysis by analysis the geometry.

E. *Virtual personal Assistants:-*

we all know that virtual person assistant like Siri in iOS, Cortana in window and even google also now developed it's personal is assistance in avoids by acquires information with voice recognition from the user.

F. *Security Surveillance:-*

To perform a multi task a time not a car of tea so in at a time it needs more focus after some time human brain that messing the things to monitored the cameras of order to make a great deals of a computer have to train that it will self-analysis the and look up into the action which are capture by security computers with supervised training expertise and secure algorithm can take input from security cameras.



Fig. IX. Security surveillance.

V. CONCLUSION

The upcoming era of digitalization the need of artificial intelligence application with Machine learning can cause a crucial role to make world a more easy for doing the things. This review paper on Artificial intelligence covers mainly the historical background and current related work and some of applications .from this we conclude that further research in this area can obtain better and emerging results .This paper will help the emerging researchers and students who are keen to knowing the basics of artificial intelligence .because youth interest in this field can merge higher rapidity in enhancement of this technique.

VI. REFERENCES

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