LITERATURE SURVEY

Application of machine learning in detection of blast disease in South Indian rice crops

It is a well-known fact that the quality and quantity of the rice crop is reduced due to plant disease. This paper proposes rice blast disease detection mechanism using Machine learning algorithm, to identify the disease in the early stage of the crop cultivation. The proposed method would find the blast disease and reduce the crop loss and hence increase the rice agriculture production in an effective manner. The images of the paddy field are captured and eight features are extracted to distinguish the healthy and the disease affected leaves. The proposed machine learning based classification methodology includes KNN and ANN.The simulation results show that KNN based classification method provides an accuracy of 85% for the blast affected leaf images and 86% for the normal leaf images. The accuracy is improved to 99% and 100% respectively for the ANN based classification mechanisms.

Plant classification using convolutional neural networks

Computers have been used for mechanization and automation in different applications of agriculture/horticulture. The critical decision on the agricultural yield and plant protection is done with the development of expert system (decision support system) using computer vision techniques. One of the areas considered in the present work is the processing of images of plant diseases affecting agriculture/horticulture crops. The first symptoms of plant disease have to be correctly detected, identified, and quantified in the initial stages. Algorithms for extraction of color and texture features have been developed, which are in turn used to train support vector machine (SVM) and artificial neural network (ANN) classifiers.

SVM and ANN Based Classification of Plant Diseases Using Feature Reduction Technique

Some important species of plants are going extinct day by day. To control the phenomena, steps are identification, restoring and protecting of the plants. Among them, identification of proper medicinal plants is quite challenging. Usually, plants are identified from their leaves. In this paper, a method is proposed for the extraction of shape features from leaf images. A classifier named as an Artificial Neural Network (ANN) is trained to identify the exact leaf class. It is done to attain high efficiency with less computational complexity. This work has been tested for the accuracy of network with different combination of image features. The results are tested on 80 leaf images. It is revealed that this method give 98.8% accuracy with a minimum of seven input features. This approach is more promising for leaf identification systems that have minimum input and demand less computation time.

Leaf Identification Using Feature Extraction and Neural Network

The latest generation of convolutional neural networks (CNNs) has achieved impressive results in the field of image classification. This paper is concerned with a new approach to the development of plant disease recognition model, based on leaf image classification, by the use of deep convolutional networks. Novel way of training and the methodology used facilitate a quick and easy system implementation in practice. The developed model is able to recognize 13 different types of plant diseases out of healthy leaves, with the ability to distinguish plant leaves from their surroundings. According to our knowledge, this method for plant disease recognition has been proposed for the first time