

TABLE OF CONTENTS

ABSTRACT.....	i
FOREWORD.....	ii
TABLE OF CONTENTS.....	iii
FIGURE LIST.....	v
TABLE LIST.....	vi
EQUATION LIST.....	vii
LIST OF ABBREVIATIONS.....	viii
CHAPTER I INTRODUCTION.....	1
1.1 Background.....	1
1.2 Problem Identification.....	3
1.3 Objectives.....	3
1.4 Expected Results.....	3
CHAPTER II BASIC THEORY.....	5
2.1 Solar Irradiation Forecasting.....	5
2.2 Long Short-Term Memory (LSTM).....	5
2.3 Solar power plant.....	7
2.4 Performance Evaluation.....	7
2.5 Literature Riview.....	8
2.6 Critical Analysis.....	9
CHAPTER III RESEARCH METHODS.....	11
3.1 Design System.....	11
3.2 Source of Data.....	11
3.3 Forecasting Design.....	12
3.3.1 Forecasting Design of all model schemes.....	12
3.3.2 Data Sequence Formation (Time Step).....	18
3.3.3 LSTM Model Architecture.....	19
3.3.4 Model Compilation and Training.....	20
3.4 Experimental Scheme.....	21
CHAPTER IV DISCUSSION AND RESULTS.....	22
4.1 Dataset Used For Solar Irradiastion Forecasting.....	22
4.2 Model Development.....	22
4.3 Model Evaluation.....	24
4.4.1 Forecasting Using One Year Solar Irradiation Dataset.....	24

4.4.2	Forecasting Using Dry Season Solar Irradiation Dataset.....	25
4.4.3	Forecasting Using Rainy Season Solar Irradiation Dataset	26
4.4	Visualization of Solar Irradiation Forecasting.....	27
4.5	Comparison of performance Forecasting Scheme	28
4.6	Solar Irradiance Decrease Analysis	29
4.7.1	Solar Irradiance Decrease	29
4.7.2	Solar Irradiance Percentage Decrease	30
4.7.3	The Most Extreme Decline of Solar Irradiation.....	31
CHAPTER V CONCLUSION.....		36
5.1	Conclusion	36
5.2	Recommendations.....	36
Bibliography		38