Abstract

We propose and experimentally evaluate a software solution for automatic detection and classification of plant leaf diseases. The proposed solution is an improvement to the solution proposed in [1] as it provides faster and more accurate solution. The developed processing
scheme consists of four main phases as in [1]. The following two steps are added successively after the segmentation phase. In the first step we identify the mostly-green colored pixels. Next, these pixels are masked based on specific threshold values that are computed using Otsu's method, then those mostly green pixels are masked. The other additional step is that the pixels with zeros red, green and blue values and the pixels on the boundaries of the infected cluster (object) were completely removed. The experimental results demonstrate that the proposed technique is a robust technique for the detection of plant leaves diseases. The developed algorithm's efficiency can successfully detect and classify the examined diseases with a precision between 83% and 94%, and can achieve 20% speedup over the approach proposed in [1].

Reference

Fast and Accurate Detection and Classification of Plant Diseases


Index Terms

Computer Science

Image Processing
Key words

K-means
SGDM Matrix
Color

Co-occurrence Method

HSI

Neural Networks