

CONTENTS

APPROVAL PAGE	i
SELF DECLARATION AGAINST PLAGIARISM.....	ii
ABSTRACT.....	iii
PREFACE	iv
ACKNOWLEDGEMENT	v
CONTENTS.....	vii
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
LIST OF ABBREVIATIONS.....	xi
CHAPTER I : INTRODUCTION.....	1
1.1 Background	1
1.2 Problem Identification	3
1.3 Objectives	4
1.4 Scope of Work	4
1.5 Expected Results	5
1.6 Research Methodology	5
1.7 Structure of Thesis.....	5
CHAPTER II : BASIC CONCEPTS	7
2.1 Object Detection.....	7
2.1.1 One-Stage Detection.....	8
2.1.2 Two-Stage Detection.....	8
2.2 Image Classification	9
2.3 YOLOv8	10
2.4 SimCLR.....	11
2.4.1 Data Augmentation	13
2.4.2 Base Encoder	13
2.4.3 Projection Head.....	14
2.5 B-CNN.....	15
2.6 VGG-16	16
2.7 Dataset	17
CHAPTER III : SYSTEM MODEL AND METHOD.....	19
3.1 System Design.....	19

3.1.1	Detection Process	19
3.1.2	Classification Process.....	20
3.2	Performance Parameters	21
3.2.1	mean Average Precision (mAP)	22
3.2.2	Accuracy	22
3.3	System Flowchart	23
3.3.1	System Flowchart of the Detection Process	23
3.3.2	System Flowchart of the Classification Process	24
CHAPTER IV : EXPERIMENTAL RESULTS AND ANALYSIS		26
4.1	Detection Process	26
4.2	Classification Process.....	28
CHAPTER V : CONCLUSION		31
5.1	Conclusion.....	31
5.2	Future Work.....	31
REFERENCES.....		33