

## CONTENTS

<b>APPROVAL PAGE.....</b>	<b>i</b>
<b>PREFACE .....</b>	<b>ii</b>
<b>CONTENTS.....</b>	<b>iii</b>
<b>LIST OF TABLES .....</b>	<b>v</b>
<b>LIST OF FIGURES .....</b>	<b>vi</b>
<b>ABSTRACT .....</b>	<b>vii</b>
<b>I. Introduction</b>	<b>1</b>
1.1 Research Background.....	1
1.2 Research Problem.....	2
1.3 Research Scope .....	2
1.4 Research Objective.....	2
1.5 Research Advantage.....	2
<b>II. Literature Review</b>	<b>3</b>
<b>III. Theoretical Basis</b>	<b>7</b>
3.1 Revenue.....	7
3.2 Time Series Forecasting .....	7
3.3 Time Series Forecasting Methods.....	8
3.4 Performance Evaluation .....	14
<b>IV. Research Methodology</b>	<b>15</b>
4.1 Research Description .....	15
4.2 Literature Study.....	16
4.3 Data Acquisition.....	16
4.4 Data Exploration And Preprocessing .....	17
4.5 Modeling .....	19
4.5.1 LSTM.....	19
4.5.2 CNN-LSTM .....	21
4.5.3 ARIMA .....	23
4.5.4 Model Evaluation .....	23
<b>V. Implementation</b>	<b>24</b>
5.1 Specification Of Hardware And Software .....	24
5.2 Implementation Of Data Preprocessing .....	24
5.2.1 Data Splitting .....	24
5.2.2 Min-Max Normalization .....	25

5.3 Implementation Of Training And Validating On CNN-LSTM Model.....	25
5.4 Implementation Of Training And Validating On LSTM Model.....	28
5.5 Implementation Of Training And Validating On Autoregressive Integrated Moving Average Model .....	31
<b>VI. Results &amp; Discussion</b>	<b>33</b>
6.1 Result Of Data Preprocessing .....	33
6.2 Cnn-Lstm Modeling .....	34
6.2.1 Evaluation Testing On CNN-LSTM .....	35
6.3 Lstm Modeling .....	35
6.3.1 Evaluation Testing On LSTM.....	36
6.4 Arima Modeling .....	36
6.4.1 Evaluation Testing On ARIMA .....	37
6.5 Model Evaluation Comparison .....	367
<b>VII. Conclusions And Suggestions</b>	<b>38</b>
7.1 Conclusions .....	38
7.2 Suggestions .....	39
<b>REFERENCES</b>	<b>40</b>