

Universiti Teknologi MARA

**Fourier Descriptors in Catfish
Identification Based on Teeth Patches**

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ABSTRACT

There are various shape identification systems available that have been used in pattern recognitions, character recognitions, and object recognitions. Shape-based identification can be divided into two categories which are boundary based such as Fourier descriptors and Chain code while region based such as various moment-based and Zernike moments. The identification of the *Ariid* catfish is done based on the shape of teeth patches which is located on the roof of the mouth. Segmentation plays an important role in this project. Segmentation process of the image is done based on color segmentation where it extracts the shape of the teeth patches. To enhance the extracted image of the teeth patches, morphological operation is being applied. This will assist the description of the image using Fourier descriptors. This project is focus on three genera which is *Arius caelatus*, *Arius maculates* and *Osteogeneiosus militaris*. Result shows that the Fourier descriptors is translation and rotation invariant.

TABLE OF CONTENT

DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF TABLE	viii
LIST OF FIGURE	ix
Chapter 1 Introduction	
1.0 Introduction.....	1
1.1 Problem Statement.....	2
1.2 Objectives.....	2
1.3 Scope of Project.....	3
1.4 Research Purpose.....	3
1.5 Project Significant.....	3
Chapter 2 Literature Review	4
2.0 Introduction.....	4
2.1 Shape Based Image Retrieval.....	11
2.2 Shape Description Techniques.....	13
2.2.1 Fourier Descriptors.....	14
2.2.2 Chain Code Descriptors.....	16
2.2.3 Grid-Based Method.....	17
2.3 Image Segmentation.....	20
2.4 Related Research.....	21

Chapter 3	Research Methodology	24
3.0	Introduction.....	24
3.1	Methodology.....	24
3.2	Data Collection.....	25
3.3	Image Segmentation.....	26
3.4	Morphological Operations.....	26
3.5	Identification.....	27
3.6	System Flowchart.....	28
3.7	Hardware and Software Requirement.....	29
	3.7.1 Hardware Requirements for Development.....	29
	3.7.2 Software Requirements for Development.....	29
	3.7.3 Hardware Requirements for End User.....	29
	3.7.4 Software Requirements for End User.....	29
Chapter 4	Analysis and Findings	30
4.0	Introduction.....	30
4.1	Color Segmentation.....	30
4.2	Binary Image.....	32
4.3	Image Enhancement.....	32
4.4	Image Matching.....	34
Chapter 5	Conclusion.....	38
5.0	Conclusions.....	38