

# INTEGRATING AI AND IMAGE ANALYSIS FOR PEST SURVEILLANCE

## **Abstract:**

Early pest detection is a major challenge in agriculture field. The easiest way, to control the pest infection is the use of pesticides. But the excessive use of pesticides are harmful to plants, animals as well as human beings. Integrated pest management combines biological and physical methods to prevent pest infection. The techniques of machine vision and digital image Processing are extensively applied to agricultural science and it have great perspective especially in the plant protection field, which ultimately leads to crops management. This paper deals with a new type of early detection of pest system. Images of the leaves affected by pests are acquired by using a digital camera. The leaves with pest images are processed for getting a gray-colored image and then using feature extraction, image classification techniques to detect pests on leaves. The images are acquired by using a digital camera. The images are then transferred to a PC and represented in Python software. The RGB image is then converted into grey scale image and the feature extraction techniques are applied on that image. The Support Vector Machine classifier is used to classify the pest types.

## **Existing System:**

This work combines image processing techniques as well as knowledge-based technique. It will detect only whiteflies. The result of this system is more reliable and accurate than that of the manual methods. This is actually a multidisciplinary cognitive vision system that combines different types of techniques like computer vision, artificial intelligence, image processing etc. In this work, they chose rose plant as the testing crop and white fly as the pest for testing. The early stage of detection was quite difficult. So, they chose adult flies. But some problems were there in detection of adult also. The adult may fly away during the image capturing time. So, they chose to scan the leaves of rose when flies were not active. The future scope of the work is to detect whiteflies in its early stage.

## Proposed System

For this study, whiteflies and aphids are chosen because this pest requires early detection and treatment to prevent durable infection. Samples are collected by using the pan tilt camera with zoom in greenhouse as shown in Fig.1. The acquired Images are given to the local machine and the image processing techniques will takes place.

Guide Signature

Project Batch. No: 15

Name: Dr. D. Suneetha

Branch & Section: CSE- A

Designation: Professor & HOD, CSE Department

Student Name

Roll. No

B. Aishwarya

20KN1A0517

D. Swetha Sri Priya

20KN1A0542

G. Prabhu Suhas Chowdary 20KN1A0550

G. Abhinav Reddy

20KN1A0545

