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Disease Detection in Plants using Deep Learning

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Abstract: *Crop growth and yield are essential aspects that influence the field of agriculture as well as farmer economically, socially, and in every possible way. So, it is necessary to have close monitoring at various stages of crop growth to identify the diseases at right time. But, humans naked may not be sufficient and sometimes it would be misleading scenarios arise. In this aspect, automatic recognition and classification of various diseases of a specific crop are necessary for accurate identification. This thought gave inspiration for the present proposed framework. The proposed framework mainly concentrated on the transfer learning phenomenon based on three different pre-trained models such as VGG-16, ResNet-50, and ResNet-50 v2, and then compared the three models based on transfer learning models based on various standard evaluation metrics. The dataset is considered for the implementation is the "PlantVillage" dataset which includes the various diseased and healthy leaves of Pepper, Potato, and Tomato.*

Keywords: Convolutional Neural Network, Visual Geometry Group, Support Vector Machine.

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