

TABLE OF CONTENTS

AUTHORIZATION

SELF DECLARATION AGAINST PLAGIARISM

STATEMENT OF ORISINALITY

ABSTRACT	iv
PRELIMINARY	v
Table of Contents	vi
Images List	viii
Table List	x
I INTRODUCTION	1
1.1 Background	1
1.2 Problem Identification and Objective	2
1.3 Scope of Work	3
1.4 Hypothesis	3
1.5 Research Methodology	4
1.6 Structure of Thesis	4
II BASIC CONCEPT	5
2.1 Intelligent Transport System (ITS)	5
2.2 Object Detection	5
2.3 Object Re-Identification	8
2.4 Loss Function	8
2.4.1 Mean Square Error (MSE)	8
2.4.2 Cross Entropy (CE)	9
2.5 Back-propagation	9
III SYSTEM MODEL AND METHOD	12
3.1 System Design	12
3.2 Architecture	13

3.3	Dataset	13
3.4	Fully Convolutional One-Stage Object Detection (FCOS)	15
3.5	Intersect over Union (IoU)	17
3.6	Proposed Loss Function	18
3.7	Performance Parameter	19
3.7.1	Inference Time (fps)	19
3.7.2	Mean Average Precision (mAP)	19
3.8	System Flowchart	20
3.8.1	Main System	20
3.8.2	Setting IDE Environment	21
3.8.3	Dataset Pre-processing	23
3.8.4	Setting Training Configuration	24
3.9	Experimental Result	25
3.10	Research Plan	25
IV	EXPERIMENT AND ANALYSIS	27
V	CONCLUSIONS	32
5.1	Conclusions	32
	REFERENCES	33