Abstract

This paper compares various algorithms that are used for plant classification based on leaf images are presented. The paper reviews the main computational, morphological and image processing methods that have been formulated in recent years. At the end, we conclude with the ongoing work in the present area and the other existing problems in the area. The automatic digital plant classification can be done by extracting various features from its leaves and still there exist possibilities to improve plant species identification through the designing of a new digital automatic plant identification and recognition system. In general different ways can be used with following major steps. Firstly, leaf images are acquired with high quality digital cameras and scanners then the user has to select a base point and reference points are marked on the leaf blades. This step leads to the extraction of several morphological features and these features are used as inputs to a machine learning algorithm. The use of the Probabilistic neural network is done for the above process and for this the network is trained with leaves from different plant species. At last the recognition rate and accuracy are tested for each proposed methodology. All the specified methods work only for plant leaves that are broad
and flat or they are more or less two dimensional in nature.

References

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**Index Terms**

Computer Science  
Image Processing

**Keywords**

Plant Leaf Classification, PNN, PCA, Texture Analysis and Radial Basis Function, Moments Invariants, Neural Networks.