Classification of Plants Using Invariant Features and a Neural Network

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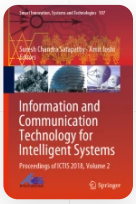

Information and Communication Technology for Intelligent Systems

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Abstract

This chapter presents leaf shape moment invariant features and a neural network approach to plant classification. Leaf image samples for plant species were processed in order to find leaf shape patterns. Further leaf shape moment invariant features were extracted and then, by using a regularized neural network, plant classification accuracy was studied. Leaf image samples of five different plants were taken for classification. Invariant features are significant for classifying plants with leaves of similar shapes. A regularized neural network was used for plant classification, based on leaf shape moment invariant features. The result of the neural network model was observed for invariant features and their combination with shape features. Eighteen shape features and seven of Hu's invariant features were

extracted from sample images of leaves from five different plant classes.

Sinuosity Coefficients for Leaf Shape Characterisation

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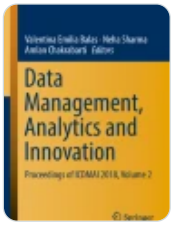

Plant Classification Using Image Processing and Neural Network

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Leaf Classification Using Convexity Measure of Polygons

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