

# **AUTOMATIC PLANT LEAVES RECOGNITION SYSTEM**

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By

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## **Abstract**

Today most of the people are interested in botany and students and researchers are engaging in botany. When studying botany, leaf recognition is an essential part. The different shapes and different nerve structures of the leaves are considered to classify the leaves. This research is developed to recognize a plant leaf by image. In the system highly considered about the nerve structure of the leaf. Basic Image processing Techniques, Artificial Neural Networks were used to implement the system.

Identify a leaf using an image is a challenge. There are lots of different leaves around the world. It is not easy to identify all those leaves by single system. This research was developed to identify sample of 5types of leaves, Jack, Guava, Coral jasmine, lemon, Asoka.

System accepts an image (one leaf with white background) and identifies the shape and nerve structure of the leaf. If it is pre identified leaf of the system it will give the details of that particular tree. Otherwise it will give a message to the admin to classify the leaf.

Digital Image Processing and Artificial Neural Networks were used to implement the system. DIP module was used to extract the pictorial information from the source image, ANN module was used to recognize the nerve structure of the leaf image.

Image processing module was implemented using C# programming language with the support of EmguCV (C# framework for OpenCV). Aforge framework was used to implement the ANN module. All those modules and Graphical user interface (implement using C#) were integrated and form a single complete system that performed the process.