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A Literature Review on Artificial Intelligence

Ms. U. Bharathi, Ms. N. Neelaveni

UG Student, Dept of CSE, Pollachi Institute of Engineering and Technology , Pollachi, CBE, TN ,India

Assistant Professor, Dept of CS, Pollachi College of Arts and Science, Pollachi, CBE, TN , India

ABSTRACT: In this fast growing era of adapting new technologies 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. Artificial Intelligence is the technology that makes machine thinking and giving solutions to the problems as the way humans do .It's simply means making machines think like humans. This review paper shows the historical background ofcurrent attributes used in AI, Evidences of AI and the AI in future.

KEYWORDS: Artificial Intelligence, machines, human, growing technology.

I. INTRODUCTION

Artificial Intelligence (AI) is not at all new; in point of fact AI has its fountain in 1950's. Artificial Intelligence is a machine intelligence to replicate human thinking with machines which plays a vital role in developing the social economical society in recent years. AI results in more enlargements of homosapiens thereby transfigure them in terms of mobile phones, face recognition and intelligent voice etc. The rapid and dynamic pace of growth of AI has made it difficult to forecast its future path and is enabling it to alter our world in ways we have yet to comprehend. This literature review is a first tramp in understanding the draw breath prototype and debates around AI before narrowing the focus to more specific applications and subsequently, policy recommendation also the future of AI. This paper will give you an overview of past, present and future evolution of AI.

II. HISTORICAL EVOLUTION OF AI

The history of evolve of AI has been fairly contemporary, with its roots detected in the mid-20th century.
Artificial Intelligence as a science was for ceremoniously introduced at the DARTMOUTH CONFERENCE in 1956, Where John mcCarthy conceive the term "Artificial Intelligence". Firstly the evolution of artificial neurons started in 1943 and then the discovery of Turing machine in 1950 paves the way to introduce the term AI at the Dartmouth conference held at Dartmouth College in Hanover, New Hampshire. The conference gave birth to the field of AI,And gave succeeding generations of scientists their first sense of potential for information technology to be of benefit to human beings in a profound way.

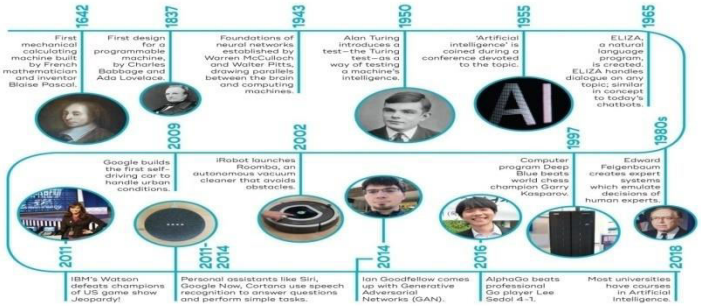

Fig 1. History of AI

A. AI HISTORY AND EVOLUTION IN INDIA –AN OVERVIEW

In India's case the first initiative on AI in India was managed as early as the 1960's by professor H. N. Mahabala at the Indian Institute of Technology (IIT), Kanpur. Still disquisition in AI took off in 1986 when the government of India launched the Knowledge-Grounded Computing Systems program in concurrence with the United Nations expansion Program as a part of its Indian Fifth Generation Computer Systems (FGCS) exploration program .Indian

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scientists have accepted several systems since also, similar as the design on machine restatement for Indian languages by IIT Kanpur; optical character recognition design by ISI Kolkata; flight scheduling expert system , sarani, developed by CDAC, Mumbai; a speech conflation system developed by IISC using AI and vision ways.

B. THE CURRENT SCENARIO

With the wide range of well-being that AI offers, along with the evolving public strategy for AI, India eye-witnessed the loftiest increase in the ratification of artificial intelligence-driven technologies in 2020 compared to US, UK and Japan according to a report by Pwc India, following the flare-up of nimbus contagion, India reported a 45% increase in the use of artificial intelligence, the loftiest among the major husbandry like the USA (35%), Japan (28%) and the UK (23%).

To grasp the transformative technologies while assuring social and inclusive growth in line with the government development testament, India has joined the 'Global Partnership on Artificial Intelligence (GPAI)'as a launching member to support the responsible for the moral human-centric development and use of Artificial Intelligence. It would pass over the gap between proposition and perpetration of AI by supporting slice-edge exploration and applied conditioning on AI-related precedences[1]

III. AI AND BIG DATA

The AI of moment is heavily peripheral on the collection, operation and processing of big data. Bernard Marr [2] notes that data is indispensable in AI bias understanding how humans suppose and feel, thereby speeding up their literacy process. It is cyclical – the further information there's to reuse, the further data the system is given, the more it learns and consummate the more precise it becomes. In Marr's opinion, AI's growth was before confined due to:

- The limited vacuity of data sets; and
- Their nature as sample data sets rather of real-time, real-life data.

With greater vacuity of real-time data and the adding capability to reuse large quantities of it in seconds, AI has transitioned into a data-first approach. Randy Bean[3] agrees with Marr's argument, noting that the vacuity of greater volumes and sources of data is enabling potentiality in AI and machine learning that remained quiescent for decades due to lack of data availability, limited sample sizes, and an inability to analyze massive amounts of data in milliseconds. There are three critical ways in which big data is now empowering AI:

- Big data technology – Huge amounts of data that preliminarily needed precious tackle and software can now be fluently reused; also appertained to as "commodity community."
- Vacuity of large data sets – New forms of data similar as ICR, transcription, voice and image files, weather data,
- Machine learning at scale – "Gauged up" algorithms similar as intermittent neural networks and deep learning are powering the breakthrough of AI.

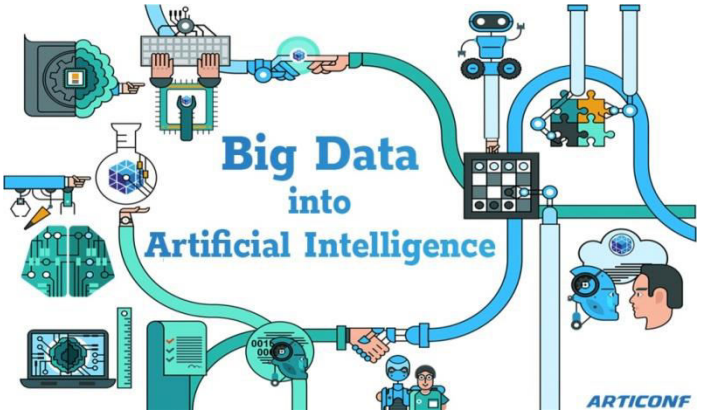

Fig 2. big data in AI

IV. AI AND MACHINE LEARNING

Machine learning (ML),a exploration branch of artificial intelligence aims to learn and to spark specific intelligent human actions and has been applied to a large variety of artificial and natural systems. Machine learning aims on developing computer programs that can pierce data and use it to learn for them, still transubstanting machines into

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thinking bias is not as easy as it may feel. Strong artificial intelligence can only be achieved with machine learning to help machines understand as humans do.

An important chance of machine learning operation aims on bracket of datasets. In medical wisdom, a combination of different data types has proven to ameliorate patient bracket and prediction. In Zhu et al.,[4] the authors have shown that a deep learning classification aggravation at an early stage. Also, Xue et al.[5] shows that the combination of different patient variables, such as level of cholesterol and patient age, permits to prognosticate pulmonary complications after gastrointestinal surgery by machine learning ways. The after studies demonstrate that machine learning ways permit prognostications in case with a veritably high success rate.

Fig 3. Machine Learning

V. EXISTING EVIDENCES ON AI

In recent times, AI has spanned over vast and distinct domains. Few of the existing applications of AI are discussed in this session

A. NETWORK INTRUSION DETECTION SYSTEMS (IDS)

It becomes delicate for large associations to cover the large quantum of data that flows through their network but delay in reporting the pitfalls or worse, being unable to prevent such attacks can dramatically affect an organization's working and clients. Thus, AI techniques and ML algorithms are now being used to automate this task or help the technicians in finding faults or anomalies on the network which prove to be fatal if left undetermined. Machine learning (ML) makes use of algorithms that learn from data and then use that learning to make future predictions. These algorithms are trained using large quantities of data that enable them to predict results on unborn data sets.[6]

B. MEDICAL AREA

AI techniques are now applied in nearly all the medical fields such as synthesizing drugs, creating and helping to test new vaccines, diagnosis of diseases in patients, and helping in treatments. Specifically on cancer opinion and treatments. Surgical robots built using Robotics which is also a sub-field of AI can prove to be salutary and assists doctors in surgeries requiring preciseness that can fluently be achieved by making use of AI-powered robots. Numerous fields in the medical area depend on analysis and pattern-finding in images and numerous doctors spend their time looking for such patterns to assist further research and treatment. Usage of image classification techniques and ML algorithms helps to automate a lot of routine work of doctors and in some case, machines may even recognize minute patterns in images that may indeed get overlooked by doctors.

C. ACCOUNTING DATABASES

Maintaining databases is a complex task when handling large quantities of data and dealing with critical information. Humans frequently have to work veritably hard to dissect the data. Integrating AI techniques have made it easier for humans to manage large amounts of data and alleviate problems. AI tools and techniques help in searching, sorting, and

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evaluating data in real-time. In recent times, developments in AI have changed accounting systems. Almost all the accounting processes have been automated. AI-powered systems and workers are required to work with these systems to maintain accurate accounting records. Due to the increased reliability and less cost of such systems, organizations are investing in Robot Process Automation (RPA) which helps in automating the account entries efficiently.

D. COMPUTER GAMES

Technological advancements have handed us with an intriguing way to pass our free time by playing games virtually. Over the years, the integration of AI in game-playing has taken games to another position. Many features and issues are resolved with the help of AI. Numerous ways are used to apply these features like Path finding, Fuzzy logic, Bayesian networks, etc. [7]. Currently, the games created are getting increasingly interactive to give the best gaming experience to the users. Also, many AI-grounded components of the game can be reused between games and platforms such as sentimental analysis, creation of real-looking NPCs with moral gestures, replies, and lip syncing with said dialogues, automated changes etc., this enhances user retention.

VI. CONFABULATION ON AI

Fig 4. AI

Artificial intelligence is the blooming technology in recent years, but artificial intelligence is not at each new. Indeed though it is growing now, this artificial intelligence technology has its roots in our ancient period itself. Infact it was being under process all those years to enhance it in all the possible ways. As a result it is now one of the substantially used technology in nearly every fields out there. Artificial Intelligence along with data science, big data, machine learning, robotics etc, paves the way to gives solution to the human problem and also makes the life of humans easier. In future AI will become one of the top most and ineluctable technology in this world. With the help of AI the future generations will get to know how brilliant their ancestors are to make such a thing possible. But at the same time Comparing the AI of moment to the early days of the internet, Jeremy Straub[8] points out that the lack of regulation in the latter case is what allowed the internet to develop to its full eventuality. Amitai Etzioni & Oren Etzioni [9] are also not in favour of general AI regulation. According to them:

- AI does not retain a provocation of its own, unlike humans. The chances of intelligence being turned to motivation that leads create trouble are relevant only for the purposes of science fabrication.
- The regulation of AI at this stage will be grueling, since AI is already being used and developed by numerous government and private entities around the world.
- Regulation might lead to restrictions, which are likely to put high human and economic costs

A report by Stanford's "One Hundred Year Study on Artificial Intelligence" [10] acknowledges that regulation in AI will be inevitability due to its ability to effect profound change. The report warns that knee-jerk regulation would be detrimental to innovation and ineffective in the long run. [11]

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VII. CONCLUSION

Artificial Intelligence has grown as an integral part of our diurnal lives, deliberately or intentionally. AI has surely made a lot of daily activities easier for human beings therefore its use and demand are at their peak in almost every possible sector. The term "Artificial Intelligence" include within its compass a wide range of technological processes, making it tricky to understand and hence produce policy for. As is apparent from this literature conflation, the field of AI offers tremendous promises as solutions and optimization 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 part with increased relinquishment of these technologies. With increased adoption of this technology also reminds us that we should regulate it duly to avoid the malfunctions now and in the future too.

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BIOGRAPHY

Ms. U. Bharathi Is A Under Graduate Student In The Department Of Computer Science Engineering, College Of Pollachi Institute Of Engineering And Technology, Anna University.

Ms. N. Neelaveni Is A Assistant Professor In The Department Of Computer Science, Pollachi College Of Arts And Science, Bharathiyar University

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