Artificial Intelligence and its impact on the way we live life today

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Abstract- Use of Technology, in every facet of life has turned upside down, the way we perceive things and execute life. There is a stark difference in the way the generation Z is growing up when compared to their predecessors. They have been exposed to fast changing technology from a very young age. Generation Z seems to absorb these changes so well, so much so, that they seem to be fish, swimming in the pool of changes happening around them. There have been many examples of disruptive technologies, which takes the place of the one existing and cause the older ones to become obsolete. One such example of disruptive technology is Artificial Intelligence, where computers or machines could be programmed in such a way that they could replicate the thinking, reasoning and decision making ability of a human brain to provide a course of action or a solution. A variety of tasks like taking decisions, making predictions, which are repetitive in nature, could be delegated to the Artificial Intelligence of machines using Techniques like Machine Learning and Deep learning. Apart from freeing up precious time consumed in mundane chores of decision making, which can be taught to a machine, there are several other benefits which are offered by AI. The various fields in which AI is in vogue is a topic of discussion. Recognizing the need of the hour, a lot of research on areas where Artificial Intelligence, can further be used, needs to be encouraged. The general public is mostly aware of terms related to Artificial Intelligence. Very little research is done in the area of how artificial Intelligence is impacting how humans are living life today .Research can also be done on the awareness of respondents on how Artificial Intelligence works . The current research article focusses on the basics of what AI is and the components of AI, areas in which AI is majorly used, and the side effect of a data overload . A lot of work ought to be done for the progress of artificial Intelligence, specifically in relation to the measurement of awareness and preparedness of the common man to the whole new level of complicated matter, which is served in a simplified fashion on their platter. Those days are not far away when there will be more than a bit of AI in every body's life.

Key words- Artificial Intelligence, Disruptive Technology, Machine Learning, Deep Learning.

Introduction:

AI is a set of technologies that can work independently and also in union with each other to extend the capabilities of a machine to imitate human functioning. Investing in AI would in the future create great business value. AI would transform the relation between human beings and machines. Machines will enable people to do exceptional work which will create more value instead of mundane tasks. Companies would increase their dependence on AI to understand data better and derive trends and insights.

New AI technologies are being added to the already existing ones at an increasing rate. Not many people understand the ever evolving technologies. These changes will naturally take time for people to get comfortable.

It is definitely a task to keep up to date to the changes happening in the field of AI. AI will soon give power to most of the activities in business processing and change the way we live life and work in organizations.

WHY ARTIFICIAL INTELLIGENCE IS CALLED 'ARTIFICIAL INTELLIGENCE

The term artificial Intelligence which is also called as machine Intelligence is named so, as the machine has been taught or programmed in such a way that it can deduce cognitive thinking which was earlier done by the human mind. The art of artificial Intelligence is to program a machine to think like a human brain and respond to stimuli and follow instructions. Robust functioning of artificial Intelligence is based on huge amount of data, proper instructions given to the machine in question and the

programming of the machine to do a required task. With the internet and smart phone becoming one of the bare necessities of life, the data that is generated by its usage is creating a perfect setting for the implementation of AI.

Artificial intelligence is when machines are taught cognitive thinking resembling the humans, and utilization of the cognitive thinking (thinking, reasoning or remembering) to do jobs like language translation, speech recognition visual perception, and decision making based on inputs. Machines are becoming more and more capable of performing tasks that required human intervention earlier. The transformation is so smooth that the end user does not sometimes realize that the technology is operating and not the other way round.

BIRTH OF ARTIFICIAL INTELLIGENCE

The birth of artificial Intelligence can be date back to late 1940's and early 1950's. Artificial Intelligence in terms of a technology user can be defined as the voice and non-voice based interactions that can be had with machines .This can be defined as artificial Intelligence at its nascentstage. The enormous technology jump in the last 30 has happened due to the constant human effort to improve the quality of life. The change that has happened can be attributed to the disruptive technologies that have come in the last few years. Disruptive technology has definitely and significantly altered the way people live their life and the way business is done. There are several examples of disruptive technologies available as on date, but the most popular ones would be Artificial Intelligence , Machine Learning , Internet of things,3D printing , Medical innovations, High speed travel, Robotics, Block chain technology , Autonomous vehicles, Virtual reality and renewable energy.

WEAK/ NARROW VS STRONG AI

Artificial intelligence per se can be broadly categorized into strong AI and or narrow or weak AI . Weak or narrow artificial Intelligence works on an algorithm to simulate cognitive function and are bound by the defined rules and do not have the capacity to respond to something beyond what has been fed in . But they seem to be perfect at performing the task they are designed to do.

Artificial Intelligence uses algorithms which could be explained as a 360 degree instruction manual to a machine to respond to a certain stimulus and a program response to instructions. The machine checks out the instruction manual to give response to an instruction and acts according to the response designed in the manual or algorithm. Basically the

inputs received are categorized by the machine to find the answer and then give it. It gives the feel of having interacted with a human on the other end. Personalized digital assistants' like Apple's 'Siri', Amazon's 'Alexa', Google's 'Home' are examples of weak Artificial Intelligence.

Strong artificial intelligence does not classify the data, but clusters the data and associates the data inputs to perform a function. E.g. one could have a machine hear 'Good Evening', or 'So cold in here' and program it to turn on the coffee machine or a heater in the room. AI could be programmed to turn on the AC, when it hears 'So hot in here'. Getting a machine to play a game would also categorize as strong AI. The computer would not recognize the animation characters, it converts the characters into a bunch of numbers to logically play. Computer playing a game is just an example of strong AI. Getting the machine to execute a function when an instruction is given would be a practical use of strong AI. Example could be in the field of robotics and autonomous cars

As mentioned in the research paper written by Pooja Agarwal, Pooja Yadav , Neelam Sharma Ruchika Uniyal ,Swati Sharma(2013) they have classified the AI applications into two types as 'Classifiers' and 'Controllers' . As per the authorsclassifies just classify the data and controllers based on the type of data perform a task.

AI skims through the huge pile of data generated by the human interacting using the internet. AI performs smart searches and collecting text and pictures, tries to make patterns in the data and performs the required tasks based on the learnings from the data processing. Processing vast amount of data generated on a daily basis is one of the most important and major application of AI. There are many revolutionary technologies that cum under the preview of AI, the knowledge of which is essential to understand the functioning of AI.

TECHNOLOGIES USED BY AI
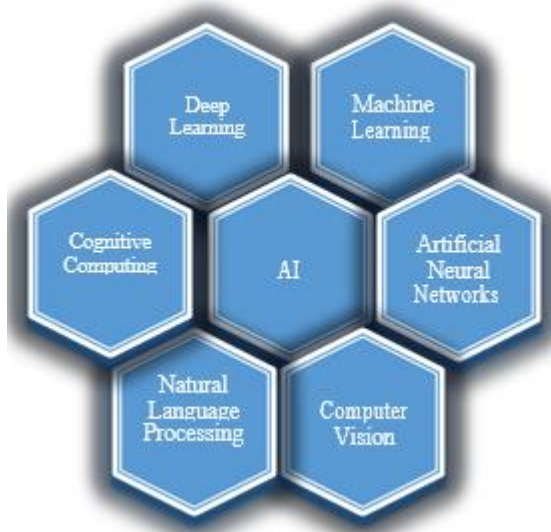
A. Learning from experience or Machine Learning:
The capability to develop to automatic learning and improve without being explicitly programmed for is machine learning. A program on that suggests new bags for purchase if you happened to look for a bag on an online site. Machine learning is being applied to life sciences, healthcare and pharmaceutical industries to help in medical image interpretation, diagnosis of an ailment, and drug development.

B. Self-educating Machines or Deep learning Yet another fragment of machine learning is Deep learning. It uses Artificial Neural Network, which is a network resembling the neural network in the human brain. An output is determine by multiple neural networks working together. The machine requires a constant check and reprogramming until the correct output is correct. Once the pattern is set the neural network can be used again. One application of deep learning is the Speech recognition by the voice assistants or search engines.

C. Artificial Neural Networks
Artificial Neural network is the technology that enables machine learning. It uses a perceptron which the machine equivalent of the human neuron. The human brain consists of a huge number of neurons that create a neural network. The perceptron creates an artificial neural network .This network helps the machine to identify objects. The machine is taught by giving image training to the computer system, by feeding huge number of images. By processing the huge number of image the system is able to finally identify the object.

D. Making Inferences from the context or Cognitive computing

Cognitive computing tries to the replicate a human thought process in a computer. The cognitive computing strives to archive information processing capabilities and human like behavior. The use of cognitive computing is to improve the interaction between the humans and the machines.

E. Understanding the language / Natural Language Processing The ultimate goal of NLP is to teach a computer system to understand human language in the actual context and produce logical responses. An Example to NLP could be a Skype translator, which in real time interprets different languages and helps to communicate.

F. Understanding Images or computer Vision Computer Vision user deep learning and pattern identification to understand contents of pictures. The pictures could range anything between graphs, table's pictures in PDF as well as video and text. Patients can also be diagnosed using computer vision

ADDITIONAL TECHNOLOGIES USED BY AI

A. GPU/ Graphical processing Units
Helps in processing huge data and performing calculations quickly.

B. Internet of Things
It is the network of devices that are connected to the internet. It would be possible to give instruction to devices using an Android phone. Intelligent data processing is done using advanced algorithms.

AREAS IN WHICH AI IS MAJORLY USED:

Artificial Intelligence is a disruptive technology, has a very wide scope of application. The following could be a couple of examples of Artificial Intelligence that can be encountered in daily slice of life situations. The user of an android phone might not even be aware that the phone that they are carrying has features which involve the use of artificial Intelligence in it. Examples include Face detection, Text recognition, Language translators.

New series of android phones are having a feature of face recognition to unlock the phone. Though
there are already a lot of other unlocking methods like the good old Pin or a pattern, biometric ideas become more convenient and have a novelty to it. This face recognition technology is also used in several apps and can present the face in a different frame. Facial recognition is the ability to recognize a face taking the help of technology. The biometrics of the face from a photograph are taken and matched with the data base of existing faces to find a face. Face recognition technology can be used to improve in store

personalization and help in online retail shopping. For example Lenskart uses the technology to scan the users face and a virtual trial of the frames is done. One could also decide whether to purchase a certain dress / outfit by uploading one's picture and using the virtual frame to try the outfit.

One well known application of AI is OCR. An OCR (Optical Character recognition) is a software that can interpret images of hand written characters or printed document convert it into readable text .It aims at reducing the work of manual data entry.One of the practical use of OCR is to convert Hard copy invoices generated into editable soft data, through character recognition. It can also be used to create a soft copy of the doctor prescriptions.

A combination of a smart phone and artificial intelligence has made travel easy even to places where one does not know the native language. Google has upgraded its translation service by providing a neural system that translates the entire sentence as compared to the earlier word by word translation. Weather the user is on Face book or amazon or google or Microsoft there is definitely a language translator to your rescue. Yet another perfect example of the artificial Intelligence application of to the real world is computer vision. Computer vision helps the computer to understand and interpret the visual data better.

In the medical field there is a lot of research happening around Laser – Guided Microbots tracking down and killing tumors located in areas of human body where it is a challenge to get medicine to the site of the disease. Driver less cars that seemed to be a part of horror or Science fiction movies are getting closer to reality, by the day. Though it is AI that drives an autonomous car, the concept of a driverless car itself is as disruptive as AI. Autonomous cars can be the safest option to people who cannot drive a car, otherwise or due to any form of physical disability and will definitely not subject to human limitations and so many collisions can be eliminated.

FUTURE OF ARTIFICIAL INTELLIGENCE - THE ROAD AHEAD

The big question is, are we prepared for this explosion called artificial intelligence? Artificial Intelligence in the coming years will push boundaries and charge ahead creating economic & social value, business employment opportunities. In the world of automation, unmanned drones and autonomous cars would become a norm and create business opportunities. AI is surely going to change the way we interact with our environment.

In the field of Finance, Banking, Insurance, legal advisory services- where machines can scan documents share overview of court ruling, stock maintenance and other fields where a lot of consultation is needed, virtual assistants or chat bots could help and take lead.AI could also help with medical diagnosis and healthcare assistance. Other benefits could include help in research and development and supply chain network.

THE SIDE EFFECTS OF DATA OVERLOAD

The smart phones and human race has almost become in separable. The end user is not aware of the privacy breach that is happening so smoothly in the day to day life. The user does not think twice about giving permission to google maps to access location information. Every day travel movements are recorded making life itself very transparent, so much so that they is very little that is private and not shared.

The digital footprint is the data trails left by the user of internet. There are two types of footprints. Passive digital foot print where the server of the site, the user visits captures the IP address of the visitor and the data that the user intentionally leaves data online. Every social media activity like blog post, twitter tweets, Face book posts and photos shared on Facebook and Instagram. Even the smallest act of 'liking' something on Facebook get saved in the servers of Facebook. The digital foot print also comes from facial recognition devices

The online shopping done by the user is saved on the server of the site like face book and the sites use the data to pursue the customer to purchase the product. The day is not far when AI and Machine learning combination would tell you that the groceries are almost over and need to be repurchased. They could also give updates on the sale happening on an online site. Using artificial Intelligence and observing the purchase patterns of customers the retailers should be able to give customized offers and offer complementary products based on previous purchase. Predictive retailing would keep a track of the customer before during and after the purchase.

Not only the end user but AI can also help the manufacturer to manager work well. AI systems could also keep track of the inventory in large super markets, where it is important to monitor perishable goods. There could be innumerable number of examples which one can come up with, where AI has the capacity to make life easy.

It is high time the user gets aware of the data recording that is happening without his or her knowledge and get educated

about how and where personal data is used and take charge. With so much of change in such small time it is indeed exciting to think of the times that are coming up. It is going to be interesting to see the magic of connected devices and the human race interacting with machines.

LITERATURE REVIEW

NehaSoni, Narotam Singh, Enakshi Khular Sharma, Amita Kapoor (2020), 'Artificial Intelligence in Business: From Research and Innovation to Market Deployment', Procedia Computer Science, Volume 167, 2020, Pages 2200-2210
The paper has explored the investment trends in AI. A comparison on the percentage startups in different industrial sectors between the year 2017 and2018 has been done. Geographical analysis of the percentage of startups in AI has been done for the years 2017and 2018.

Vineeth Ravi (J.P. Morgan); Prashant Reddy (J.P. Morgan); Sélim Amrouni (J.P. Morgan); Andrea Stefanucci (J.P. Morgan); Manuela Veloso (J.P. Morgan) (2019), 'AI pptX: Workshop on Robust AI in Financial Services , NeurIPS'19, Canada.
The paper has worked on a novel Artificial Intelligence framework for modifying and creating documents and insight extraction in natural language from data. The framework could prove highly beneficial in for eg financial industry, which generates huge amounts of data.

Thomas Davenport, Dhruv Grewal, Timna Bressgott Abhijit Guha (2019), 'How artificial intelligence will change the future of marketing', Journal of the Academy of Marketing Science, Volume 48, pages24–42
The paper works around the impact of AI on transportation industry. How driverless would be the game changer. Driverless cars would lead to a whole range of new AI product, the security systems of the cars being one among them. The paper also lists out the eventuality of AI being embedded in Robots

Thomas H. Davenport and Rajeev Ronanki (2018), 'Artificial Intelligence for the Real World', Harvard Business Review, January– February 2018 Issue
The research article focusses on the various fields in which AI is engaged in and the paper attempts at a framework on how cognitive abilities can be built by work places to achieve their goals. It lists business automation process, data analysis and employee and customer engagement as the key areas of business needs, where there is AI potential employability.

Ann Geisel (2018), The Current and Future Impact of Artificial Intelligence on Business, International journal of scientific & technology research volume 7, Issue 5, May 2018.
The paper studies the different levels of AI. The paper also studies the potential costs to the usage of AI. It tries to explore the other aspects of AI technology that were not explored earlier. The usage of AI in Marketing, Sales, Accounting and Finance has been discussed.

Neha Soni, Enakshi Sharma, Narotam Singh, Amita Kapoor (2018), 'Impact of Artificial Intelligence on Businesses: from Research, Innovation, Market Deployment to Future Shifts in Business Models', Conference: Digits 2018, Indian Habitat Center (IHC), New Delhi, India, Volume: 1
The paper focused on studying the effect of the increasing intelligence of machines and its impact on the change in behavior of business all over the world. The authors have studied the total investment made by 100 AI start up in the years between 2011 and 2016. The breakup of the 100 AI startups in different sectors were also studied. Top 5 sectors being Core AI, Healthcare, Business Intelligence, Advertising and sales, Conversational AI

M Pradhan, RK Sahu (2011), 'Predict the onset of diabetes disease using Artificial Neural Network (ANN)', International Journal of Computer Science & Emerging Technologies (E- ISSN: 2044-6004) 303 Volume 2, Issue 2, April 2011
The survey has suggested that for diagnosis of diabetes, the ANN technique give better results than other diabetes detecting technology. The proposed systems aims to save the patients from giving a blood sample for test . The diagnosis is based on the early stage symptoms.

Jiaxin Luo, Qingjun Meng, Yan Cai (2018), 'Analysis of the Impact of Artificial Intelligence Application on the Development of Accounting Industry', Open Journal of Business and Management, 2018, 6, 850-856, ISSN Online: 2329-3292
The paper concludes that AI is being used more and more in industrial application. Application of AI to industrial will be the key to problem solving. It is necessary for the universities, enterprises, individuals and the country to work together to bring about an application of the key.

Robert Kowalski (2013), Twenty-Second International Joint Conference on Artificial Intelligence.
In the ALP (Abductive logic programming) the author has considered only the normative properties and how it could

improve human thinking. The author concludes by saying that it helps in expressing one's thoughts clearly.

Shukla Shubhendu S., Jaiswal Vijay (2013),' Applicability of Artificial Intelligence in Different Fields of Life', International Journal of Scientific Engineering a nd Research (IJSER) , ISSN (Online): 2347-3878
Various fields of artificial intelligence have been listed and expectations from artificial intelligence in each field is listed. Social challenges have been discussed.

Conclusion:

The focus of the current paper is on making the reader aware of the basic terminology involved in the huge basket of artificial Intelligence. The current research is an attempt to simplify the technology that makes AI work. It also discusses the potential future use of the technology. All the research papers review by the author also focus on the same lines. There needs to be more research on understanding the consumer's perspective in different business sectors, like the transportation sector, FMCG sector, Personal Finance and Banking. The awareness level and the consumer readiness for the changing technology can be the road ahead.

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