De La Salle University – Dasmariñas
College of Science and Computer Studies
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"Leaf Classifier"

A Leaf Identification System

Presented to
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In Partial Fulfillment of the Requirements for the Degree
BACHELOR OF SCIENCE IN COMPUTER SCIENCE

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

TABLE OF CONTENTS

Preliminaries

Abstract i

Certificate of Revision ii

Approval Sheet iii

Acknowledgment iv

CHAPTER 1 INRODUCTION

1.1 Background of the Study 1

1.2 Purpose and Description 4

1.3 Objectives 5

1.3.1 General Objective 5

1.3.2 Specific Objectives 5

1.1 Scope and Limitations 5

1.1 Significance of the Study 6

CHAPTER 2 RELATED LITERATURE AND STUDIES

2.1 Leafsnap 8

2.2 TreeBook 9

2.3 Data Mining 9

2.4 Botany Buddy 10

2.5 License Plate Recognition System Designed for Parking Lot Access Control 11

2.6 Image Processing: Some Applications in Underwater Imagery 12

2.7 Pest Detection and Extraction Using Image Processing 13

2.8 Tree Leaf Identification athrough Digital Image Processing 14

CHAPTER 3 THEORETICAL FRAMEWORK

3.1 Research Paradigm 15

3.2 Concept of the Study 18

3.3 Conceptual Operation 24

3.4 Conceptual Process 25

3.4.1 Installation Plan 25

3.4.2 Software and Hardware Installation 25

3.5 Operational Definition of Terms 26

CHAPTER 4 DEVELOPMENT OF THE PROJECT

4.1 Project Development 28

4.1.1 Screenshots 29

4.2 Development Planning 34

4.2.1 Software Suited for the Development 34

4.2.2 Analysis Requirement Needed 35

4.2.3 Language Used 35

4.2.4 Library Used 36

4.3 Evaluation of the Study 37

4.3.1 Respondents of the study 37

4.3.2 Research Instruments and Techniques 37

4.3.3 Data gathering procedure 38

4.3.4 Statistical treatment of data 38

CHAPTER 5 FINDINGS OF THE STUDY

5.1 Summary of the Findings 40

CHAPTER 6 SUMMARY , CONCLUSION AND RECOMMENDATION

6.1 Conclusion 52

6.2 Recommendation 52

BIBLIOGRAPHY 56

LIST OF FIGURES

Figure 1.1 Hierarchical Chart 3

Figure 3.1 Rapid Application Development Model 15

Figure 3.2.1 IPO Diagram 18

Figure 3.2.2 Original Image 19

Figure 3.2.3 Converted to LAB Image 19

Figure 3.2.4 Kmeans Clustered LAB Image 20

Figure 3.2.5 Image Segmentation 21

Figure 3.3 HIPO Diagrams 24

Figure 4.1.1 Main Menu 28

Figure 4.1.2 Selection Image 29

Figure 4.1.3 Image Preview 30

Figure 4.1.4 Results 31

Figure 4.1.5 Gallery 32

Figure 4.1.6 Leaf Gallery Section 33

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LIST OF TABLES

Table 3.4.2 Software and Hardware Requirements 25

Table 5.1 Biology Students' Evaluation on Functionality 40

Table 5.2 IT/CS Students' Evaluation on Functionality 41

Table 5.3 Overall Functionality 41

Table 5.4 Biology Students' Evaluation on Reliability 42

Table 5.5 IT/CS Students' Evaluation on Reliability 43

Table 5.6 Overall Reliability 43

Table 5.7 Biology Students' Evaluation on Usability 44

Table 5.8 IT/CS Students' Evaluation on Usability 45

Table 5.9 Overall Usability 46

Table 5.10 Biology Students' Evaluation on Efficiency 47

Table 5.11 IT/CS Students' Evaluation on Efficiency 47

Table 5.12 Overall Efficiency 48

Table 5.13 Biology Students' Evaluation on Maintainability 48

Table 5.14 IT/CS Students' Evaluation on Maintainability 49

Table 5.15 Overall Maintainability 49

Table 5.16 Biology Students' Evaluation on Portability 49

Table 5.17 IT/CS Students' Evaluation on Portability 50

Table 5.18 Overall Portability 50

Table 5.19 Accuracy Evaluation of the Leaf Recognition System 51

LIST OF APPENDICES

APPENDIX A Questionaire for Software Evaluation 54

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