Half Leaf Shape Feature Extraction for Leaf Identification

Abstrak

Leaf image features are extracted mainly from shape information. Other features extracted such as vein patterns, colour and textures. Most of the previous and current leaf identification literatures utilize the whole leaf for feature extraction and to be used in the leaf identification process. In this paper, preliminary study of a half leaf features extraction for leaf identification is carried out and the results are compared with the results obtained from the leaf identification based on a full leaf features extraction. This study is inspired by the neuronal network implementation, in which token features are extracted from a leaf along with its shape and these features are represented as cosines and sinus angles. The feed-forward back-propagation network structure is trained using 111 leaves in order to classify 14 different species of plants. The results of the leaf identification based on a half-leaf features extraction illustrate that feature reduction for leaf identification can be performed by taking into consideration only half of the leaf's structure for leaf species identification