**IV. PRESENTATION OF THE CHOSEN TECHNOLOGY**

1. **Uses and Functions**

Artificial Intelligence (AI) has diverse applications across various sectors, including healthcare, agriculture, business, and education. The following are examples of the uses and functions of AI in each of these fields:

1. Healthcare

* Medical Diagnosis: Artificial intelligence algorithms are capable of analyzing vast amounts of medical data, such as patient records and diagnostic imaging, in order to help healthcare professionals in making accurate diagnoses of diseases. AI-powered systems, for instance, can analyze medical images (e.g., X-rays) in order to detect and identify abnormalities or assist in the identification of diseases like cancer.
* Virtual Health Assistants: AI-powered virtual health assistants are responsible for a variety of tasks, which include responding to routine patients' queries via calls and emails, scheduling appointments with doctors, managing patients' medical information and protecting sensitive data, sending follow-ups and clinical appointment reminders to patients, and so on. This is created by integrating systems with cognitive computing, augmented reality, and body and speech gestures.
* Drug Discovery: Artificial Intelligence can speed up the drug discovery process by analyzing large amounts of data and identifying potential drug candidates. AI technology enables healthcare professionals to scan pre-existing drugs and utilize them to redesign medication in order to fight particular diseases. AI could help in predicting the efficacy and safety of new compounds, reducing the time and cost required for traditional trial-and-error methods of developing new drugs.

1. Agriculture

* Crop Monitoring and Management: AI-enabled systems can monitor crop health, detect plant pests and diseases, and optimize irrigation and fertilization schedules by analyzing satellite imagery, drone data, and sensor readings. Farmers utilize AI's image recognition technology in order to capture images of plants and obtain quality information. Farmers are able to receive real-time information on the current condition of their crops and make data-driven decisions to use better fertilizer, improving harvest quality and reducing resource waste.
* Weather Forecasting: AI allows farmers to gather information on weather analysis (e.g., forecast temperatures), allowing them to predict how many fruits or vegetables will be harvested. It can also assist farmers in determining optimal irrigation patterns based on predicted rainfall.
* Plant Disease Diagnosis/Detection: Due to AI predictions, farmers are able to acquire information about diseases easily. They can easily diagnose diseases with the proper approach and on time. It can save the life of plants and farmers' time, allowing farmers to take immediate action in order to reduce crop losses. Computer vision technology is used to pre-process plant images. After detection, the diseased part of the plant images is cropped and sent to the labs for further diagnosis or analysis. This method is also useful for detecting pests, deficiency of nutrients, and the like.

**REFERENCES:**

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