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## **Plant Disease Detection using Machine Learning**

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Abstract: Agriculture was the backbone of India now it is facing several difficulties which includes diseases, selection of quality seed, water scarcity etc. One of the main issues of agriculture field is plant diseases which causes farmers a huge loss either in loss of crop or unnecessary use of drugs. Early detection of a plant disease can prevent its spreading hence the loss of yield This paper proposes a deep learning approach that is based on improved convolutional neural networks z(CNNs) for the real-time detection of apple leaf diseases. In this paper, the apple leaf disease dataset (ALDD), which is composed of laboratory images and complex images under real field conditions, is first constructed via data augmentation and image annotation technologies. The experimental results show that the INAR-SSD model realizesa detection performance of 78.80. The results demonstrate that the novel INAR-SSD model provides a high-performance solution for the early diagnosis of apple leaf diseases that can perform realtimedetection of these diseases with higher accuracy and faster detection speed than previous methods.

Keywords: Agriculture, Plant diseases, Prediction, Machine Learning, CNN.

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