PROJECT PROBLEM STATEMENT

Plant Disease Detection using Deep Learning

PROBLEM STATEMENT

Agriculture is vital for food security, yet plant diseases significantly reduce crop yield and quality. Early and accurate detection of plant diseases is essential for timely intervention, reducing economic losses, and promoting sustainable farming. Manual inspection by experts is time-consuming, expensive, and not scalable for large farms. There is a need for an intelligent, automated system that can detect and classify plant diseases from leaf images with high accuracy, enabling farmers to take prompt corrective actions.

OBJECTIVE

Develop a Convolutional Neural Network (CNN) based system to detect and classify plant diseases from images. The system will provide highaccuracy predictions for multiple disease categories and healthy plants, support batch inference, and offer a simple interface for testing on new images.

DATASET

Dataset Name: Plant Village / Custom Plant Disease Images About Dataset: This dataset contains leaf images of various crops labeled by disease type and healthy condition. Images include variations in lighting, angles, backgrounds, and disease severity. The dataset is suitable for training CNN models to identify common plant diseases such as bacterial spot, blight, rust, mosaic virus, and others. Data augmentation will be applied to improve model robustness.