

TABLE OF CONTENTS

CANDIDATE’S DECLARATION.....	i
ACKNOWLEDGMENTS.....	iii
PREFACE	v
TABLE OF CONTENTS	viii
LIST OF FIGURES.....	xii
LIST OF TABLES	xvi
CHAPTER 1	1
INTRODUCTION	1
1.1 Soft Computing	1
1.2 Fuzzy System	4
1.2.1 Fuzzy Logic	6
1.2.2 Fuzzy Sets	10
1.2.3 Fuzzy Set Operation.....	13
1.2.4 Linguistic Variables	13
1.2.5 Membership Function	14
1.2.6 Fuzzy Relations.....	15
1.2.7 Fuzzy Inference Process	16
1.2.7.1 Parts of Fuzzy inference process.....	17
1.2.7.2 Types of Fuzzy Inference Systems	18
1.3 Neural Network.....	19
1.3.1 Advantages of Neural Network	21
1.3.2 Architecture of Neural Network	21
1.3.3 Neuro fuzzy System.....	22

1.3.4 Neuro Fuzzy Logic Control System	23
1.3.5 ANFIS Structure	25
1.4 Chapter Wise Brief Summary of Thesis	26
CHAPTER 2	28
LITERATURE SURVEY	28
2.1 Fuzzy Logic	28
2.2 Neuro Fuzzy Logic	37
CHAPTER 3	44
INTRODUCTION TO DESIGN OPTIMIZED RULES FOR EMPLOYABILITY	44
3.1 Employability	44
3.1.1 The Employability Skills	47
3.1.2 Application of Employability	49
3.2 Employability Valuation through Fuzzification	52
3.3 Fuzzified Expert System for Employability Assessments	54
3.3.1 Fuzzy Rules	54
3.4 Adaptive Neural Fuzzy Inference System for Employability Assessment	58
3.4.1 Fuzzy Rules	59
3.5 Comparison between Employability through Fuzzy Logic and Neuro Fuzzy Logic	63
3.6 Conclusion	64
CHAPTER 4	65
OPTIMIZED CPU AND JOB SHOP SCHEDULING	65
4.1 CPU Scheduling	65

4.2	Design and Implementation of Modified Fuzzy based CPU Scheduling Algorithm	67
4.2.1	Results and Performance of Modified Fuzzy based scheduling	71
4.2.1.1	CASE STUDY 1	71
4.2.1.2	CASE STUDY 2	74
4.3	Job Shop Scheduling	76
4.3.1	Gupta heuristic algorithm	80
4.3.2	Fuzzified Job Shop Scheduling Algorithm	81
4.3.2.1	Experimental Results and discussion	84
4.4	Conclusion.....	95
CHAPTER 5		95
EFFECTS OF FUZZY LOGIC IN COOLING SYSTEMS		96
5.1	Air Conditioning System.....	96
5.1.1	Air Conditioning System with Fuzzy Logic	96
5.1.2	Air Conditioning System with Neuro Fuzzy System.....	99
5.1.3	Experimental Results	102
5.2	Duct System	105
5.2.1	Traditional Duct System	105
5.2.2	Two Way Duct System Using Fuzzy Logic Control System ..	106
5.2.2.1	Structure of Proposed Model	112
5.2.2.2	Working of Proposed Model	113
5.3	Comparison between traditional duct system and two way duct system.....	114
5.4	Conclusion.....	114
CHAPTER 6		115

CONCLUSIONS AND FUTURE WORK	115
6.1 Conclusions	115
6.2 Future work	117
REFERENCES	118
LIST OF PUBLICATIONS	136