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(57) Abstract :

This article describes a revolutionary method that uses image processing techniques to quickly and automatically identify fruit illnesses. The suggested methodology, which makes use of convolutional neural networks (CNN), provides a quick and automatic way to identify and categorize illnesses related to passion fruit. The suggested method involves several key steps, such as obtaining input photographs, pre-processing them, highlighting and identifying affected areas, validating the training set, and showing the outcomes. The system's efficacy was proven by extensive testing on a variety of fruit diseases, including powdery mildew, sooty blotch, and bitter rot, at different stages of fruit development. Through photo-to-color model conversion and Local Binary Pattern feature extraction combined with Support Erosion model development, the suggested system was able to identify fruit illnesses with an average accuracy of 79% and classify their phases with 66%. With its potential to identify fruit ailments quickly and accurately, this technology could have a big impact on resource management and prompt action in the agriculture sector. Keywords: Image Processing, Local Binary Pattern, Fruit Diseases,Convolutional Neural Networks, powdery mildew.

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