

INTEGRATING TECHNOLOGY IN AGRICULTURE

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Abstract

RFID or Radio frequency identification is a very secure method of identifying and channelising information related to agricultural products and devices through a small tag attached to them. It can develop agriculture tremendously by sharing real time data about agricultural devices like temperature or soil nutrient level sensor, status of all automatic agricultural devices. Study and research in biotechnology can lead to further increase in gross agricultural yield, quality of yield. It can help manipulate the biological systems for better results. The use of IOT to integrate all devices to essentially improve certain aspects like perceiving information about plant and its environment, transportation of goods and application of machines by use of technology like Wifi, gprs, Zigbee, Bluetooth etc.. to convert smooth efficient and hassle free production of crops has been discussed in this paper. Wireless Sensor Networks (WSN) are basically use of sensors to precisely monitor conditions of the field and to predict weather conditions and to suitably adopt its operations. All of these together constitute a field wherein great innovation can be brought about. Farmer fields schools (FFS) are another thought discussed in this paper which can be used to further extend the knowledge of scientific agriculture amongst farmers. Another aspect of the digital world that is Information technology can be further used to Improve logistics of farm produce, competitive pricing, product user base and marketplace. Beyond all a fairer margin of profit for the farmers can be ensured through the direct contact of farmers to the users through IT. Concept of Precision Agriculture is one which requires further perfection but promises ample of quality produce enough to satisfy the growing population. It utilises the idea of WSN by using web of underground nodal sensors. Lastly the technology of Nano particles is the other non-conventional method which can bring about huge changes in the agricultural economy if properly researched upon. The use of small particles to only affect the required regions with low levels of dosing of fertilizers or nutrients is one of the main objectives of nano particle technology. It is highly likely that one of the above methods can change the course of current agriculture to greater heights hence it is highly advised to encourage research in the above fields.

Keywords: *RFID, WSN (Wireless Sensor Networks), IOT, Biotechnology, Nano technology, PA (Precision Agriculture).*

Introduction

Leveraging technology is the application of relevant scientific knowledge for practical purposes in specific industries. Use of modern age technologies in fields of IT and Biotech, as well as practices, tools and machines to enhance and improve the yield produced and to further reduce labour and time invested can be called agriculture technology. This also includes leveraging information technology, sensors, big data, cloud services, drones, hardware and software for innovative farming practices.

It is important to look into this matter because of humongous challenges as well as opportunities in an increasingly interconnected global economy. The relevance of talking and studying about technology and agriculture in our society is in order to motivate young minds who find interest in developing technology for the agriculture sector, but who may be potentially discouraged by a

society which sees very little or no worth in agriculture as a whole; for making money or earning a living. Being a citizen of the world, it's our responsibility to spread the awareness of the hardships faced by our farmers and to help them get acquainted with the knowledge and technology to bring about a change in the situation. It is a collective responsibility of mankind to keep up the production of the necessary daily food for their nourishment. Therefore, thinking about innovation in agriculture is a big deal, being a win-win situation for both the farmers and consumers.

Literary Survey

[1] RFID means Radio frequency Identification. It is used in improving many agricultural processes. It uses radio waves to interpret information stored on a tag attached to an object. RFID makes use of sensors for wide range of applications. RFID provides a plethora of applications for productive output in agriculture. RFID is used for trace ability and monitoring live stock. By using RFID, we can find weather conditions and we can produce better yield. It is new technology which was brought to produce better production and yields without any loss. RFID has most of use with sensors and some new tools which are outfitted with sensors. RFID has good market and it's use is very commercial. Using RFID in agriculture has brought a new revolution in agricultural industry which was never expected. [2] Biotechnology is coming very handy in agriculture. The knowledge of biotechnology can lead to better yield, productivity, product quality and export diversification. Biotechnology driven improvements are enhancing the quality of input and output in agriculture related activities. It is the manipulation of various biological processes for industrial purposes and other things but now it is also being used in the field of agriculture. It is commonly termed as Agritech. The new technology offers greater chances for increased growth in areas of income, nutrition, etc. The new tools of genomic study are increasing the insight of biological system and also how to manipulate them for better results. The research in molecular breeding, genetic mapping, changing of plant architecture and bio-safety has tremendous potential to impact the quality of crops. The improvements in global agriculture needs creative science as well as development of plant-derived products with high returns. This paper discusses about growth of traditional agricultural and industrial sectors, including natural resource-based sectors. [3] IOT means Internet of things. IOT has wide range of application on agriculture. There are three layers in IOT. They are perceive, transportation and application. By using perceive layer they will acquire the information of which crop should be done on that land, conditions of soil and conditions of environment in that area. Transportation means in this we use WiFi network and GPRS, Bluetooth connections for intelligent networking methods. The use of WiFi and Bluetooth is multidimensional information fusion. There is wide range of application of IOT in agriculture industry. Those are the three layers which are used in modern agriculture to put IOT forward. [4] Wireless sensor networks (WSN) has become an important part in tremendous growth in field of agriculture. It is new technology and ideal candidate for solutions to various problems that include, agricultural issues, monitoring of health. It brings with itself a plethora of knowledgeable aspects of automation control, storage of information digital network transmission, etc.. Its development has helped in controlling and monitoring of greenhouse parameter in agriculture. In Precision Agriculture (PA), different methods and techniques are used to monitor the necessary environmental parameter for particular crop. Because of uneven distribution of rain water, wireless sensor networks help to meet the necessary requirements of different crops. The farmers who are not acquainted with any scientific knowledge bear loss due to wrong techniques and predictions of weather. The various types of

sensors and Programmable Systems on Chip technology (PSoC) have made agriculture much easy. [5] FFS means farmer field schools and CIAL'S means local agricultural research committees. Those are the two things which are used in promoting integrated decision and making innovation in agriculture to help farmers. It is mostly used by Asian farmers and it is mainly developed in Asia. In Asia there are around 200 million rice farmers. FFS has four principles of IPM. They are to grow a good crop, protect from natural enemies like pests and insects, to check field regularly and to become best by participating in FFS. FFS requires best support from national wide. FFS believe that future development will be based on this. These FFS should develop everywhere around the world and should bring better output than before. [6] The agri-food sector is prone to various global challenges which requires the support of information technologies (IT). It provides a platform to help agri-food sector to cope up with challenges and pave way for development and advancement of integrated digital environments. The technology advancement can be difficult to predict due to lack of understanding or knowledge or social factors. IT helps in reorganisation, integration of agri-food sector and its possible future outcomes. [7] PA means precision agriculture. PA needs tools to evaluate the growth of world and it needs a series of practices. Increase in the population around the world has unfavourable effects on the agriculture. Because need of more food for this much population is forcing farmers to use various pests and chemicals to enhance and better the productivity. This is affecting the farming lands. Demand for food is encouraging production and throwing into new generation known as precision agriculture. In PA, wireless sensor nodes are being used. These sensor nodes gives us hint of moisture in soil and predicts the temperature. By knowing these things they will practice farming in a manner which produces higher productivity. This is the use of precision agriculture(PA). [8] The 21st century might turn out to be a time of transition of agriculture into water efficient and intelligent mechanical agriculture along with other desired qualities like high quality, high quantity and pollution free agriculture. Digitalization of agriculture can become the major factor which can help to bring about such a change in the agricultural scenario. The essence of agricultural digitization is to digitize every aspect (crop production, animal husbandry, aquatic products industry, forestry etc.) and every step/process of agriculture (like from sowing to harvesting and storage for crop production). Agricultural digitalization has been developing rapidly in the last decade especially in the developed countries. For example; in Japan, computers are being widely used in farming for accessing weather forecast reports, insect utilization, agricultural operations and product processing. In the united states the farmers have access to huge information databases of the governmental information centres, research institutes, libraries and agricultural universities. This helps them to get latest data about current market prices for their produce, new agricultural equipment, latest farming techniques, seed melioration , prevention and treatment of plant diseases and pests and so on... The concept of IoT i.e. interlinking of all the devices to a single network to provide a smooth and hassle free efficient coordinated execution of a process can further help the farmers to get all their concerns cleared by just a single integrated software which can provide them with suggestions over best crop for their geographic conditions , amount and type of pesticide to be used, best type of farming cycle for their geographical terrain etc. This can be further combined with suitable machinery to enable automation of farmlands through sensors which detect weed, detect crops and their need for water i.e. if the soil has become too dry in combination with precision engineering of machines which can burrow, sow, harvest and store produce. [9] New methods of enhancing crop growth and quality of produce keep on being explored and one of the many inventions which can improve the art of agriculture a lot is Nano agriculture.

Nano agriculture involves the use of small particles of size of the order of a few hundred nanometres called nano particles which can be used to sense and release certain substances on demand to certain specific target areas. For example, nano particles can be used to apply fertilizers or pesticides to crops instead of conventional spraying of fertilizers, which will ensure even and correct levels of chemicals across the field. Nano particles will also help prevent crop diseases by sensing anomalies and ejecting the remedy for it even before we can observe it on the macro scale. It also supports sustainable agriculture immensely because normally pesticides deteriorate the quality of soil by formation of oxidative stress on the soil and hence polluting it with oxygen free radicles. Nano particles can also be used as a mediator for plant gene modification for favourable changes in their genetic structure to improve resistance to diseases and to improve quality of produces and similar favourable traits. Nano particles also are used to make carbon nano tubes which can be used to deliver required molecules to a germinating seed ensuring its healthy growth. [10] Information Technology is nearly being used in all the fields and it has been high time that it may also be introduced to the agriculture in developing countries. It can be used as a platform for peasants to learn about the current market prices and condition of the agricultural economy. IT can be used to avail the latest and greatest technological machines for to the farms of the farmers. These can be employed to give notifications and updates about climatic conditions to the farmers. They can be used as a platform for cultivators to trade and pool their resources amongst the other farming community to reduce costs and to save time. They can then utilise IT to send information and status of their farmlands to remote agricultural research centres for improvement and advancement in methods of farming. It can also be utilised by farmers to clear their queries about non-conventional farming methods at remote agricultural help centres. It can be used for big data services enabling farmers to access various government databases and university databases helping them get the knowledge to farm more efficiently and to find buyers to sell their buyers at the right price.

Findings

Technology leverage in agriculture provides a three-pronged approach to better productivity, efficiency and effectiveness of farming practices. Firstly, Information Technology enables innovation through RFID devices, Wireless Sensor Networks as well as through IoT and digitalization of agriculture to provide better information for decision making and better management of agriculture. Such enablement is not only at technology level, but also considers other factors such as social, economic, geological and climatic factors. In addition, it encompasses integrating various different parameters and factors to provide a holistic solution to significantly improve and innovate agriculture practices and outputs.

Secondly, biotechnology and nano-technology driven improvements are helping improve quality of both inputs for agriculture as well as outputs of agriculture and related activities. It focuses on research based improvements of crops, especially on quality and yields through continuous efforts on developing better and more resilient strains of crops.

Thirdly and lastly, the technology advancements are supported by both identifying and implementing better tools, practices and mechanisms. Practices such as Precision Agriculture and initiatives such as Farmer fields schools and local agricultural research committees are enabling efforts to improve agriculture substantially. Moreover, it requires all stakeholders such as farmers, public organizations and private enterprises to work and collaborate together and share best practices and learnings globally.

Recommendation and Conclusion

From the above detailed summary of the topic ‘‘ Integrating technology in agriculture ‘’, we can conclude that integrating technology in agriculture is very productive and useful. By using RFID, FFS, CIALS, IOT and PA in agriculture brings a drastic change in agriculture industry. RFID, PA and IOT are technical methods which are used to develop agriculture and FFS and CIALS are non-technical methods used for development of agriculture. The technology development in one country should help other countries to develop in their agriculture and it removes boundaries between the countries. FFS is the most useful method to bring awareness in farmers about farming. These are the process which increase the productivity in the agriculture by using technology in agriculture.

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ARTIFICIAL INTELLIGENCE-THE FUTURE

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What is Artificial Intelligence?

[1] It is combination of science and engineering which makes intelligent machines, specially computer programs which are intelligent. It is used to understand human intelligence, but artificial intelligence does not have to copy the methods which are biologically observable.

Artificial intelligence is the field of the computer science which is trying to build powerful intelligence into computer systems.

[2] Artificial intelligence is the combination of the three academic disciplines which are psychology (cognitive modelling), philosophy (philosophy of mind), and computer science. These three disciplines belong together for so many purposes but it's difficult task to join them together. Psychology and philosophy got split up in the late nineteenth century. As a branch of mathematics computer science grew up. Computers are required as tools for modelling of mental states and processes. There are lot of practical application of artificial intelligence which contains computer systems design which can perceive, learn, understand, solve problems, making of plans, conversation in natural language. These systems are already in use for medical diagnosis, identification of ships from satellite pictures, prospection of minerals, science training and translation of the language. With the help of artificial intelligence computers role changes from something useful to something essential. The main aim of artificial intelligence is to make computer to perform task that humans are good at.

History of Artificial Intelligence

[3] In its early days, artificial intelligence is based on friction, imagination, philosophy. AI is influenced by the early inventions in electronics, engineering and many more. There are early achievement which include work in the solving of the problem including basic work in learning, representation of knowledge, and inference as well as demonstration programs in language understanding, theorem proving, associative memory, knowledge-based systems. The history of artificial intelligence is filled with demonstrations, possibilities, and promise.

[4] The birth of artificial intelligence was in the summer of 1956. It's term was coined by John McCarthy. At that time subject got its first attention by researchers. It was also discussed at some conference at Dartmouth. After one year, the first problem solver was tested. The statement of Herbert Simon was that machine would be capable of work done by man in twenty years.

[5] After some year scientists realised that creation of such algorithm which can do any task is impossible. Now Artificial intelligence has a new meaning which is creation of new agents to do our works easier and faster. In 1950 there is suggestion from Alan Turing that definition for deciding whether software is intelligent or not. In the theory of Alan Turing, we can measure software intelligent behaviour like human intellectual efficiency. The software is intelligent when human being don't know whether a person is texting with human or of software.

Growth of Artificial Intelligence

[6] In few decades artificial intelligence has grown a lot. It became part of life of people living in modern society. It helped world in many ways from innovation to health care. AI made transformed business environment completely

[7] AI deployed in the goods production and services increased economic growth and income shares.

[8] All types of companies started implementing artificial intelligence. AI help in labour cost reduction. It also has improved the productivity of industries. It solved many problems of society like problems of science, government etc.

Artificial Intelligence in Healthcare Appliances

[9] Pressure sensor devices has large application in personal electronic devices and industrial monitoring and pressure sensors are good contender for upliftment of science and technology in our modern society. Flexible pressure made from organic materials has the unique advantage of flexibility and it is also low cost. It has emerged as highly active field because of their encouraging application in artificial intelligence systems and health care devices which are wearable. The electrical sensing techniques and organic electronics are quickly moving forward and they have contributed a lot in development of flexible sensors. It has the advantage of very excellent flexibility, cost effective, and it is compatible with large area processing techniques. Many flexible sensors are made from organic materials and it has been fabricated. The sensing capacities of flexible sensor can even surpass human skin. The application of pressure sensors has application of mobile biomonitoring in medical diagnostics and in health care. Flexible pressure sensor from organic material gives potential opportunity for development of excellent application.

[10] Artificial intelligence is the part of computer science which imitate human psychological functions. It brought standard shift in the medical field due to the presence of increment in healthcare data and increase in analytic techniques. Recently artificial intelligence has surpassed human being performance in various field of medical. By the use of analytical techniques, artificial intelligence is capable of preventing, detection, diagnosis, and treatment of wide range of diseases. The use of artificial intelligence is growing rapidly in medical field. Artificial intelligence helps in treatment management and diagnosis. There is creation of tension of Artificial intelligence which is surpassing of human tasks and ability. Many research paper showed that in future artificial intelligence has the capacity to support judgement of human, aid in clinical disease and increase in treatment efficiency. Artificial intelligence is used in many health care places in the world and it has made life of patients and doctors easy. It makes simple by performing important and complex task in no time and at very less cost.

[11] Artificial intelligence in healthcare can be used for inspection of patients, making patients record more well organised. It can also be used to monitor disease and aiding of diagnosis, assisting in surgical processes. It can also offer mental therapy to the patients. Artificial intelligence helps in scheduling patients, billing., staffing optimization, protocols creations, assertion of image quality, reduction of dose of radiation, and interpretation of images. These are the things we can do with artificial intelligence in radiology. We should not fear from artificial intelligence as it will not replace human beings. Artificial intelligence should be welcomed for its capability to improve and prolong human lives.

[12] Technology of wearable are the emerging tools of personal gadgets. Apart from being fashionable and with advance hardware technologies like communication modules and networking. Wearable device has capability to boost artificial intelligence with variety of valuable data. Artificial intelligence techniques like supervised, unsupervised, semi-supervised and reinforcement learning. These are already in use to carry out various tasks. The application of artificial intelligence in wearable is in sport, industry, and medical purposes. Sports application are used to give better experience during workout to users.

Artificial Intelligence in Manufacturing and Production

[13] Powerful computing networks supports modern manufacturing and logistics systems. In these networks plenty of data are being generated continuously by sensors, machines, systems, smart devices, and peoples. Big data are being analysed faster, broadly, deeper than ever before by the rise of computational capabilities. The value of artificial intelligence are redefines by these advance technology and opened new age known as industry 4.0 or the smart factory. Advance cognitive computing and deep learning methods had started to find application in the manufacturing systems for automated visual inspections, fault detection, and maintenance. There are so many active stronger learning methods to the material handling systems and production scheduling. Industries are trying to convert the real-time data into decision which are actionable.

[14] New revolution of technology and industry are gaining momentum. It is believed that new era of internet and artificial intelligence specified omnipresent networks, datadriveness, shared services, cross- border integration, automatic intelligence, and mass innovation is coming. The rapid fusion and development of new artificial intelligence technologies along with internet technologies , new generation information technologies, new energy technologies, material technology, and biotechnology are essential parts of this new era, which will enable changing transformations of means, models, well being, and ecosystems in terms of the application of the economy of nation as well as nation security. The manufacturing industry is the backbone of nation economy, people's livelihood, and national security . There is game changing transformation in terms of manufacturing models , manufacturing approaches and its approaches. In current scenario the internet, existence of sensors, arrival of big data, development of e-commerce are getting popular. There is rise of information community, and interconnection of fusion of data and knowledge with the society, physical space, and cyber phase. These emergence of new technology allow new phase for the Artificial intelligence.

[15] The internet based swarm intelligence, technology-oriented human machine hybrid augmented intelligence are the main intelligence of artificial intelligence 2.0. The rapid evolution of smart cities, intelligent medical facilities, smart transportation, smart logistics, smart robots, self driving cars, smartphones, intelligent toys, smart communities, intelligent economy and many more provides huge driving force and market demand for development of artificial intelligence and its application. It is believed that intelligent manufacturing is the new manufacturing model. The new models are internet based, service oriented, collaborative, customizable , flexible, and internet manufacturing system which is socialised to provide production and services to users. The new form of intelligent manufacturing is the intelligent manufacturing ecology with the quality of omnipresent interconnection, cross border integration, autonomous intelligence, data drivenness, and innovation in mass.

There is new mean of intelligent manufacturing which are human-machine integrated smart manufacturing systems which features digitalisation, Internet of things, virtualisation , service, collaboration, customization, flexibility and intelligence. If the application of these models, forms, means are deeply integrated then it forms an ecosystem of intelligent manufacturing.

Artificial Intelligence in Security and Surveillance

[16] There are greater possibilities to make best use of Artificial intelligence in fighting against crimes and to make national security stronger. Artificial intelligence can bring success in the need for quick decision making and circumstances of unthinkable accumulation of data. Process like intelligence, counterintelligence, forensic science, counteracting organised crime, quick processing of available data, drafting of decision, creation of plans and multivariation of circumstances, analysis are very time consuming. By the use of artificial intelligence can only reduce time and in result increasing possibilities for detection, prevention and restrain crime.

[17] There are lot of application of artificial intelligence for security of nation in United States and other parts of world. There are lot of application of artificial intelligence for national security. The applications are cyber security, information security, diplomacy, homeland security, defence. This is not only the complete list of possible application of artificial intelligence.

[18] Cyber surveillance is less labour intensive as compared to human surveillance method which it has replaced. The increase in use of machine learning can grow the trend of artificial intelligence. Researchers at Microsoft and Pacific Northwest National Laboratory have revealed a technique to use neural network and generative adversarial network for the automatic production of malicious inputs and find which inputs will lead to the discovery of security related vulnerabilities. In traditional method, those type of inputs are tested by randomly modifying the non- malicious input. Militaries all around the earth are assimilating robotics and autonomous systems into their forces. Artificial intelligence and machine learning will enable systems to tackle more difficult and challenging tasks in large environment. In combat operations, the robots, swarms and autonomous system has the capability of increasing the pace of fight. Artificial intelligence can also give more power to the advance sensors and communication. AI can help in Situational awareness by use of small robotic sensors which can be used to collect data, Artificial Intelligence sensors senses and processes data which could help in better understanding of data.

Artificial Intelligence in Education

[19] Artificial intelligence is the techy force of this century, and it will make all industry advance directly or indirectly. Huge amount of money are invested by government and businesses for application and lot of start-ups are being funded.

[20] Artificial intelligence supports student-support chatbots, student writing analysis, intelligent agents in game based environment, tutor facilitated by Artificial intelligence by which student can do their own learning, analytic learning. It facilitates one-on-one student interaction with the computers.

[21] AI will allow creation of robots which will uplift learning experience of students from childhood education. Cobots in collaboration with teachers can be applied to teach daily tasks with greater efficiency. It can also be used in teaching spelling and pronunciation.

[22] The online education platform has transformed a lot from providing materials online to study, download, and do assignment to pass to include student friendly, brilliant system which can analyse student and teachers behaviour.

[23] Artificial intelligence provides adaptive learning personalisation and learning styles, expert system and intelligent tutoring systems. AI is the future component of education.

Advantages of Artificial Intelligence

[24] Artificial intelligence gives advantage of solidity, trustability, limitlessness. It provides cost-effectiveness. AI has lot of application in engineering, medicine, law, manufacturing, construction, linguistics, etc. AI provides permanency that prevents loss of knowledge when the individual or group of member retire or are no longer available to the organisation. Artificial intelligence enhances development of learning capability.

[25] It improves efficiency of bank processes like KYC(know your costumer), scoring of credit, automation, classification of documents. It helps in development of security and controls of risks like monitoring and detection of money laundering. It monitors payment transaction. It also help in prevention of fraud. It enhances costumer experiences, satisfaction, interaction by voice banking, biometric authentication, costumer segmentation, chatbots, robo-advice, targeted costumer offers.

[26] Computer network and artificial intelligence has positive and powerful impact in revolution of manufacturing and production industry. With the wide availability of artificial intelligence product like sensors, smart devices, machine productivity has increased in recent time. With the use of artificial intelligence, product are analysed faster, more deeply and broadly. With introduction of the artificial intelligence efficiency, quality of the product has increased.

[27] It also provided with cost-effective and environment friendly. These all resulted high competition of manufacturing enterprise or group in market. Artificial intelligence is used also in designing the environment cost control of manufacturing sector.

[28] Artificial Intelligence helps in advancement of imaging modalities like ultrasound, mammography, magnetic resonance imaging, and tomosynthesis. It helps in detecting malignant lesions in the early stages and improve prognosis of breast cancer patients. By the use of machine learning software radiologist may increase their efficiency and free up more resources. AI software also includes second opinion, access malignancy, patient assisting in triage.

Challenges or Disadvantages of Artificial Intelligence

[29] It can be misused which can leads to large scale destruction. It affects human jobs. It makes younger generation lazy. There is increase in technological dependency. It is very time consuming and expensive. Mismatch of problem sometime done opposite to command.

[30] It is not easy to develop the machines as equipment are expensive. Machine cannot develop bond with human beings which is important for team management. Machine can only perform tasks which they are designed too, anything which is out of that leads to crash or give irrevelent outputs. Human interference is getting reduced.

[31] Legal action and foregoing regulation which follows identification of situations are challenged when it comes to making right decision. Artificial intelligence has multifaced character. We have the ability to write algorithms, but who wants to drive a car which can kill you to save other people.

[32] Artificial intelligence in military has high risk such that AI system need to be transparent in order to gain trust of decision maker and provide risk analysis. Artificial intelligence system of military should be reliable and robust, it is a challenge as AI may be prone to unnoticeable manipulations of data entry.

[33] In the course setting college business English majors, there is lack of practical teaching skills to enhance the spirit of Artificial Intelligence. Many university have conducted AI ideological education activities, but due to some reasons AI ideological education level is still low. The practice and application of Artificial Intelligence is still undivisible as there is lackage of practical link.

Conclusion

In my own opinion Artificial Intelligence is the future. It can solve many real word problems.

It is very beneficial for human beings. It has many application like in military, ethics security and surveillance, agriculture. The automation made task easier and cheaper. Artificial intelligence is very useful in healthcare sector as it reduces the risk. Artificial intelligence can benefit business by understanding costumer better and give them quick response to their requirements. Artificial intelligence can be highly beneficial for agriculture as it can improve the harvest quality and prevent plant diseases. It can help in prevention of destruction of crops. Artificial intelligence can enhance irrigation and farming systems. Artificial intelligence can improve can improve efficiency of human workplace and can do human work. Artificial intelligence can be dangerous. There are many risks associated with Artificial intelligence like privacy violation, loss of human jobs, weapons automization, Artificial intelligence terrorism, socio economic inequality, Artificial intelligence has both good and bad effect. If we use Artificial intelligence in wisely it can benefit human very much.

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