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**Classification of bamboo species varieties by morphology of leaves using image processing technique**

Songgrod Phimphisan, Panya Thaochalee, Sakawdaun Phimphisan

Department of Computer Science, Faculty of Science and Health Technology, Kalasin University, Kalasin, Thailand

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**Abstract**

This research presents the classification and image processing method of bamboo species, varieties by morphology of leaves. Based on the size, color, width, length and slope of the image with digital image processing techniques. The system consists of three main functions: 1) Find the edge. 2) Calculation of physical characteristic bamboo image and 3) image classification. The experiments showed 10 species, 43 types of bamboo leaf. The algorithms are composed of 4 algorithms, consisting of Decision Tree, Neural Network, Support Vector Machine and Naïve Bay to be used to check the morphology of leaves according to its physical characteristics. The results showed that the algorithms that can identify digital image of bamboo varieties by morphology of leaves. The best algorithm is Supports Vector Machine with an accuracy of 57 percent. Followed by algorithms decision tree techniques with an average accuracy of 44.

**Keywords:** Images processing, SMO, Decision tree, Bamboo