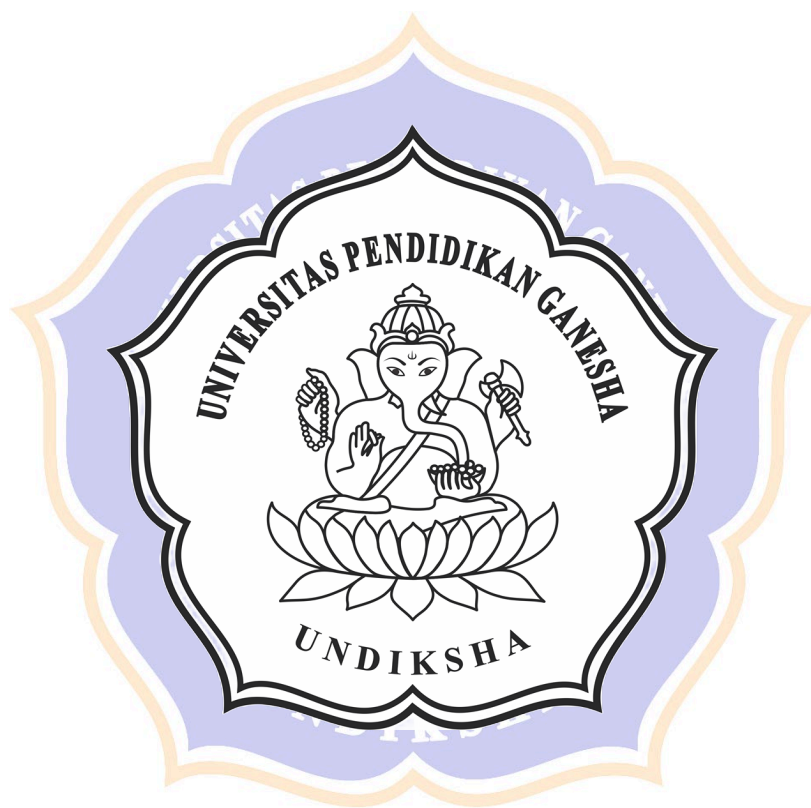


**FORECASTING SPI AND SPEI DROUGHT INDICES
USING CLIMATE DATA AND LONG SHORT-TERM
MEMORY (LSTM) NEURAL NETWORKS**



**COMPUTER SCIENCE STUDY PROGRAM
DEPARTMENT OF INFORMATICS ENGINEERING
FACULTY OF ENGINEERING AND VOCATIONAL
UNIVERSITAS PENDIDIKAN GANESHA
SINGARAJA**

2025



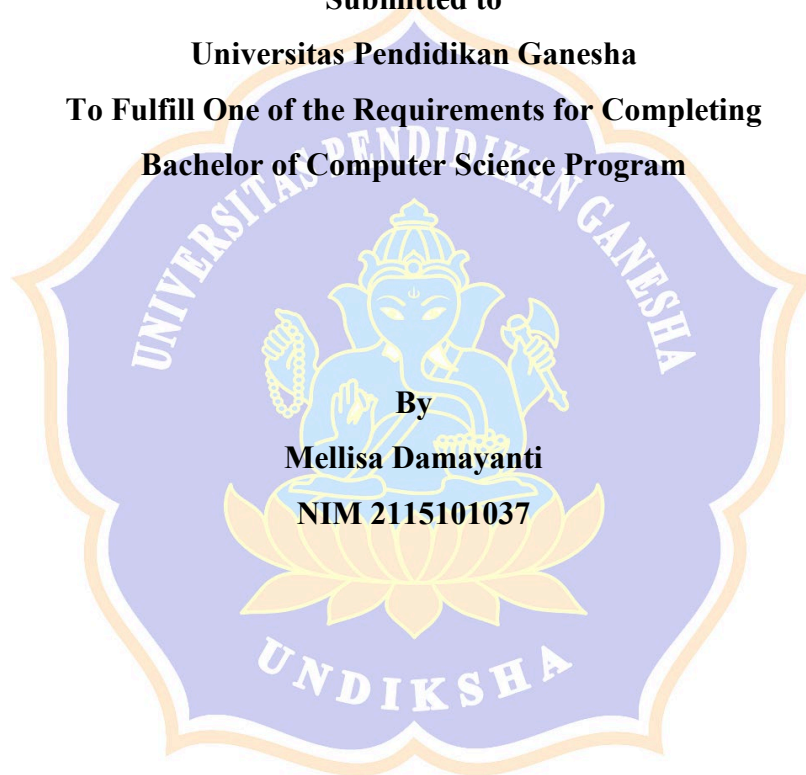
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UNDERGRADUATE THESIS

Submitted to

Universitas Pendidikan Ganesha

**To Fulfill One of the Requirements for Completing
Bachelor of Computer Science Program**



By

Mellisa Damayanti

NIM 2115101037

COMPUTER SCIENCE STUDY PROGRAM

DEPARTMENT OF INFORMATICS ENGINEERING

FACULTY OF ENGINEERING AND VOCATIONAL

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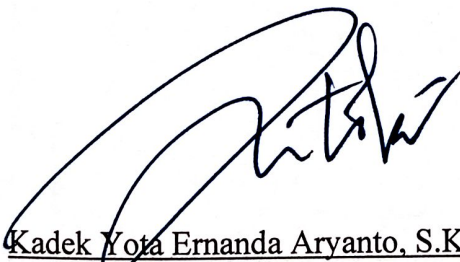
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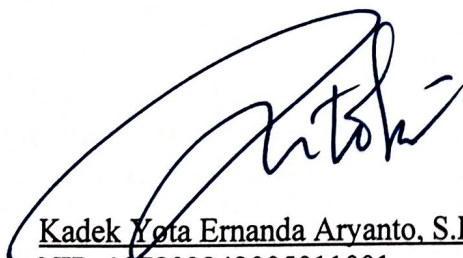
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I hereby declare that the written work entitled "Forecasting SPI and SPEI Drought Indices Using Climate Data and Long Short-Term Memory (LSTM) Neural Networks" and all its contents are genuinely my work and do not plagiarize and quote in ways that are not in accordance with the ethics applicable in the scientific community. With this statement, I am ready to bear the risk of sanctions imposed on me if later there is a violation of scientific ethics in my work or against claims to the authenticity of my work.

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MOTTO

“It is never too late to be what you might have been”

PREFACE

All praise and gratitude are given to God Almighty, whose blessings and grace have made it possible for me to complete this thesis to the best of my ability and on time. The title of my undergraduate thesis is “Forecasting SPI and SPEI Drought Indices Using Climate Data and Long Short-Term Memory (LSTM) Neural Networks.”

This thesis is submitted as a requirement for obtaining a Bachelor’s Degree in Computer Science at Universitas Pendidikan Ganesha. This work would not have been possible without the continuous support and guidance of all parties, both morally and materially. My sincere gratitude goes to:

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I acknowledge that this thesis may still have limitations that require further improvement. Therefore, I sincerely welcome suggestions and constructive feedback to enhance this thesis. I hope this study can serve as a valuable reference for relevant parties and readers in general.

Singaraja, February 14, 2024

Author

TABLE OF CONTENTS

	PAGE
PREFACE	i
ABSTRACT	iii
TABLE OF CONTENTS	v
TABLE OF TABLES	viii
TABLE OF FIGURES	x
TABLE OF APPENDIX	xiii
CHAPTER I INTRODUCTION	1
1.1 Research Background	1
1.2 Problem Identifications	4
1.3 Problem Scopes	5
1.4 Research Problem Statements	6
1.5 Research Objectives	6
1.6 Research Result Benefits	6
CHAPTER II THEORETICAL BACKGROUND	8
2.1 Drought	8
2.2 Drought Indices	9
2.3 Standardized Precipitation Index (SPI)	11
2.4 Standardized Precipitation Evapotranspiration Index (SPEI)	15
2.5 Time Series Data	21
2.6 Time Series Forecasting	22
2.7 Recurrent Neural Networks and Long-Short Term Memory	23
2.8 Performance Metrics	25
2.9 Related Research	30
2.9.1. Selection of Climate Data	30
2.9.2. Selection of Drought Indices	31
2.9.3. Selection of Distributions Used for Drought Indices	31
2.9.4. Selection of Time Scale Used for Drought Indices	33
2.9.5. Forecasting Drought Indices	34
CHAPTER III METHODOLOGY	37
3.1 Data Collection	38

3.1.1 Study Area	38
3.1.2 Climate Data Variables	39
3.1.3 Date Filtering	42
3.1.4 Spatial Clipping	42
3.2 Dataset Composition	43
3.2.1. Feature Extraction.....	43
3.2.2. Reframing Time Series Data.....	45
3.2.3. Dataset Splitting.....	46
3.3 Model Development	47
3.4 Performance Evaluation	48
3.4.1. Performance Metrics.....	48
3.4.2. Spatial Drought Assessments.....	49
3.4.3. Drought Classification	50
CHAPTER IV RESULTS AND DISCUSSION.....	52
4.1. Data Collection.....	52
4.1.1 Precipitation.....	53
4.1.2 Mean Temperature.....	54
4.2. Dataset Composition	56
4.2.1 Feature Extraction.....	56
4.2.1.1. Calculate SPI-3	56
4.2.1.2. Calculate SPEI-3.....	58
4.2.1.3. Pattern from SPI-3 and SPEI-3.....	61
4.2.1.4. Differences from SPI-3 and SPEI-3	64
4.2.2 Reframing Time Series Data.....	65
4.2.3 Dataset Splitting.....	66
4.3. Model Development	66
4.3.1 Hyperparameter Tuning.....	67
4.3.1.1. Hyperparameter Configuration.....	67
4.3.1.2. Identification of the Optimal Parameter Combination	69
4.3.1.3. Identification of the Optimal Time Step.....	75
4.3.2 Model Training	77
4.3.2.1. SPI Model	78

4.3.2.2. SPEI Model.....	79
4.4. Performance Evaluation	79
4.4.1 Performance Metrics.....	79
4.4.2 Spatial Drought Assessments.....	80
4.4.2.1. SPI Testing Result	80
4.4.2.2. SPEI Testing Result.....	86
4.4.3 Drought Classification	91
4.4.3.1. SPI Testing Result	91
4.4.3.2. SPEI Testing Result.....	94
CHAPTER V CLOSING.....	98
5.1. Conclusion.....	98
5.2. Future Work	100
BIBLIOGRAPHY	102
APPENDICES	111
BIOGRAPHY	113



TABLE OF TABLES

Table 2.1	Classification Standard of Drought Based on SPI	14
Table 2.2	Classification Standard of Drought Based on SPEI.....	20
Table 2.3	Summary of Previous Research on Drought Forecasting Topic Using Drought Indices.....	34
Table 3.1	Statistical Metrics Results from the Comparison Between Observation and WorldClim Data.....	40
Table 4.1	Example of Precipitation Data for a Grouped Pixel	57
Table 4.2	Example of 3-Month Window Precipitation Data for a Grouped Pixel	57
Table 4.3	SPI Values Over 40 Years (January 1981 – December 2020) for All Pixels in the Region.....	58
Table 4.4	Example of Potential Evapotranspiration (PET) Data for a Grouped Pixel	59
Table 4.5	Example of Water Balance Data for a Grouped Pixel	60
Table 4.6	Example of 3-Month Window Water Balance Data for a Group Pixel	60
Table 4.7	SPEI Values Over 40 Years (January 1981 – December 2020) for All Pixels in the Region.....	61
Table 4.8	Example Reframing Time Series Data with Time Step 4 for All Pixels using SPI Dataset.....	65
Table 4.9	Example Dataset Splitting Result with Time Step 4 for All Pixels using SPI Dataset.....	66
Table 4.10	Model Configurations and Hyperparameter Ranges.....	67
Table 4.11	Selection of the Optimal Hyperparameter Combination for SPI and SPEI Model.....	74
Table 4.12	SPI Model Training History and Testing Evaluation Metrics, with optimal values for each category highlighted in bold.....	76
Table 4.13	SPEI Model Training History and Testing Evaluation Metrics, with optimal values for each category highlighted in bold.....	76

Table 4.14	SPI and SPEI Model Training History on Training and Validation Datasets	78
Table 4.15	Performance Metrics of SPI and SPEI Model on Testing Dataset ..	80
Table 4.16	Drought Classification Based on SPI and SPEI Value	91
Table 4.17	Confusion Matrix of Each SPI Categorization Classes	93
Table 4.18	Confusion Matrix of Each SPEI Categorization Classes	96



TABLE OF FIGURES

Figure 2.1	LSTM Cell Architecture: Illustration of the internal memory cell operations, including the forget, input, and output gates. The image is cited from the book Dive into Deep Learning (A. Zhang et al., 2021)	24
Figure 3.1	Workflow of The Study Conducted in This Research.....	37
Figure 3.2	Study area in the Northeast Region of Thailand. The left map shows its location within Thailand, while the right map highlights provincial boundaries within the region.....	39
Figure 3.3	Correlations Between Precipitation, Minimum Temperature, and Maximum Temperature Derived from Observation and WorldClim Data.....	41
Figure 3.4	Spatial Clipping of the Northeast Region of Thailand from Global Climate Data	42
Figure 3.5	Illustration of 3-Month Data Accumulation for Pixel $p(x,y)$ Over Time. Each orange cell represents the accumulated value, derived from the sum of the two preceding blue cells and itself.	44
Figure 3.6	Example of Extracting Time Series Data for Pixel $p(x,y)$	44
Figure 3.7	Example of Reframing Time Series Data Process for Pixel $p(x,y)$.	46
Figure 3.8	Example of Dataset Splitting Process for Pixel $p(x,y)$	47
Figure 4.1	Example of Monthly Total Precipitation Data in August 2011	52
Figure 4.2	Example of Monthly Mean Temperature Data in August 2011	52
Figure 4.3	Monthly Precipitation from 1981 to 2020	53
Figure 4.4	Average Monthly Total Precipitation from 1981 to 2020	54
Figure 4.5	Monthly Mean Temperature from 1981 to 2020	55
Figure 4.6	Average Monthly Mean Temperature from 1981 to 2020	55
Figure 4.7	Monthly SPI-3 from 1981 to 2020	62
Figure 4.8	Monthly SPEI-3 from 1981 to 2020	62
Figure 4.9	Average Monthly SPI-3 Value from 1981 to 2020	63
Figure 4.10	Average Monthly SPEI-3 Value from 1981 to 2020	64

Figure 4.11	Training History Graph with Time Step 4 for the First Case Observation	70
Figure 4.12	Training History Graph with Time Step 8 for the First Case Observation	70
Figure 4.13	Training History Graph with Time Step 12 for the First Case Observation	70
Figure 4.14	Training History Graph with Time Step 4 for the Second Case Observation	71
Figure 4.15	Training History Graph with Time Step 8 for the Second Case Observation	72
Figure 4.16	Training History Graph with Time Step 12 for the Second Case Observation	72
Figure 4.17	Training History Graph with Time Step 4 for the Third Case Observation	73
Figure 4.18	Training History Graph with Time Step 8 for the Third Case Observation	73
Figure 4.19	Training History Graph with Time Step 12 for the Third Case Observation	74
Figure 4.20	SPI and SPEI Model Architecture for Drought Forecasting Model	77
Figure 4.21	SPI Model Training History Graph	78
Figure 4.22	SPEI Model Training History Graph	79
Figure 4.23	Spatial Drought Assessment of the SPI Model from January to June 2020	82
Figure 4.24	Spatial Drought Assessment of the SPI Model from July to December 2020	83
Figure 4.25	Distribution of Five Selected Pixels Used for the Detailed Analysis	84
Figure 4.26	Comparison of Observed and Forecasted SPI Values for Point A84
Figure 4.27	Comparison of Observed and Forecasted SPI Values for Point B85

Figure 4.28	Comparison of Observed and Forecasted SPI Values for Point C	85
Figure 4.29	Comparison of Observed and Forecasted SPI Values for Point D	85
Figure 4.30	Comparison of Observed and Forecasted SPI Values for Point E	85
Figure 4.31	Spatial Drought Assessment of the SPEI Model from January to June 2020	87
Figure 4.32	Spatial Drought Assessment of the SPEI Model from July to December 2020	88
Figure 4.33	Distribution of Five Selected Pixels Used for the Detailed Analysis	89
Figure 4.34	Comparison of Observed and Forecasted SPEI Values for Point A	89
Figure 4.35	Comparison of Observed and Forecasted SPEI Values for Point B	90
Figure 4.36	Comparison of Observed and Forecasted SPEI Values for Point C	90
Figure 4.37	Comparison of Observed and Forecasted SPEI Values for Point D	90
Figure 4.38	Comparison of Observed and Forecasted SPEI Values for Point E	90
Figure 4.39	Micro-average ROC-AUC Curves of SPI Categorization Classes	92
Figure 4.40	ROC-AUC Curves of Each SPI Categorization Classes	92
Figure 4.41	Micro-average ROC-AUC Curves of SPEI Categorization Classes	95
Figure 4.42	ROC-AUC Curves of Each SPEI Categorization Classes	95

TABLE OF APPENDIX

Appendix 1. Hyperparameter Configuration Code	112
Appendix 2. Data and Source Code	112

