

TABLE OF CONTENTS

VALIDITY SHEET	ii
STATEMENT SHEET OF ORIGINALITY.....	iii
ABSTRACT	iv
ABSTRAK	v
KATA PENGANTAR.....	vi
WORD OF THANKS	vii
TABLE OF CONTENTS.....	viii
LIST OF FIGURE.....	x
LIST OF TABLE.....	xiii
CHAPTER I INTRODUCTION.....	1
1.1 Background.....	1
1.2 Problem Formulation.....	2
1.3 Purpose and Benefits	2
1.4 Problem Limitation.....	2
1.5 Research Method	3
1.6 Implementation Schedule	3
CHAPTER II LITERATURE REVIEW	5
2.1 Solution Concept Design.....	5
2.2 Related Research	6
2.3 Quadcopter	7
2.4 Infrared Sensor Sharp GP2Y0A02YK0F	10
2.4.1 Sharp IR Sensor Working Principle.....	10
2.5 Arduino Uno	12
2.6 Fuzzy Logic	13
CHAPTER III SYSTEM DESIGN.....	15
3.1. SYSTEM DESIGN.....	15
3.1.1 Block Diagram	15
3.1.2. Functions and Features.....	16
3.2. Hardware Design	16
3.2.1. Component Specification	17
3.3 Software Design	22
3.4 Collision Avoidance System Fuzzy Model	23
3.5 Membership Function Input	23

3.5.1	Membership Fuction Fuzzy Front sensor.....	24
3.5.2	Membership Fuction Fuzzy Back sensor	25
3.5.3	Membership Fuction Fuzzy Left sensor.....	25
3.5.4	Membership Fuction Fuzzy Right sensor	26
3.5	Membership Function Output.....	27
3.5.1	Membership Function Fuzzy Forward	28
3.5.2	Membership Function Fuzzy Backward	28
3.5.3	Membership Function Fuzzy Move Left.....	29
3.5.4	Membership Function Fuzzy Move Right	30
3.6	Fuzzy Rule Base	30
CHAPTER IV.....		34
2.7	Sensor Distance Testing	34
2.8	Fuzzy Logic Testing System	36
2.8.1	Front Sensor Fuzzy Logic Testing	37
2.8.2	Right Sensor Fuzzy Logic Testing	42
2.8.3	Left Sensor Fuzzy Logic Testing	47
2.8.4	Back Sensor Fuzzy Logic Testing.....	51
2.9	Testing using Path Planning	56
2.9.1	Result.....	56
CHAPTER V		60
5.1	Conclusion.....	60
5.2	Suggestion	60
DAFTAR PUSTAKA.....		61
LAMPIRAN.....		63