

## Fertilizers Recommendation System for Disease Prediction

Agriculture is the backbone of the nation.

The engineering technology applied for diverse agricultural applications help the universe, cultivate more qualitative and quantitative crops.

The classification and detection/localization of plant diseases, help the farmers deal with the health of crops more efficiently.

The fertilizer recommendation system for various disease predictions are labor intensive and cost effective with drone and agricultural rovers.

Deep Learning models classify and recommend the types of fertilizers based on the predicted diseases.

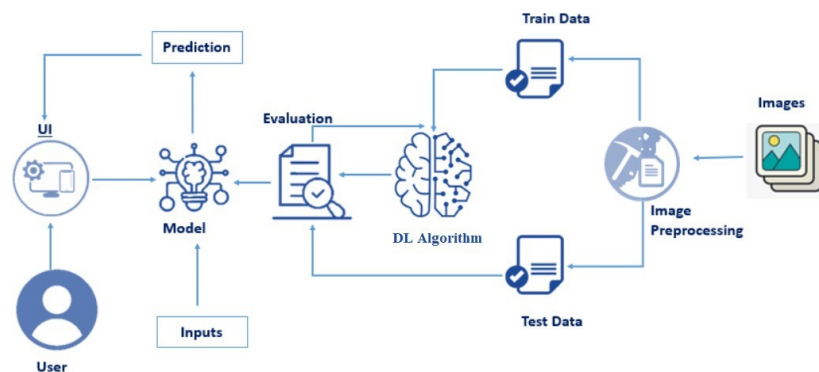
Category: Deep Learning

Skills Required: Python,Python Web Frame Works,ANN,CNN,IBM Cloud,IBM Watson Studio,IBM Machine Learning,Python-Flask

Introduction:

Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Diseases on plants placed a major constraint on the production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques. An automated system is introduced to identify different diseases on plants by checking the symptoms shown on the leaves of the plant. Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases.

Architecture:



The workflow is as follows:

Download the datasets

Image Preprocessing

Classify the dataset into train and test datasets.

Build the model with convolutional Neural Networks

Add the neural network layers.

Train and save the model

Test the models

Build Python Code

Build HTML Pages

Run the code

Train the model on IBM

Rest



## Plant Disease Prediction



Drop in the image to get the prediction

Fruit

Choose...



Prediction: Oopps!! Your apple plant is infected by Black Rots. This infection is a fungal infection. To control balck rot, remove the cankers by pruning at least 15 inches below the end and burn or bury them. Treating the sites with the antibiotic streptomycin or a copper-based fungicide will be helpful.

## Plant Disease Prediction



Drop in the image to get the prediction

Vegetable

Choose...



Prediction: Yaayy!! Your pepper plant is healthy. But, take the necessary precautions like, putting the plant where it gets at least 10 hours of direct sunlight. Keep soil evenly moist for good growth. Peppers need well draining soil that is rich and loamy, but avoid too much nitrogen in the soil. Too much nitrogen can cause plenty of leaves and little to no peppers. Your soil should have a pH between 6.0 and 6.5.