FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

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TYPES OF MACHINE LEARNING

Machine Learning is the science of making computers learn and act like humans by feeding data and information without being explicitly programmed.

Machine learning algorithms are trained with training data. When new data comes in, they can make predictions and decisions accurately based on past data.

For example, whenever you ask Siri to do something, a powerful speech recognition converts the audio into its corresponding textual form. This is sent to the Apple servers for further processing where language processing algorithms are run to understand the user's intent. Then finally, Siri tells you the answer.

There are two types of machine learning:

1. Supervised Learning

2. Unsupervised Learning

Supervised and unsupervised learning:

SUPERVISED LEARNING:

The machine learns under supervision. It contains a model that is able to predict with the help of a labelled dataset. A labelled dataset is one where you already know the target answer.

Supervised learning can be further divided into two types:

1. Classification

2. Regression

UNSUPERVISED LEARNING: Machine uses unlabelled data and learns on itself without any supervision. The machine tries to find a pattern in the unlabelled data and gives a response.
Unsupervised learning can be further grouped into types:
1. Clustering

2. Association

Supervised Learning	Unsupervised Learning
It uses known and labelled data as input	It uses unlabelled data as input
It has a feedback mechanism	It has no feedback mechanism
The most commonly used supervised learning algorithms are: • • Decision tree • • Logistic regression • • Support vector machine	The most commonly used unsupervised learning algorithms are: • • K-means clustering • • Hierarchical clustering • • Apriori algorithm

Convolution Neural Networks :

A convolutional neural network (CNN or ConvNet), is a network architecture for deep learning which learns directly from data, eliminating the need for manual feature extraction.
CNNs are particularly useful for finding patterns in images to recognize objects, faces, and scenes. They can also be quite effective for classifying non-image data such as audio, time series, and signal data.
Applications that call for object recognition and computer vision such as self-driving vehicles and face-recognition applications rely heavily on CNNs.
CNNs provide an optimal architecture for uncovering and learning key features in image and time-series data. CNNs are a key technology in applications such as:

• **Medical Imaging**: CNNs can examine thousands of pathology reports to visually detect the presence or absence of cancer cells in images.

• **Audio Processing**: Keyword detection can be used in any device with a microphone to detect when a certain word or phrase is spoken - (‘Hey Siri!’). CNNs can accurately learn and detect the keyword while ignoring all other phrases regardless of the environment.

• **Stop Sign Detection**: Automated driving relies on CNNs to accurately detect the presence of a sign or other object and make decisions based on the output.

• **Synthetic Data Generation**: Using Generative Adversarial Networks (GANs), new images can be produced for use in deep learning applications including face recognition and automated driving.

FLASK:

• Project Layout
• Application Setup
• Define and Access the Database
• Blueprints and Views
• Templates
• Static Files
• Blog Blueprint
• Make the Project Installable
• Test Coverage
• Deploy to Production
• Keep Developing!