LaTeX THESIS TEMPLATE: AN UNOFFICIAL VERSION

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LaTeX 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 LaTeX handles hanging indents and vertical spacing, especially in custom environments such as keywords.

Keywords: LaTeX 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.

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

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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_2O	Water
DBU	1,8-Diazabicyclo [5.4.0]-7-Undecene

Chapter 1

Introduction

1.1 Motivating Problem

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 divided into three major parts:

Chapter 2: This chapter provides a comprehensive background and reviews relevant literature related to the topic.

Chapter 3: This chapter investigates the proposed methodology and its theoretical foundations.

Chapter 4: This chapter presents the experimental setup, results, and analysis.

Chapter 5: This chapter summarizes the key findings and contributions of the thesis and discusses potential directions for future work.

Appendix A: This appendix provides additional details on the experimental setup

and data analysis methods used in this thesis.

Chapter 2

Background

2.1 Heading

This is a paragraph under the main section. It introduces the overall content of the section in a general manner.

2.1.1 Sub-heading

This is a subparagraph under the first subsection. It provides additional detail or clarification related to the subsection's topic.

2.1.1.1 Second-level Sub-heading

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.

2.2 Equation

As an illustration of LaTeX's mathematics formatting, Equation 2.1 is the definition of *Rényi entropy* and Equation 2.2 is the total loss function:

$$H_\alpha(X) = \frac{1}{1-\alpha} \log \left(\sum_{x \in \mathcal{X}} P[X = x]^\alpha \right). \tag{2.1}$$

$$\mathcal{L}_{\text{total}} = \frac{1}{N}\sum_{i=1}^{N}\{w_i\mathcal{L}_i\}. \tag{2.2}$$

2.3 Algorithm

This is an example of Algorithm 2.1.

Algorithm 2.1 An algorithm with caption.

Require: $n \geq 0$
Ensure: $y = x^n$
$y \leftarrow 1$
$X \leftarrow x$
$N \leftarrow n$
while $N \neq 0$ **do**
    if N is even **then**
        $X \leftarrow X \times X$
        $N \leftarrow \frac{N}{2}$ ▷ This is a comment
    else if N is odd **then**
        $y \leftarrow y \times X$
        $N \leftarrow N - 1$
    end if
end while

2.4 Table

LaTeX table generators, such as TablesGenerator.com[1], can help you easily create well-formatted tables. Here, Table 2.1 is an example of a table generated using the tool.

Table 2.1 Classification performance. An asterisk (*) indicates values that are significantly different from the others ($p < 0.05$).

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

[1] https://www.tablesgenerator.com/

2.5 Figure

Here are examples of figures in a thesis: Figure 2.1 illustrates a standard image inclusion, while Figure 2.2 shows a chemical reaction diagram generated with `chemfig`.

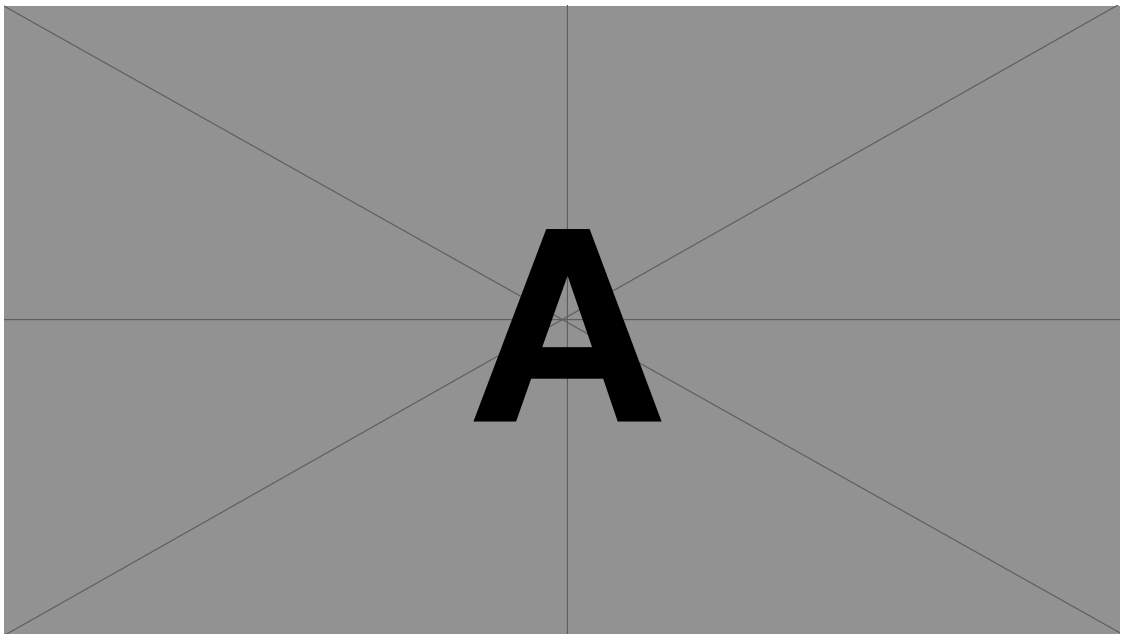

Figure 2.1 This is a long figure caption example for an image. This figure demonstrates how to include a standard image (e.g., PDF, PNG, JPG) into your document. Captions longer than one line should be aligned left and indented after the first line.

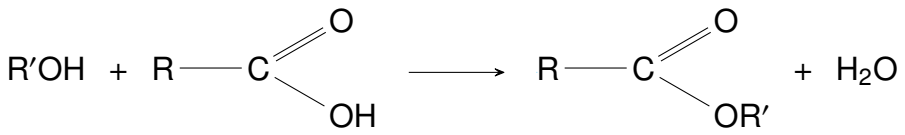

Figure 2.2 An esterification reaction illustrated using the `chemfig` package.

2.6 Citation

This is an example of how to cite previous work, 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}
}
```

2.7 Footnote

I'm writing to test the `\footnotemark` and `\footnotetext` commands. You can insert a footnote marker using the `\footnotemark`[2] command and later typeset the footnote text by writing `\footnotetext{Example footnote.}`.

Let's do one more to see the result[3], which I'll comment on within the footnote.

[2] Example footnote.

[3] Specifically, I'd write comments in this one.

Chapter 3

Investigation 1

3.1 Section 1

This section presents an overview of the initial investigation conducted in this study.

Chapter 4

Investigation 2

4.1 Section 1

This section presents the second investigation carried out in this study.

Chapter 5

Conclusion

This chapter concludes the thesis by summarizing the key findings, discussing their implications, and outlining potential future directions for research in brain-computer interfaces and assistive technologies.

References

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3. Author F, Author B, and Baz A. Simulated Study on EEG Activity in Hypothetical Conditions. **Journal of Experimental Interfaces** 2020;55(8):8888–99.
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Appendix A

Proofs for Chapter 3

A.1 Proof of Lemma

This section provides the detailed proof of the lemma stated in Chapter 3. The proof follows standard steps in mathematical derivation and demonstrates the validity of the stated result.

Author's Biography

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	Author O, Author B, and Author G. Sample Article on Deep Learning for EEG. **Journal of Artificial Neuroscience** 2017;12(4):321–40.
	Author R, Author O, and Author B. **A Sample Conference Paper on Face Recognition**. In: Proceedings of the International Conference on Vision Research. 2015:101–10.