Fertilizer recommendation system for plant diseases prediction

Team id	PNT2002TMID00123
Project title	Ai-Powered Nutrition Analyzer for Fitness Enthusiasts

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Prior knowledge:

For completing fertilizer recommendation system project one should know the following concepts:

Supervised and unsupervised learning

Regression Classification and Clustering

Artificial Neural Networks

Convolution Neural Networks

Flask

Supervised and unsupervised learning:

Supervised learning, as the name indicates, has the presence of a supervisor as a teacher. Basically supervised learning is when we

teach or train the machine using data that is well labelled. Which means some data is already tagged with the correct answer. After that, the machine is provided with a new set of examples(data) so that the supervised learning algorithm analyses the training data(set of training examples) and produces a correct outcome from labelled data.

Unsupervised learning is the training of a machine using information that is neither classified nor labeled and allowing the algorithm to act on that information without guidance. Here the task of the machine is to group unsorted information according to similarities, patterns, and differences without any prior training of data.

Regression Classification and Clustering:

Regression and Classification are types of supervised learning algorithms while Clustering is a type of unsupervised algorithm. When the output variable is continuous, then it is a regression problem whereas when it contains discrete values, it is a classification problem.

Artificial Neural Networks:

Artificial neural network (ANN) is **a computational model that consists of several processing elements that receive inputs and deliver outputs based on their predefined activation functions**.

Convolution Neural Network:

A convolutional neural network (CNN) is **a type of artificial neural network used primarily for image recognition and processing, due to its ability to recognize patterns in images**. A CNN is a powerful tool but requires millions of labelled data points for training.

Flask:

Flask is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where preexisting third-party libraries provide common functions.