

# ARTIFICIAL INTELLIGENCE AND THE HUMAN BRAIN

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## **What is Artificial Intelligence**

[1] Artificial intelligence is the making of intelligent machines , especially intelligent computer programs through science and engineering .It is related to making computers to know human intelligence but it is not confined to the biologically observable methods. [2] The activity devoted for making intelligent machines is Artificial intelligence , as intelligence is the quality required for working properly and with environmental foresight .

## **History of AI**

[3] The beginnings of artificial intelligence can be traced back to philosophy ,fiction and imagination. AI has been influenced by earlier electrical inventions and inventions done by engineers. Problem solving which included basic work in learning, representation of knowledge, inference and also demonstration programs in language understanding, translation, proving of theorems , memory association and knowledge-based systems. [4] 1950 was the year when artificial intelligence was first described, but its widespread and medical application was prevented by several limitations in its early models. Advent of deep learning helped in overcoming many of these limitations during the early 2000s. AI systems are now capable of analyzing complex algorithms and self-learning.

## **Growth of AI**

[5] Deep learning algorithms and neural networks are the forms of artificial intelligence being intensely explored for novel healthcare applications in areas such as imaging and diagnoses, risk analysis, lifestyle management and monitoring, health information management, and virtual health assistance. Benefits expected in these areas are ranging wide and also include increased speed in imaging, greater insight into predictive screening, and decreased healthcare costs and inefficiency. [6] The future of health care may change dramatically due to the solutions offered by entrepreneurs that change how we prevent, diagnose, and cure health conditions, by the use of artificial intelligence (AI). This article provides a timely and critical analysis of AI-driven health care startups and also identifies business model archetypes which are emerging that entrepreneurs from around the world are using to bring AI solutions to the marketplace

## **AI in Healthcare Appliances**

[7] Flexible pressure sensors that are based on the concept of organic materials, which combine the unique advantages of flexibility and low-cost, have emerged as a highly active field due to their promising applications in artificial intelligence systems and wearable health care devices. [8] Our everyday life has been invaded by artificial intelligence and in the last 10 years everyone has seen the emergence of artificial intelligence as a very promising application in the field of medication . In a near future the chance that AI will find tremendous applications in dento-facial deformities recognition is very high due to its amazing power in image recognition. [9] An increased life span

has resulted due to Advancements in medical science and technology. The elderly often gets cognitively impaired and require urgent medical services which when left unnoticed may lead to fatal consequences. Due to lack of social care support for these adults, there arises the need to develop cost-effective assistive healthcare technological solutions for taking care of the elders and giving them the best tech-friendly experience. Intelligent homes, an environment of sensors with artificial intelligence integrated with home appliances, can provide the best solution for continuous and remote monitoring of the health of the persons.

### **AI in Manufacturing and Production**

[10] Intelligentization, supported by artificial intelligence (AI) technologies, has become an important trend for industrial manufacturing over the past few decades which is accelerating the development of smart manufacturing. Standard AI has been endowed with additional attributes in the modern industries, yielding industrial artificial intelligence (IAI) which has become the technical core of smart manufacturing. [11] Research based on applications of artificial intelligence (AI) technology in the manufacturing industry in recent years, we can analyze the development of core technologies in the new era of 'Internet plus AI', that has triggered a great change in the models, means, and ecosystems of the manufacturing industry, as well as in the development of AI. [12] Modern manufacturing and logistics systems are supported by ubiquitous and computing networks which are very powerful. Within these networks, oceans of data are continuously being generated by sensors, machines, systems, smart devices, and people.

### **AI in Security and Surveillance**

[13]Information technology valuable part of making our nation safer. Critical national security missions in the context of various data and technical domain challenges could benefit from establishing an intelligence and security informatics research discipline. Just as biomedical informatics addresses information management issues in biological and medical applications, ISI would address such issues for intelligence and security applications. [14]Surveillance cameras have a plethora of usages in newly born cities including smart traffic, healthcare, monitoring, and meeting security needs. One of the most famous new cities is the Egypt's new administration capital "New Cairo". The new administration capital of Egypt mainly characterizes with the green life style via the "Green River ". [15] Human eyes are highly efficient devices for scanning through a large quantity of low-level visual sensory data and delivering selective information to one's brain for high-level semantic interpretation and gaining situational awareness. Over the last few decades, the computer vision community has endeavoured to bring about similar perceptual capabilities to artificial visual sensors. Substantial efforts have been made towards understanding static images of individual objects and the corresponding processes in the human visual system.

### **AI in Education**

[16] AI in education is a field concerned with the development of Artificial Intelligence for the study in the department of human teaching and to engineer a system facilitating human learning. The questions of long-term nature are addressed by this field. 'Intelligent Tutoring System'(ITS) is a term frequently used regarding the engineering side of discipline. In support of AI activities such as planning, control, knowledge representation and acquisition, explanation, cognitive modelling and dialog management computational methods are used. Alternative theories about learning are

evaluated and explored using computational methods. [17] For over 20 years computers have been used in education. Systems that were first deployed as an attempt to teach using computers were computer-based training (CBT) and computer aided instruction (CAI). Instructions in these kind of systems were not individualized to the learner's need. Instead there were script like decisions for the students to move through the material such as 'if question 20 is answered correctly move to question 40 otherwise move to question 10' and thus the learner's abilities were not taken into account. Intelligent tutoring systems are highly effective in motivating students and increase their performance. [18] For more than 30 years the application of artificial intelligence to education (AIED) has been the subject of academic research. Learning wherever it may occur, classrooms or in workplaces, is investigated by this field in order to support formal education as well as lifelong learning. In order to promote the development of adaptive learning environments and other AIED tools that are flexible, inclusive, personalised, engaging, and effective it brings together AI, which is itself interdisciplinary, and the learning sciences (education, psychology, neuroscience, linguistics, sociology, and anthropology). The scientific goal at the heart of AIED is to "make computationally precise and explicit forms of educational, psychological and social knowledge which are often left implicit." In addition to being the engine behind much 'smart' ed tech, AIED is also a powerful tool to open up the 'black box of learning,' giving us deeper, and more fine-grained understandings of how learning actually happens.

### **Advantages of AI**

[19] The advantages provided by AI is that it is durable, reliable, and cost-effective while also addressing uncertainty and speed in either solving a problem or reaching a decision. AI has been applied in many diverse realms such as engineering, economics, linguistics, law, manufacturing and medicine, and also for a variety of modeling, prediction, and decision support and control applications. AI has been rigorously used in internet such as in search engines which is one of its most promising applications. with their increased use in applications. AI has already proven to be quite reliable in many different applications and broad application of any tool only occurs when its reliability has been established, and it has the ability to simulate human intelligence in a reasoning process. AI supports cost minimization as it enables reduction on the need of personnel time like many automations. By adopting appropriate AI applications in the decision-making process, thus reducing operational costs an agency can reduce significant staff time. [20] In a literature review about using AI in trading and investing and theories of chaos and automata, an online AI-based trading platform, a TEDx presentation, and also an interview with a software engineer was presented and analysis of all these materials demonstrated that it take much time to collect data and make strategies by analysing it using traditional training method, which is also time-consuming. An AI trading system although expensive to develop, can explore vast data and make more and better results once built, for example, picking stocks quickly. Artificial intelligence have a huge impact on trading and investing in financial markets as indicated by the results. Although it is expensive to invest in it as an individual or small company, it is proven to be more profitable for big finance companies at the same time. [21] Artificial intelligence has incredible benefits, It can offer us, is to evolve definitively and move on to the history of artificial robots. The main advantages of Artificial Intelligence (AI) are it can finish task faster than humans, it can easily complete stressful and complex works, It can do a difficult work in short period of time, It can do various tasks at the same time, the success ratio is high, it shows less error in tasks, it takes up less space, it is compact in size,

it can do calculation of long term and complex situations, and also discover unexplored things. i.e. outer space. [22] Human works can be reduced by using artificial intelligence, by replacing peoples by machines and people can do others works like programming , self-writing , self modifying etc by these works man feels burden on him, artificial intelligence is like a cheap labour and by using this labour we can make our work fast and also increase the profit, it can be deployed easily, machines do not require refreshments and breaks like humans, the machines can be re programmed for work for long time without getting bored or tired, the science of robotics and artificial intelligence can be deployed into mining and other fuel exploration process by this way we can save human life because human can make new robots but we cannot make that human, it can be deployed at industries and companies. [23] The basic intelligence of teachers has been changed by the emergence of artificial intelligence. Teachers usually teach students by communicating with them in traditional business English teaching. In the application of artificial intelligence products, students can assess their learning situation thus reducing the time burden of teachers to correct their homework, and giving teachers more time to understand the students' learning situation and adjust their teaching methods in time, and teach according to their own abilities. Adopt one-to-one teaching method to improve teaching quality. Artificial intelligence has effectively solved the problems faced by teachers in college reforms and improved the teaching of student resources and also made up for the defects in college business English teaching thus most English teachers accept and recognize big data and artificial intelligence.

### **Challenges or Dis-advantages of AI**

[24] The problem of unemployment is one of the ethical dilemmas that can be identified. More and more work places are being suppressed due to the development of machines, increasingly specialized, has generated that from the industrial revolution to the present. Machines that are "more efficient" in economic terms have replaced jobs starting with the less qualified, repetitive jobs and in which little reasoning is needed for its execution, even more complex jobs that need surgical precision for its performance, and it has made man reinvent himself and learn other more specific trades so that they can sell his workforce and thus be able to survive in a world that demands money to preserve a comfortable lifestyle. That raises the dilemma of what will happen when the machines come to replace all the human labour that the industry needs to function? Another ethical dilemma faced by today's society is the "humanism" of the human being. Society is currently dependent on advance technologies in all aspects, from a mobile phone to machines to maintain an acceptable quality of life. This has posed that humanity wonders if freedom has been lost to technology or if it is really technology that serves the human being only when he demands it. [25] Some of the main disadvantages of Artificial Intelligence (AI) in our daily lives are it can some time misused leading to mass scale destruction, programme mismatch sometime done opposite to the command, it effects human jobs, it caused an increase in unemployment, the creativity is dependent upon the programmer, it lacks the human touch, it is helping in making the younger generation become lazy, it require a lot of time and money and it has caused the increase of technological dependency. [26] It is not easy to develop the machines because the equipment required are expensive, it can cost lots of cash and tons of time to create, rebuild, and repair, Robots are replacing jobs of humans, it is a major cause for severe unemployment, unless if humans can fix the unemployment with jobs AI can't do or severely change the govt to communism, destruction can be easily caused by machines if put within the incorrect hands, that is, a minimum of a fear of the various humans, AI is making

humans lazy with its applications automating the bulk of the work, humans tend to urge hooked in to these inventions which may cause a drag to future generations, AI is replacing the majority of the repetitive tasks and other works with robots, A bond with humans which is an important attribute when involves Team Management cannot be developed by machines, Only those tasks which they're designed or programmed to try to can be performed by machines and anything out of that give irrelevant outputs which might be a serious backdrop or crash. [27] The government and schools attach great importance to integrating artificial intelligence into business English education but most ideas are implemented at the professional level the main reason is that when universities formulate talent training programs, the training of artificial intelligence awareness and ability has not been really incorporated into vocational education, which has affected the development of professional talent training objects. Innovation and Entrepreneurship education will be difficult to proceed smoothly if the training goal of artificial intelligence is not included in the professional education plan. The importance of students' innovation and entrepreneurship education has not been fully realized by some colleges and universities at present, and usually just hold some lectures to cultivate students' artificial intelligence capabilities and awareness, and artificial intelligence education into the professional curriculum system is also rarely incorporated. In most business English professional colleges, artificial intelligence education is to create some courses related to artificial intelligence on the basis of the original business English courses however, in general, these courses have little to do with professional courses, they are two independent courses, there is no penetration and good integration. Artificial intelligence education is only a superficial form, which is not conducive to the development of artificial intelligence training thinking. [28] One of the main disadvantages of artificial intelligence is the amount of money it cost for the maintenance and repair. To meet changing requirements the software must be constantly updated. Any machine can fail if we set a lot of complex tasks to artificial intelligence. Huge number of consecutive problems can be caused by a small error in the calculations this can also lead to loss of important data, which is processed by machine. It can lead to unemployment if robots begin to replace a person in each field of activity. In addition, a person's mental abilities can be reduced, as the need to use their intellect and not solely depend on machines. It will cause destruction if military robots fall into the wrong hand as the machine does not think before acting.

## **Conclusion**

I believe that Artificial Intelligence is at the centre of a new enterprise to build computational models of intelligence. The main assumption is that intelligence (human or otherwise) can be represented in terms of symbol structures and symbolic operations which can be programmed in a digital computer. Artificial intelligence has many disadvantages along with its advantages and the biggest one of the disadvantage is the problem of unemployment so I think we should not solely rely on artificial intelligence and also rely on our own intelligence.

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