Abstract

The hard thing to learn plants with correctly and directly because of there are many kinds of plants in the earth was a background of the case, and then needed a application which helped people to learning and knowing about many kind and benefit of plants with easy. According to the plant taxonomy science theory, this problem can be inferred by one part of the plant that is leaves. The Leaves contain the information in one type of plants. We can easily found and collect leaves anywhere. Through the computing process, it shows the basic features of leaf and uses for the pattern of classification in recognizing type of plant precisely.

This application utilizes image processing and pattern of recognition techniques to cover our shortfall recognition capabilities by using image. This final assignment implements probabilistic neural network method to recognize the leaves image. Five basic geometry feature and 12 morphology feature are output in extraction feature which reducted dimension with PCA tobe 5-12 dimension for tobe PNN's input. The best performance system is looking for with arithmetic of accuration in every system and looking for lowest of error.

The result of research show that the best dimension of reduction can be in dimension 11-12 with accuration average level is 5% which means more feature from leaves tobe input in classification then the result is getting accurate. According the test, amount of traing set more than 60% than testing set, with the result that in recognition process can be produced more better leaf recognition. The fault of detected a type of plant bacause of the leaves have same and resemble morphology feature like shape and vein.

Keywords: leaf, plant, classification, image preprocessing, feature extraction, probabilistic neural network