

## ABSTRACT

In the agriculture sector, one of the major problems in the plants is diseases. The plant leaf diseases can be caused by various factors such as viruses, bacteria, fungus etc. Most of the farmers are unaware of such diseases. That's why the detection of various diseases of plants is very essential to prevent the damages that it can make to the plants itself as well as to the farmers and the whole agriculture ecosystem. Regarding this practical issues, this research aimed to classify and detect the plant leaf diseases automatically especially for the lemon leaf. Though many previous systems have automatic detection of the diseases none of them suggest the corrective measures to treat the plants at the right stage. Our project lemon leaf disease detection helps to detect the disease automatically and also recommends pesticides to cure the diseased leaf by using Supervised Machine Learning. The CNN algorithm is used in our project for better training and accurate calculation. By capturing and uploading the image on a website, the disease, and treatment will be displayed on the page.

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