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**Plant Leaf Disease Detection and Soil Condition Monitoring System Using CNN and IoT**

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**Abstract**

This paper talked about framework utilizing Convolution Neural Network (CNN) and IoT together to help farmers to monitor the crop growth and increase yield using the three main objectives listed. The first objective is helping farmer to select a crop by analyzing the soil of the given land, using algorithm designed that displays the properties of the particular soil and lists different crops for that soil type. The second objective is to detect and prevent plant disease from spreading and spoiling the yield, the algorithm designed displays whether the plant is healthy or unhealthy if unhealthy what type of disease it is so that farmer can take preventive measures on time by spaying pesticides. The third objective helps the farmer in predicting irrigation needs by monitoring soil temperature and soil moisture.

**Keywords:**

Hydro-culture, Convolution Neural network (CNN), internet of things (IoT), soil color detection, leaf disease detection, Soil temperature sensor, soil moisture sensor, precision agriculture.

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