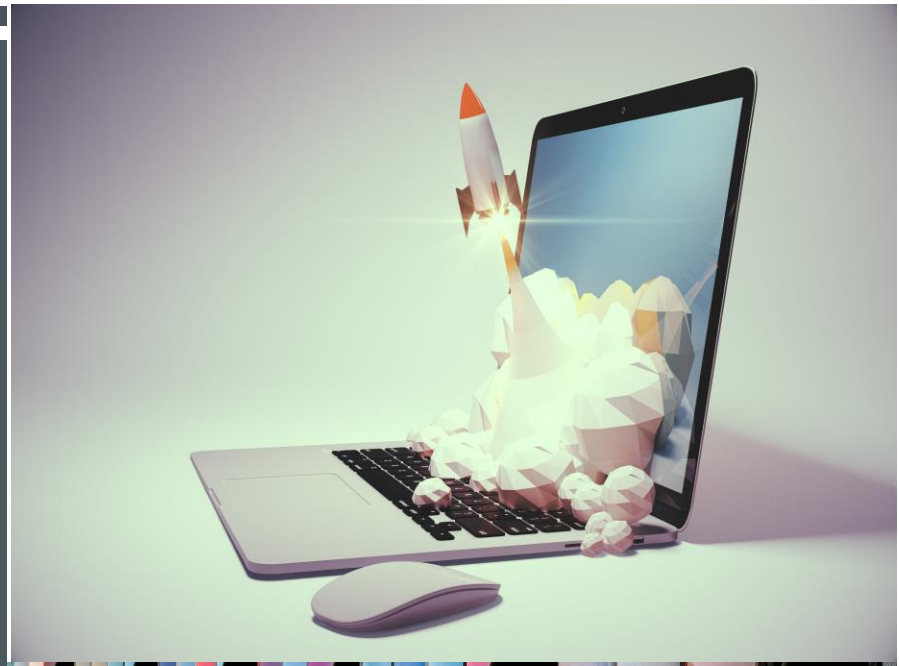
ARTIFICIAL INTELLIGENCE IN AGRICULTURE

:WHAT IS AI?

:AGRICULTURE

: AI INFLUENCE IN AGRICULTURE



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WHAT IS ARTIFICIAL INTELLIGENCE?

ARTIFICIAL INTELLIGENCE EXPLANATION

- AI is the short form for artificial intelligence. Artificial intelligence or AI refers to systems or machines which mimic human intelligence and help humans to solve problems when a large amount of data is provided. AI is like humans they can improve themselves over time which will help them to act faster and smarter. AI is about super-powered thinking capabilities and data analysis. It is intended to enhance the contribution of humans towards modernization. AI has reduced the human intervention in some online applications that earlier needed human input. The prime examples of these are online chess and communicating with subscribers. AI has taken over this reducing the workload of many customer-oriented companies which can now provide more output than earlier. The most words which we hear when we talk about AI are machine learning and data science.

DETAILS OF AI NEW WORDS AND RELATION WITH DEVELOPERS

- Machine learning- It is based on the process of self-evolving. More the data is consumed more the accuracy and precision. To get the full output of AI many companies across the world are putting more work into data science.

- Developers use AI more efficiently in the fields of extensive manual labor, to connect with customers, to identify a specific pattern and to solve problems that need advanced thinking capabilities.

EXAMPLES OF SUCCESSFUL APPLICATIONS OF AI

According to **Harvard Business Review,** the number of stories produced by the Associate press was almost 12 times the usual output by training AI to write short stories. This helped the journalists and the writers not to concentrate and create more in-depth pages on a topic.

Deep Patient an AI-powered tool made can predict diseases almost up to one year prior to the symptoms upon identifying the person's medical history. This helps people to take precautions way before, thus saving lives.

AGRICULTURE

DEFINITION

SCOPE

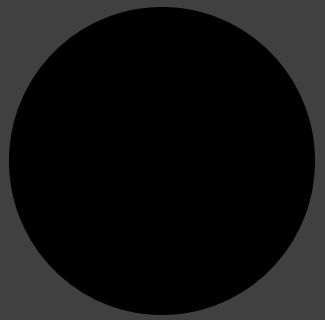
DEFINITION AND SCOPE

- The terms agriculture is derived from the Latin word Agri and Cultura which means soil and cultivation, respectively. Agriculture is a branch of applied science that comprises crop production including horticulture, livestock rearing, fisheries, forestry, etc.
- Agriculture accounts for about 15% of the total export earnings and provides raw material to many industries (textiles, silk, sugar, rice, flour mills, milk products). Rural areas are the biggest markets for low-priced and middle-priced consumer goods, including consumer durables and rural domestic savings, which are an important source of resource mobilization. The agriculture sector acts as a wall in maintaining food security and in the process, national security as well.

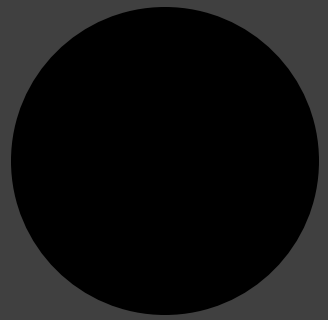
AI INFLUENCE IN AGRICULTURE

- WEATHER FORECASTING
- SOIL AND CROP MONITORING SYSTEMS
- DRONES
- PEST DETECTION
- AGRICULTURE ROBOTS
- CONCLUSION.

WEATHER FORECASTING



With the increase in soil pollution and dramatic climatic changes it's difficult for farmers to predict the correct timing for sowing seeds.



With the help of AI farmers can analyze weather conditioning using weather forecasting which help them plan the type of crop that can be cultivated and thus reducing the budject.

SOIL AND CROP MONITORING SYSTEMS

- Soil and nutrition play an important part in the growth and quality of the crop. Details upon the quality of the soil are needed for agriculture. But due to increased deforestation, there is a huge drop in the quality of the soil.
- A germen-based company has created an application called Plantix that can detect nutrient deficiency in the soil, plant pest, and their diseases. This app uses image recognition so it's easier to use. The farmers have to just capture the photo of the crops. It will give detailed analysis, correct steps to use nutrients. We can also see soil restoration techniques with tips for easier management of corps.
- Trace Genomics is another machine learning-based company that helps farmers to do a soil analysis to farmers.

DRONES

- In order to monitor crop health, a technology-based company SkySqurrel has introduced drone-based imaging systems. In this, the drones capture the situation of all the crops over a large area which is later transferred and analyzed by agriculture experts to find good solutions. With this, the company provide detailed data on current health of the crops. It also helps farmers to identify pest's and bacteria which helps farmers to do pest control and effective crop management to produce excellent yield.

PEST DETECTION

- Pests are one of the main problems faced by farmers.
- AI system use satellite to capture image of the farm and compare them with historical data using AI algorithms. These system look after the crops 24*7 and sent notification to the smartphones if pest or locusts is to be detected.
- This helps farmers in effective pest control and avoid unnecessary harm to the crops.

AGRICULTURE ROBOTS

- Multi-tasking robots are prepared by AI companies which only need overall supervision from humans. These robots are programmed to control weeds and harvest the crops at a faster rate and larger volumes compared to humans.
- These robots are trained to check the quality of crops, detection of weeds, picking, packing and many other things.

CONCLUSION

- AI applications and system can help farmers in providing effective land management, water management, crop rotation, timely harvesting, pest detection, type of crop to be grown and effective crop nutrition plans.
- Farmers with AI connectivity can access crop plans, weather forecasting and other data.
- The side effect of AI implementation can cause huge unemployment. The advantages are more than the disadvantages. Hence AI in farming and agriculture can help farmers produce more food needed for the growing population.