

ARTIFICIAL INTELLIGENCE: SOME ISSUES

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ABSTRACT

Artificial Intelligence (AI) is one of the fast growing fields which are getting more attention in business world. Artificial Intelligence has already found application over many fields such as commercial and daily life. In current technological era innovations and advancements are happening at the blink of an eye. The utilization of AI in business can make the industry to rely on faster, inexpensive and more precise modes of marketing. Making use of this AI in marketing practices, an entrepreneur can benefit higher response from the audience and can achieve a strong competitive advantage. Apart from marketing, it also has the ability to renovate business with innovative ideas. It also delivers solution to complex tasks and thus helps in massive growth of business. It is to be noted and presented in this paper.

Keywords: Artificial Intelligence (AI); Entrepreneur; Industry; Marketing.

I. INTRODUCTION

Artificial intelligence (AI) refers to the “ability of a computer or a computer-enabled robotic system to process data and produce results in a manner similar to the thought process of humans in learning, decision making and solving problems”. The father of Artificial Intelligence, **John McCarthy** expresses a definition for AI which says that "Artificial Intelligence is the science and engineering of making smart machines, particularly intelligent computer programs". Artificial Intelligence (AI) is intelligence shown by machines. In software engineering, the field of AI characterizes itself as the investigation of "intelligent agents". For the most part, the expression "artificial intelligence" is utilized when a machine recreate capacities that human's associate with other human personalities, for example, learning and critical thinking. “Machine Learning is actively being used in Google’s predictive search bar, in the Gmail spam filter, in Netflix’s show suggestions. Natural Language Processing exists in Apple’s Siri and Google voice. Image Processing is necessary for facebook’s facial recognition tagging software and in Google’s self-driving cars”.

The utilization of these applications started form the initiation of using rule based mechanisms. In rule based mechanisms, the data with which we had decided to work with the machine will be given in the format of rules. The machine will work on the basis of these rules and will take the decisions appropriately. At first, the data that was available for the currently considered problem will be collected from various sources. All this data will be converted in to the form of rules with various answers for the same rules. All these rules will be stored in the database of the intelligent machine or the artificial intelligent machine where the data will be used by the machine for taking the decisions on the currently raised problems. The place where these setoff rules will be stored can be taken as the knowledge base.

The feature of AI is batter understood with the help of following figure

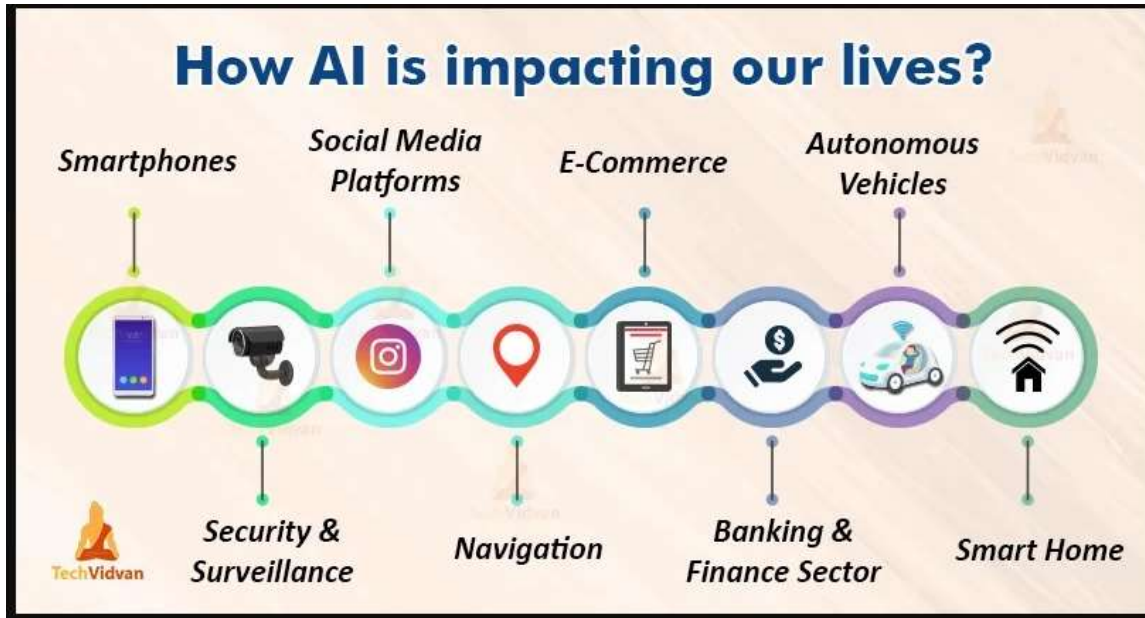


Source: www.Techvidvan.com

This database can be treated as the knowledge base due to the reason that these machines will use this database such that to take decisions based on the rules available in the database or the knowledge base. Now,

the task is to identify the appropriate rule that was similar to that of the currently considered problem was the big task or the big challenge. Several algorithms and techniques are being using today such that to increase the accuracy of finding the similar set of rules in the database and try to identify the appropriate solution for the current problem that was raised in the current scenario.

How the AI occupied our daily life is seen in below figure



Source: www.Techvidvan.com

II. REVIEW OF LITERATURE

As per Nilson, the rise of AI as an autonomous field of research reinforced and was additionally fortified by three significant meetings – “A 1955 session on Learning Machines held in conjunction with the 1955 Western Joint Computer Conference in Los Angeles, a 1956 summer research project on Artificial Intelligence convened at Dartmouth College and a 1958 symposium on the Mechanization of Thought Processes sponsored by the National Physical Laboratory”.

Artificial intelligence is right now somewhat created without cutting edge capacities to learn alone however rather offered directions to follow up on. This will be a definitive eventual fate of artificial intelligence, where the AI machines will be perceived the human conduct and feelings and will prepare their part according to it [Martinez and Fernandez-Rodriguez, 2015].

As stated by Demis Hassabis, who is the founder of Deep mind – the AI Company of Google, “Artificial intelligence is the art to make machines intelligent (Ahmed, 2015).” It is the most widely accepted definition and also a well-fitting since AI is abroad term used for a number of a variety of indicators.

Artificial Intelligence (mechanical technology) in the present scenario has the capacities to copy human intelligence, performing different errands that require thinking and learning, take care of issues and settle on different choices. Artificial Intelligence programming or projects that are embedded into robots, PCs, or other related frameworks provide them fundamental reasoning capacity (Zhang et.al 2016).

Under the AI, there are some sub categories including machine learning and deep learning which manufacture real-world apps of AI, including search suggestions, voice recognition, virtual assistants and image recognition. The term, AI, refers to the computer-assisted analytical course that attempts to form automated systems which can be labeled as intelligent. It is the automated system that inputs data to conduct tasks of intelligent beings in a manner that increases the success rate. According to Guruduth Banavar, supervisor of AI research by IBM, there are a broader variety of various types of Artificial intelligence, therefore, it can be considered as a collection of technologies(Kaput, 2016).

If we check around us, from one viewpoint, we appear to grasp the change being brought by technology, be it “smart home, smart healthcare, Industry 4.0 or autonomous cars.” Then again, we frequently ended up

challenging the administration with regards to joblessness, charges, security and so forth. As AI advancement is accelerating, more robots or self-ruling frameworks are being conceived and supplanting human work. This is the present circumstance; in any case, in long haul, results appear to get all the more fascinating (Tyagi, 2016). A majority of software houses and providers has given a lot in AI and technology organization such as IBM is giving their own marketing computerized solution with IBM Watson Campaign Automation. IBM Watson Campaign Automation has AI by default which is built in the solution. Salesforce, which is considered as the leading provider of Customer Relationship Management (CRM) software has also begun to provide AI service along with the Sales force Einstein, which is also executed in the solution (Sterne, 2017).

III. OBJECTIVES OF THE STUDY

1. To study the application of artificial intelligence in business.
2. To study the challenges of artificial intelligence in business.
3. To give suggestion to overcome above challenges.

FAST FACTS ABOUT ARTIFICIAL INTELLIGENCE

1. As one of the fastest-growing technologies in the world, AI is expected to have a market size of \$270 billion by 2027.
2. By 2030, it is expected to reach \$15.7 trillion. 77% of people utilize a machine's AI capabilities in one form or another, although only 33% are aware they are doing so.
3. AI technology in the workplace has grown from 10% in 2015 to 37% in 2021.
4. The use of AI increased drastically during the COVID-19 pandemic. AI Adoption grew 37% in the finance sector, 27% in the retail sector, and 20% in the IT sector.
5. AI is currently used the most for business analytics (33%), security (25%), and sales and marketing (16%).
6. 44% of businesses that have implemented AI technologies have also said they've seen a reduction in operating costs. AI can reduce call times by 70% in customer service industries resulting in a 40 to 60% cost saving.
7. Implementing AI in a sales department can increase leads by more than 50%.
8. 28% of companies use AI for marketing purposes. However, 84% of marketers believe that AI is more important than any other technology.
9. The agricultural robotic industry is expected to reach \$20.6 billion by 2025. \$6.2 billion of that will be used on drones or UAVs (Unmanned Aerial Vehicles).
10. AI usage in the education system is expected to be worth \$6 billion by 2024. 80% of retail businesses believe they will use AI in one form or another by 2027.
11. It is predicted that AI bots can handle most tasks and interactions with 90% accuracy in the banking industry.
12. 51% of European manufacturers, 30% of Japanese manufacturers, and 28% of American manufacturers have incorporated AI into their business.
13. Amazon saves roughly \$22 million every time they open a warehouse where they've implemented the Kiva collaborative robot.
14. Stanford University has developed a machine-learning algorithm that can predict the death of hospital patients with 90% accuracy.
15. Google and Oxford Research recently released a deep learning AI system that can read lips better than 12.4% of the human brain (and with 4.8% accuracy).
16. Facebook, Apple, Microsoft, Google, and Amazon acquired a total of 13 different AI startups in 2020 alone.
17. Over 100 different AI development devices were approved in 2020 for medical usage. The most common fields are radiology, cardiology, and hematology

Source: www.thrivemyway.com/artificial-intelligence-stats

Andrew Ng, Computer Scientist and Global Leader in AI say that “It is difficult to think of a major industry that AI will not transform. This includes healthcare, education, transportation, retail, communications, and agriculture. There are surprisingly clear paths for AI to make a big difference in all of these industries.”

The term can also be applied to any machine that exhibits traits related to a person’s mind like learning and problem-solving. AI stays a long ways behind when all is said in done knowledge assignments that would bring about, state, absolute computerization of in excess of a restricted assortment of occupations.

WHY ARTIFICIAL INTELLIGENCE IMPORTANT

1. **Competitive Edge:** The companies which aim to have a competitive edge over their rivals are banking upon AI technologies to obtain this. Moving outside of the corporate infrastructure, AI has the power to offer companies a competitive edge up marketing because of its ability to find out and train supported data. AI offers numerous insights into the way to market, who to plug to, when and where to plug, and even why to plug. Example, the **Autopilot** feature offered by **Tesla** in its cars. Tesla is using Deep Learning Algorithms to achieve Autonomous driving. This was earlier just one feature out of many, but now is defining the brand.

2. **Accessibility:** The cloud administrations. What used to be run in specific labs with access to super PCs would now be able to be conveyed to the cloud at a small amount of the expense and considerably more without any problem. This has democratized access to the important equipment stages to run AI, empowering a multiplication of new companies.

3. **Fear of Missing out:** Yeah, you read that right. Not just us, companies also feel the fear of missing out. If they do not want to get thrown out of the market in the future, they have to adapt accordingly. They need to invest in technologies that would disrupt their industries. Several companies and startups within the housing industry have started leveraging AI and Machine Learning technology to form better decisions and improve productivity. Take the example of the banking sector, where almost all the banks have invested heavily in chatbots so that they won’t miss out on the next wave of disruption.

4. **Cost-Effectiveness:** With every passing day, the technologies behind AI are getting less and less expensive to utilize and though still higher than the manual propositions, they are considerably cheaper than earlier. AI will make it possible to avoid design errors of the past and make entirely new trials of the longer term. The result’s a more precise and better–designed protocol which will likely require minimal changes, potentially saving many dollars in costs previously spent on change requests.

IV. APPLICATION OF ARTIFICIAL INTELLIGENCE IN BUSINESS

With the help of below diagram we can understand its application



1. **Healthcare:** A device, as common as a Fitbit or an SmartWatch, collects a lot of data like the sleep patterns of the individual, the calories burnt by him, heart rate and a lot more which can help with early detection, personalization, even disease diagnosis. This device, when powered with AI can easily monitor and notify abnormal trends. This can even schedule a visit to the closest Doctor by itself and therefore, it’s also of great help to the doctors who can get help in making decisions and research with AI.

2. **Automobile:** automobiles changing from an engine with a chassis around it to a software-controlled intelligent machine, the role of AI cannot be underestimated. The goal of self-driving cars, during which Autopilot by Tesla has been the frontrunner, takes up data from all the Tesla’s running on the road and uses it in machine learning algorithms. The assessment of both chips is later matched by the system and followed if the input from both is the same. AI are often witnesses working its magic through robots producing

the initial nuts and bolts of a vehicle or in an autonomous car using machine learning.

3. Banking and Finance: Artificial Intelligence can be seen in Banking and Finance Industry from Chatbots offered by banks, for instance, SIA by depository financial institution of India, to intelligent robo-traders by Aiyda and Nomura Securities for autonomous, high-frequency trading, the uses are innumerable. Features like AI bots, digital payment advisers and biometric fraud detection mechanisms cause higher quality of services to a wider customer base. The adoption of AI in banking is constant to rework companies within the industry, provide greater levels useful and more personalized experiences to their customers reduce risks.

4. Surveillance: AI has made it possible to develop face recognition Tools which may be used for surveillance and security purposes. As a result, this empowers the systems to monitor the footage in real-time and can be a path breaking development in regards to public safety. Manual monitoring of a CCTV camera requires constant human intervention so they're prone to errors and fatigue. AI-based surveillance is automated and works 24/7, providing real-time insights. According to a report by the Carnegie Endowment for International Peace, a minimum of 75 out of the 176 countries are using AI tools for surveillance purposes..

5. Social Media: Social Media is not just a platform for networking and expressing oneself. It subconsciously shapes our choices, ideologies, and temperament. All this due to the synthetic Intelligence tools which work silently within the background, showing us posts that we "might" like and advertising products that "might" be useful based on our search and browsing history. Another huge benefit of AI in social media is that it allows marketers to analyze and track every step that they take.

6. Entertainment: online streaming services like Netflix and Amazon Prime, relies heavily on the info collected by the users. This helps with recommendations based upon the previously viewed content. This is done not only to deliver accurate suggestions but also to create content that would be liked by a majority of the viewers. With new contents being created every minute , it is very difficult to classify them and making them easier to search.AI tools analyze the contents of videos frame by frame and identify objects to feature appropriate tags.

7. Education: there are a number of problems which will be solved by the implementation of AI .A few of them being automated marking software, content retention techniques and suggesting improvements that are required. This can help the teachers monitor not just the academic but also the psychological, mental and physical wellbeing of the students but also their all-round development. This would also help in extending the reach of education to areas where quality educators can't be present physically.

For Example, Case-based simulations offered by Harvard graduate school is one such use.

8. Space Exploration: NASA is also working with AI applications for space exploration to automate image analysis and to develop autonomous spacecraft that would avoid space debris without human intervention, create communication networks more efficient and distortion-free by using an AI-based device.

9. Gaming: computer game Systems powered by AI is ushering us into a replacement era of immersive experience in gaming.AI is employed to get responsive, adaptive or intelligent behaviors primarily in non-player characters (NPCs) almost like human-like intelligence in video games. It serves to enhance the game-player experience instead of machine learning or deciding .AI has also been playing a huge role in creating video games and making it more tailored to players' preferences.

10. Robotics: robots are becoming more efficient in performing tasks that earlier were too complex. The idea of complete automation are often realized only with the assistance of AI, where the system can't just perform the specified task but also monitor, inspect and improve them without any human intervention.AI in robotics helps the robots to learn the processes and perform the tasks with complete autonomy, without any human intervention. This is because robots are designed to perform repetitive tasks with utmost precision and increased speed.

11. Agriculture: The use of AI in agriculture is often attributed to agriculture robots, predictive analysis, and crop and soil monitoring. In addition, drones are also used for spraying insecticides and detecting weed formation in large farms. This is getting to help firms like Blue River Technologies, better manage the farms.AI has also enhanced crop production and improved real-time monitoring, harvesting, processing and marketing.

12. E-Commerce: Different departments of E-commerce including logistics, predicting demand, intelligent marketing, better personalization, use of chatbots, etc. are being disrupted by AI.The E-Commerce industry, a

prominent player being Amazon is one among the primary industries to embrace AI.

V. CHALLENGES OF ARTIFICIAL INTELLIGENCE

1. Cause of Unemployment: increased efficiencies but at the cost of employees who simply can't function in the league of machines. A tremendous amount of reskilling will be must in order to make these employees employable again. This increase in unemployment would lead to a lot of economic and social problems.

2. High Initial Investment: high upfront cost that one has to invest in order to achieve that higher efficiency. At this point in time, only a limited number of organizations can afford it. The technology also requires timely software updates which adds to the cost. With time though, this cost will decline as with all other technologies.

3. Increased dependency on machines: As we know, "Technology is a useful servant but a dangerous master". With declining human intervention, organizations would be much more dependent on machines. However, these machines do not have the ability to understand human emotions and feelings at all.

4. Lack of creativity: However intelligent a computer may become, it will always be that "artificially intelligent". It would always lack the creative touch that a human mind can provide. In tricky situations, an AI wouldn't be able to provide an out of the box solution.

VI. SUGGESTION TO OVERCOME ABOVE CHALLENGES

A PwC report estimates that **AI will contribute \$15.7 trillion to the global economy by 2030**. So, let us take a look at how this could be possible with Artificial Intelligence.

1. Healthcare: Artificially Intelligent robots would be employed for performing **complex surgeries** with a high degree of accuracy. It puts consumers on top of things like health and well-being. AI would also be developed in wearable devices like watches and wrist bands to monitor the human body and predict any diseases if any.

2. Autonomous Vehicles: "Autonomous Vehicles". Level 2.0 Autonomy has already been achieved by **Tesla**. Autonomous driving is one among the key application areas of AI. Autonomous vehicles (AV) are equipped with multiple sensors, like cameras, radars and lidar, which help them better understand the environment and in path planning. These sensors generate a huge amount of knowledge once autonomous vehicles would be on road, cab services like Uber and Ola would be driverless. This would change the way transport industry functions.

3. Security and Defense: The utilization cases for AI in defense and security are virtually unlimited. It is often to improve target recognition, combat simulation and training, and threat monitoring. Most importantly, the critical and risky jobs of securing the borders of the country can be delegated to artificially intelligent robots, unmanned aircraft, and drones. This would reduce the risk of life for the soldiers on the borders and provide better surveillance measures using evolved Facial Recognition Technologies.

4. Manufacturing: Manufacturing in the near future would be fully automated. AI also optimizes manufacturing supply chains, helping companies anticipate market changes. This information is invaluable to manufacturers because it allows them to optimize staffing, internal control, energy consumption and therefore the supply of raw materials. The manufacturing processes enabled by Artificially Intelligent Systems would be able to not just perform the required processes but also be able to inspect, improve, and quality checks the products without any human intervention.

5. Education: The future of classrooms is digital. Already, there are a lot of courses on platforms which are highly informative and can be accessed from anywhere, anytime. AI can automate the expedition of administrative duties for teachers and academic institutions. Educators spend tons of their time on grading exams, assessing homework, and providing valuable responses to their students. AI is allowing automation of classification and processing of paperwork. The concept of education will be **redefined** from the comfort of the homes, personalized according to every students' needs with the help of Artificially Intelligent systems. According to a report by Market

6. Entertainment: Already, the OTT's like Netflix and Amazon Prime are rapidly increasing their user base. Smart algorithms are going to be ready to come up with the simplest marketing and advertising solutions. With AI, it's possible to form all marketing processes a couple of times faster by utilizing predictive analytics. In the future, the AI will be able to predict not just our preference, but also our mood and would display content

according to it. **Virtual Reality** enabled sci-fi content and games can be a part of sources of entertainment in the future.

7. Workplace: Businesses are using AI to enhance the productivity of their employees. The advantage of AI for business is that it handles repetitive tasks across a corporation in order that employees can specialize in creative solutions, complex problem solving, and impactful work. One example of that is chatbot. The concept of the workplace will also be redefined by the advent of technologies. The concept of **work from Home** will be the new norm and digital conferences and meetings would be the accepted practice. This would cause the commercial real estate spaces to witness a drop in their demands.

8. Banking and Finance: Artificial Intelligence is the best way forward for banking because it brings the facility of advanced data analytics to combat fraudulent transactions and improve compliance. AI assistants, like chatbots, use AI to get personalized financial advice and work on processing to supply instant, self-help customer service. With increasingly efficient and intelligent systems, it becomes easier to detect and stop fraud in the banking sector.

VII. CONCLUSION

We all know “Change is the only constant. AI has insightful impacts on governments, society, business, and people. AI has been proved to be beneficial for business as it increases productivity, reduces time and cost, human error reduction, rapid decision making, customer choice forecast, and sales expansion through automation and data analysis. Given the fact that AI is widely accepted and there is lack of skilled talent, there are opportunities where AI-based solutions can fill this gap and transform the workplace. Overall, people believe that humans are more prone to errors than AI systems and that the designers and managers of these systems are at fault when they malfunction or fail. Therefore, both people and business are required to be prepared for the upcoming demands of technology by accepting the innovation to be successful in the future.

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