Detection and Analysis of Plant Leaf Diseases using Image Processing

Abstract

The urgent need is that many plants are at the risk of extinction. About 50% of Ayurveda medicines are prepared using plant leaves and many of these plant species belong to the endanger group. So it is very necessary to set up a database for plant protection. Here first step is to teach a computer how to classify plants. Herein this project employ Probabilistic Neural Network (PNN) with image and data processing techniques to implement general purpose automated leaf recognition for plant classification. 12 leaf features are extracted and orthogonalized into 5 principal variables which consists the input vector of the PNN. The PNN is trained by 30 leaves to classify 5 kinds of plants with accuracy greater than 90%. Compared with other approaches, this algorithm is an accurate artificial intelligence approach which is fast in execution and easy in implementation. The detection of plant leaf disease is a very important factor to prevent serious outbreak. The developed processing scheme consists of four main steps, first a color transformation structure for the input RGB image is created. Then green pixels are masked and removed using specific threshold value, then the image is segmented and the useful segments are extracted, finally the texture statistics is computed from SGDM matrices. Finally the presence of diseases on the plant leaf is evaluated.

References

Detection and Analysis of Plant Leaf Diseases using Image Processing


Index Terms

Computer Science
Image Processing

Keywords

Image Processing  Pnn  Ann