



L^AT_EX THESIS TEMPLATE: AN UNOFFICIAL VERSION

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A THESIS SUBMITTED TO
VIDYASIRIMEDHI INSTITUTE OF SCIENCE AND TECHNOLOGY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
IN INFORMATION SCIENCE AND TECHNOLOGY
2023

Title: L^AT_EX Thesis Template: An Unofficial Version
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Program: Doctor of Philosophy Program in Information Science and Technology
 (International Program)
Examination Date 10 October 2023

Vidyasirimedhi Institute of Science and Technology approved this thesis as a partial fulfillment of the requirements for the degree of Doctor of Philosophy in Information Science and Technology.

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L^AT_EX Thesis Template: An Unofficial Version

Abstract

Author Name

This abstract presents a dummy content block intended to simulate a real thesis abstract. It spans multiple paragraphs and includes enough text to overflow onto the second page. The purpose of this demonstration is to observe how L^AT_EX handles hanging indents and vertical spacing, especially in custom environments such as keywords.

Keywords: L^AT_EX formatting, thesis template, abstract layout, hanging indent, vertical spacing, custom environments.

Acknowledgment

I would like to express my sincere gratitude to everyone who has supported me throughout this journey.

First and foremost, I am deeply thankful to my advisor, Dr. Jane Smith, for her invaluable guidance, constructive feedback, and constant encouragement. Her mentorship has been instrumental in shaping both the direction of this research and my development as a researcher.

I am also grateful to the members of the Computational Intelligence Lab for the stimulating discussions, technical assistance, and collaborative spirit that made every challenge more manageable and every success more rewarding.

Special thanks to my friends and colleagues, whose humor, advice, and moral support helped me maintain perspective during stressful times.

Lastly, I owe my deepest appreciation to my family for their unwavering belief in me. Their love and patience provided the foundation that carried me through the ups and downs of graduate life.

This work would not have been possible without all of you.

Author Name

10 October 2023

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List of Abbreviations

EEG	Electroencephalogram
MI	Motor Imagery
CNN	Convolutional Neural Network
H ₂ O	Water
DBU	1,8-Diazabicyclo [5.4.0]-7-Undecene

Chapter 1

Introduction

1.1 Motivation

This section describes the research motivation that forms the foundation of the thesis.

1.2 Contributions

This thesis makes the following key contributions:

- We introduce a novel experimental paradigm that addresses key limitations in the current research.
- We propose a novel algorithm that enhances learning performance across multiple tasks.

1.3 Outline

This thesis is organized into the following chapters:

Chapter 1 Introduction: Introduces the research motivation, key contributions, and provides an overview of the thesis structure.

Chapter 2 Background: Provides a comprehensive overview of the fundamental concepts, theoretical foundations, and prior research that form the basis of this thesis.

Chapter 3 How to Use This Template: Offers practical guidance on using the VISTEC L^AT_EX thesis template, along with examples demonstrating how to format and organize paragraphs, sections, equations, algorithms, tables, figures, citations, and footnotes.

Chapter 4 Investigation: Describes the investigation, expanding upon the results and analysis from the previous study to validate the proposed approaches.

Chapter 5 Conclusion: Summarizes the major findings, discusses their implications, and suggests future research directions.

Appendix A Proofs Supporting Investigation: Presents supplementary materials, including detailed proofs, additional results, and extended discussions that support the main chapters.

Chapter 2

Background

This chapter provides a comprehensive overview of the fundamental concepts, theoretical foundations, and related work that underpin the research presented in this thesis. It serves to establish the necessary background and contextual framework for the subsequent chapters.

2.1 Fundamental Concepts

This section introduces the key concepts relevant to this study. It covers the principles, terminologies, and foundational ideas required to understand the technical contributions of the thesis.

Chapter 3

How to Use This Template

3.1 Overview

This chapter provides guidance on how to effectively use and customize the VISTEC \LaTeX thesis template. It explains the general structure, key files, recommended practices, and demonstrates common \LaTeX formatting examples such as inserting figures, tables, equations, algorithms, and citations.

3.2 Directory Structure

The template is organized into clearly separated folders and files to simplify management:

- `main.tex` — The main file to compile your thesis.
- `thesisinfo.tex` — Define your title, author information, advisor, and committee.
- `contents/` — Contains all chapter, appendix, and special section files.
- `figures/` — Store all figures, images, and plots used in the thesis.
- `tables/` — Store external table files if needed.
- `bibliography.bib` — Your BibTeX bibliography database.

3.3 Editing Thesis Metadata

Edit `thesisinfo.tex` to set your thesis title, author name, student ID, academic year, advisor, committee members, and program information. These metadata fields automatically populate the title page, approval page, and other formal sections.

3.4 Adding Content to Chapters

Each main chapter (e.g., Introduction, Background, Investigation, Conclusion) should be placed under `contents/` and included using `\include{}` in `main.tex`. You can create additional chapter files following the provided structure, and organize sections, figures, tables, algorithms, and citations inside them.

3.5 How to Use L^AT_EX

If you are new to L^AT_EX, it is recommended to start with basic tutorials to understand fundamental concepts such as document structure, commands, environments, and referencing. A good starting point is the Overleaf online guide available at:

<https://www.overleaf.com/learn>

The Overleaf Learn platform provides comprehensive, beginner-friendly resources covering topics from basic document setup to advanced formatting and bibliography management. Familiarity with these concepts will significantly improve your ability to customize and work efficiently with this thesis template.

3.6 Compiling the Thesis

Use pdfLaTeX as the compiler. A typical compilation sequence includes:

- First, run `pdflatex main.tex` to generate auxiliary files.
- Then, run `bibtex main` to generate the bibliography.
- Finally, run `pdflatex main.tex` twice to resolve cross-references.

Alternatively, tools like `latexmk` or IDEs such as Overleaf, TeXShop, and VS Code with L^AT_EX Workshop can automate this process.

3.7 Basic Formatting Examples

This section illustrates basic L^AT_EX formatting examples for headings, equations, algorithms, tables, figures, citations, and footnotes.

3.7.1 Subheadings

This subparagraph provides an example of text placed under a subsection heading. It serves to introduce and briefly describe the specific content or focus of the subsection.

3.7.1.1 Second-Level Subheading

This is a subsubparagraph under the second-level subheading. It is typically used for listing or elaborating fine-grained points.

- 1) This is the first item in the enumerated list.
- 2) This is the second item in the enumerated list.
- 3) This is the third item in the enumerated list.

3.7.2 Equations

The following is an example of formatting mathematical equations. As illustrated in Equation 3.1, the *Rényi entropy* is defined as:

$$H_{\alpha}(X) = \frac{1}{1-\alpha} \log \left(\sum_{x \in X} P[X=x]^{\alpha} \right). \quad (3.1)$$

3.7.3 Algorithms

Algorithms can be presented using the algorithmic package, as shown in Algorithm 3.1.

Algorithm 3.1 An example algorithm with a caption.

Require: $n \geq 0$

Ensure: $y = x^n$

1: $y \leftarrow 1$

2: $X \leftarrow x$

3: $N \leftarrow n$

4: **while** $N \neq 0$ **do**

5: $X \leftarrow X \times X$

6: $N \leftarrow \frac{N}{2}$

7: **end while**

► example comment

3.7.4 Tables

L^AT_EX table generators, such as TablesGenerator.com, can help you easily create well-formatted tables. See Table 3.1 for an example.

Table 3.1 Classification performance. An asterisk (*) indicates statistically significant results ($p < 0.05$).

Comparison Model	Subject-independent	
	Accuracy \pm SD	F1-score \pm SD
FBCSP-SVM	64.96 \pm 12.70	65.25 \pm 15.14
Deep Convnet	68.33 \pm 15.33	70.20 \pm 15.18
EEGNet-8,2	68.84 \pm 13.87	70.39 \pm 14.30
Spectral-Spatial CNN	68.27 \pm 13.56	65.86 \pm 17.37
MIN2Net	72.03 \pm 14.04*	72.62 \pm 14.14*

3.7.5 Figures

Figures can be included using the `graphicx` package. Example shown in Figure 3.1 and Figure 3.2.

3.7.6 Citations

To cite references, use `\cite{}`, such as [1], or multiple sources like [2–4]. Ensure that the corresponding BibTeX entries are added to the `bibliography.bib` file before citing. Below is an example BibTeX entry:

```
@ARTICLE{dummy2022example,
  author = {Doe, John and Smith, Jane and Roe, Richard},
  journal = {Journal of Example Studies},
  title = {A Dummy Title for Demonstration Purposes},
  year = {2022},
  volume = {42},
  number = {1},
  pages = {1--10}
}
```

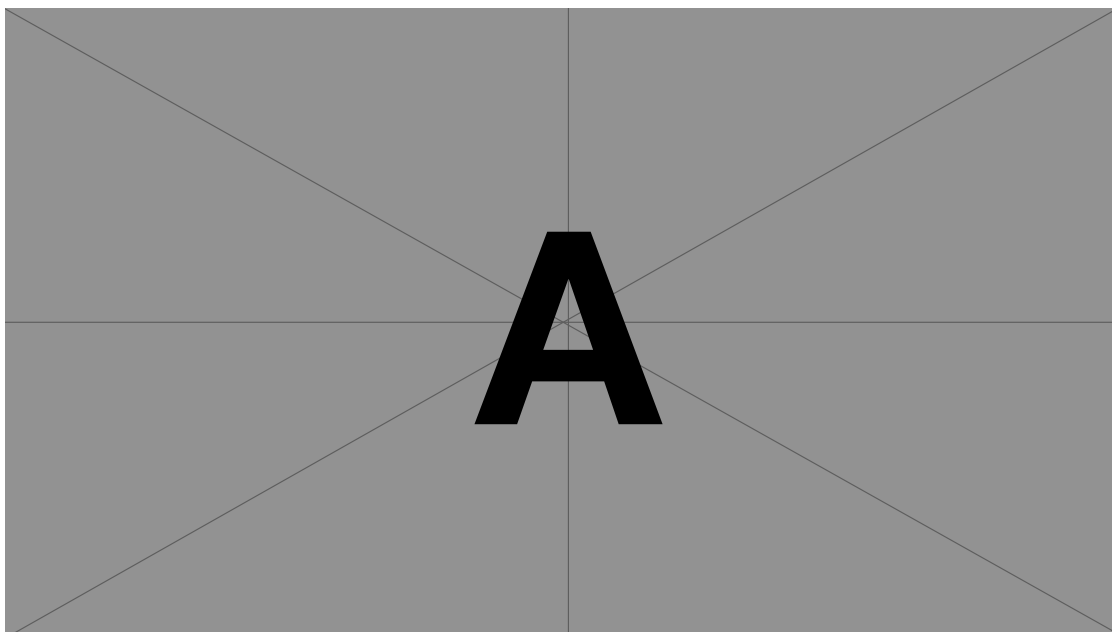



Figure 3.1 Example figure with long caption. This figure demonstrates how to include a standard image (e.g., PDF, PNG, JPG) into your document. Long captions should be aligned properly.

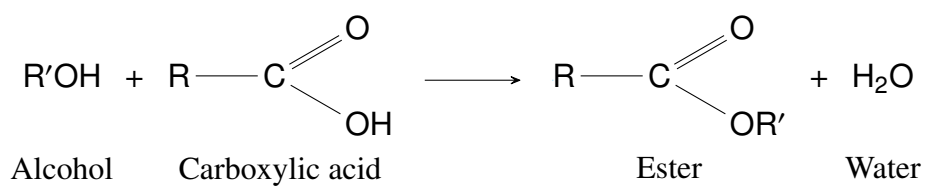


Figure 3.2 An esterification reaction illustrated using the chemfig package.

3.7.7 Footnotes

You can insert a footnote marker using `\footnotemark1` and define the text later with `\footnotetext{Example footnote.}`

¹Example footnote.

Chapter 4

Investigation

4.1 Overview of the Investigation

This section provides an overview of the investigation conducted in this study, including the research methodology, experimental setup, and analysis approach used to validate the proposed methods.

Chapter 5

Conclusion

This chapter concludes the thesis by summarizing the key findings, discussing their implications, and outlining potential future directions for research in the field.

References

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Appendix A

Proofs Supporting Investigation

A.1 Proof of Lemma

This section presents the detailed proof of the lemma introduced in Chapter 4. The proof follows standard mathematical derivation steps and verifies the correctness of the stated result.

Author's Biography

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