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“Leaf Classifier”

A Leaf Identification System

Presented to

The Faculty of the Computer Studies Department
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by

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ABSTRACT

The Leaf Classifier is a Mobile Leaf Identification System that can identify genus and species of 15 selected leaves found within the university. Pre-processing, Kmeans Clustering, Image Segmentation, and Feature Extraction are the four main processes applied to develop the system. Minimum Distance Classifier is used to compute the distance between the unknown pattern vector and each prototype. The unknown is then classified to the class whose prototype it is closest to. Leaf Classifier is designed to help non-botanists to recognize leaves using its image. The system processes an image and calculates its features and matches it to the closest prototype in the dataset. The system will display closest matches.

The evaluation of accuracy shows that 57.33% of the time the correct identification lies on top while 86.6% percent of the time the correct identification lies within top five. The false identification rate is 13.4%.

Key Terms: Leaf Identification System, Kmeans Clustering, Image Segmentation, Feature Extraction, Minimum Distance Classifier

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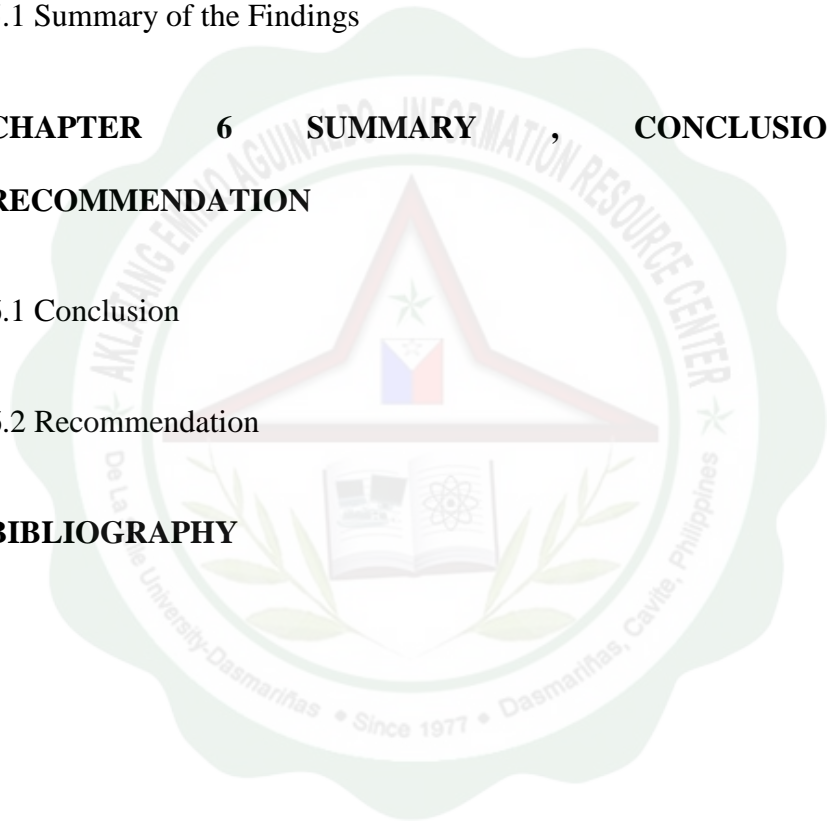
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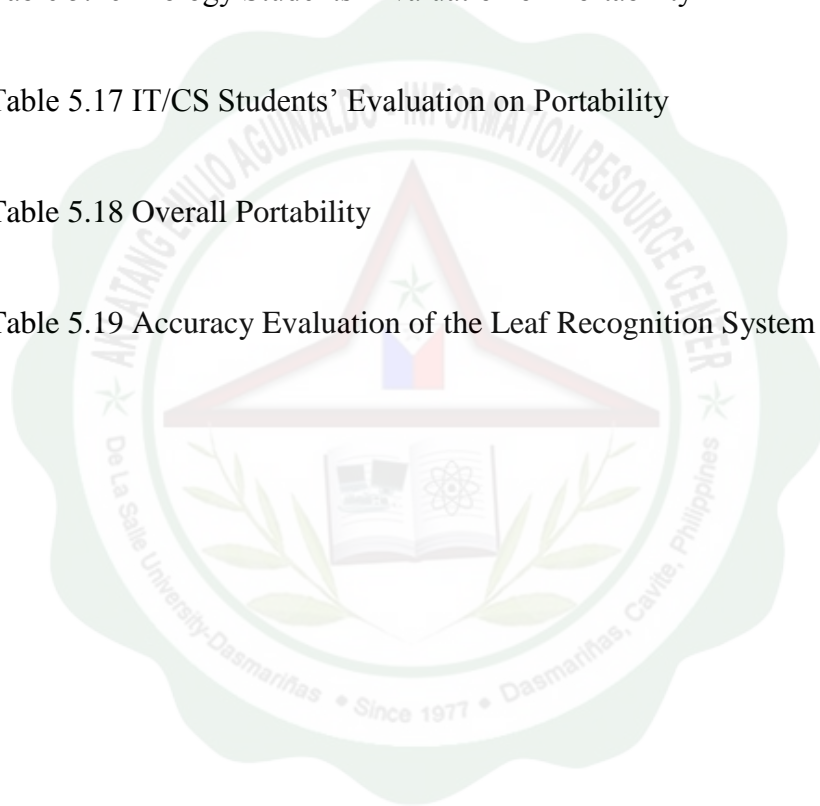
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