

Triggering the Forth Impact

by

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A Thesis Submitted to
The Hong Kong University of Science and Technology
in Partial Fulfilment of the Requirements for
the Degree of Doctor of Philosophy
in Human Instrumentality

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Triggering the Forth Impact

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Department of NERV

The Hong Kong University of Science and Technology

Abstract

Some text.

Authorization

I hereby declare that I am the sole author of the thesis.

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I further authorize the Hong Kong University of Science and Technology to reproduce the thesis by photocopying or by other means, in total or in part, at the request of other institutions or individuals for the purpose of scholarly research.

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13 August 2021

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This is to certify that I have examined the above PhD thesis
and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by
the thesis examination committee have been made.

Prof. Adams, Thesis Supervisor

Prof. Lilith, Thesis Co-supervisor

Prof. Ikari Yui, Head of Department

Department of NERV

13 August 2021

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Thank you, all the Evangelion.

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LIST OF ALGORITHMS

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CHAPTER 1

INTRODUCTION

Please read the latest version of the documentation for this thesis template.

CHAPTER 2

EXAMPLE CHAPTER

2.1 Background

2.1.1 Cross references

You can use `\cref{}` to automatically setup the cross reference name; instead, you can always use `\ref{}` to customize the appearance of the cross reference.

Chapter 1 tells you to read the latest PDF documentation.

Chapter 3 is a conclusion.

2.1.2 Citation and bibliography

Use `biber` as `BIBTEX` backend.

Cite a book[1], some papers[2, 3], and a conference[4].

Citation database

Bibliography entries (database) are stored in `mythesis.bib`. You can use Zotero (or similar software) to generate `another.bib` file. You can add multiple database files by adding their filenames one-by-one in the following commands in `mythesis.tex`:

```
1 \addbibresource{mythesis.bib}
2 \addbibresource{another.bib}
```

Citation style

As described in the sample page from ECE department, the style is set to `ieee` by default. You can modify the style in the `hkustthesis.cls` file as you wish.

2.2 Math

2.2.1 Symbols

- Calligraphic letters: $\mathcal{A}$
- Mathbb letters: $\mathbb{A}$
- Mathfrak letters: $\mathfrak{A}$
- Math Sans serif letters: A
- Math bold letters: $\mathbf{A}$
- Math bold upright Greek letters: (Not displaying! Use the following one.)
- Math bold upright Greek letters: $\boldsymbol{\alpha}$
- Math bold italic Greek letters¹: $\boldsymbol{\alpha}$
- Math bold italic Greek letters in upper case: $\boldsymbol{A}$

2.2.2 Equations

$$E^2 = m^2 + p^2 \tag{2.1}$$

Equation (2.1) or Equation (2.1) gives the mass-energy relationship.

2.2.3 Theorem

Definition 1 LCL is orange juice.

Proof. They are both orange. □

Algorithm 1 Temp

1: Temp

Available theorem environments are listed below:

algorithm, assumption, axiom, conclusion, condition, corollary, definition, example, lemma, proof, property, proposition, remark, theorem.

¹Avoid using `bm` package as it conflicts with `unicode-math` and it is outdated for $\text{\LaTeX}$. You can alias some math commands by `\newcommand` or `\renewcommand` anyway.

2.3 Figure

An example image is shown in Figure (2.2) or Figure (2.2).



Figure 2.1: An example tikz picture with a short caption.

[illegible]

2.4 Table

An example table is shown in Table (2.2) or Table (2.2).

Table 2.1: A table with a short caption.

OS	TeX environment	Test
Overleaf	T _E X Live 2021~4	Pass
Windows 10	T _E X Live 2020	l_txhook problem
Ubuntu 20.04	T _E X Live 2021	Pass

[illegible]

OS	TeX environment	Test
Overleaf	T _E X Live 2021~4	Pass
Arch Linux (2024.10)	T _E X Live	Pass
Windows 10/11	T _E X Live 2021	Pass
macOS 10.15	T _E X Live 2021	Pass
Windows 10	T _E X Live 2020	l _t xhook problem
Ubuntu 20.04	T _E X Live 2021	Pass
Termux	T _E X Live 2021	Pass
Windows 11	MiK _T E _X 4.9	Pass
Windows 10	MiK _T E _X 4.4	Pass

2.5 Code

2.5.1 Inline code

Use `\lstinline|<code>|` to print code snippets. The `|` marks delimit the code and can be replaced by any character not in the code; *e.g.*, `\lstinline$<code>$` gives the same result.

2.5.2 Code environment

The code to draw the Figure (2.2) is listed below:

Listing 2.1: L^AT_EX code for inserting a figure

```
1 \begin{figure}[htb]
2   \begin{tikzpicture}
3     \draw (0,0) -- (1, 0) -- (1, 1) -- cycle;
4   \end{tikzpicture}
5   \caption{An example picture with long caption: \blindtext
6     \\\blindtext}
7   \label{fig:tikz example} % this is a comment
7 \end{figure}
```

CHAPTER 3

CONCLUSIONS

Some conclusion text.

REFERENCES

- [1] Frank Mittelbach *et al.*, *The LaTeX Companion*. Reading, Massachusetts: Addison-Wesley, 1993 (cit. on p. 2).
- [2] S. Keshav, “How to read a paper,” *ACM SIGCOMM Computer Communication Review*, vol. 37, no. 3, pp. 83–84, 2007. doi: 10.1145/1273445.1273458 (cit. on p. 2).
- [3] G. M. Whitesides, “Whitesides’ Group: Writing a Paper,” *Advanced Materials*, vol. 16, no. 15, pp. 1375–1377, 2004. doi: 10.1002/adma.200400767 (cit. on p. 2).
- [4] Sachin Babu *et al.*, “Plasma-Treated PDMS as Intrinsically Non-Wetting Surface for Gallium-Alloy Liquid Metal Microfluidics,” in *2020 IEEE 33rd International Conference on Micro Electro Mechanical Systems (MEMS)*, 2020, pp. 1122–1125. doi: 10.1109 / MEMS46641 . 2020 . 9056134 (cit. on p. 2).

APPENDIX A

LIST OF PUBLICATIONS

Journal Publications

- [1] Yang Chai, Xiaodong Chen, Hong Jin Fan, Shu Ping Lau, Shuzhou Li, Bin Liu, Wai-Yeung Wong, Ni Zhao, and Zijian Zheng, “Beyond Metrics,” *ACS Nano*, vol. 16, no. 8, pp. 11 485–11 486, 2022. doi: 10.1021/acsnano.2c07662.
- [2] **Yang Chai**, Xiaodong Chen, Hong Jin Fan, Shu Ping Lau, Shuzhou Li, Bin Liu, Wai-Yeung Wong, Ni Zhao, and Zijian Zheng, “Beyond Metrics,” *ACS Nano*, vol. 16, no. 8, pp. 11 485–11 486, 2022. doi: 10.1021/acsnano.2c07662.

Conference Publications

- [1] Jinsheng Lu, Jinsheng Lu, Shaoliang Yu, Vincent Ginis, Vincent Ginis, Simon Kheifets, Soon Wei Daniel Lim, Min Qiu, Tian Gu, Juejun Hu, Juejun Hu, and Federico Capasso, “On-Chip Optical Tweezers Based on Micro-Reflectors,” in *Conference on Lasers and Electro-Optics (2021), Paper SW3B.1*, Optica Publishing Group, 2021, SW3B.1. doi: 10.1364/CLEO_SI.2021.SW3B.1.
- [2] Achim Jehle and Steffen Diez, “Spatial Light Modulators in Laser Lithography Systems,” in *Imaging and Applied Optics 2016 (2016), Paper IM4F.2*, Optica Publishing Group, 2016, IM4F.2. doi: 10.1364/ISA.2016.IM4F.2.

APPENDIX B

FYTGS REQUIREMENTS

The requirements are from the RPG Handbook.

B.1 Components

B.1.1 Order

A thesis should contain the following parts in the order shown:

1. Title page, containing in this order:
 - a. Thesis title
 - b. Full name of the candidate
 - c. Degree for which the thesis is submitted
 - d. Name of the University, *i.e.* The Hong Kong University of Science and Technology
 - e. Month and year of submission
2. Abstract (≤ 300 words.)
3. Authorization page
4. Signature page
5. Acknowledgments
6. Table of contents
7. Lists of figures and tables
8. Thesis body
9. Bibliography
10. Appendices and other addenda, if any.

B.1.2 Abstract

Every copy of the thesis must have an English abstract, being a concise summary of the thesis, in 300 words or less.

B.1.3 Authorization page

On this page, students authorize the University to lend or reproduce the thesis.

1. The copyright of the thesis as a literary work vests in its author (the student).
2. The authorization gives HKUST Library a non-exclusive right to make it available for scholarly research.

B.1.4 Signature page

This page provides signatures of the thesis supervisor(s) and Department Head confirming that the thesis is satisfactory.

B.1.5 Acknowledgments

The student is required to declare, in this section, the extent to which assistance has been given by his/her faculty and staff, fellow students, external bodies or others in the collection of materials and data, the design and construction of apparatus, the performance of experiments, the analysis of data, and the preparation of the thesis (including editorial help). In addition, it is appropriate to recognize the supervision and advice given by the thesis supervisor(s) and members of TSC.

B.1.6 Bibliography

The list of sources and references used should be presented in a standard format appropriate to the discipline; formatting should be consistent throughout.

B.1.7 Sample pages

Sample pages of both MPhil and PhD theses are provided here (MPhil / PhD), with specific instructions for formatting page content (centering, spacing, etc.).

B.2 Language, Style and Format

B.2.1 Language

Theses should be written in English.

Students in the School of Humanities and Social Science who are pursuing research work in the areas of Chinese Studies, and who can demonstrate a need to use Chinese to write their

theses should seek prior approval from the School via their thesis supervisor and the divisional head.

If approval is granted, students are also required to produce a translation of the title page, authorization page, signature page, table of contents and the abstract in English.

B.2.2 Pagination

1. All pages, starting with the Title page should be numbered.
2. All page numbers should be centered, at the bottom of each page.
3. Page numbers of materials preceding the body of the text should be in small Roman numerals.
4. Page numbers of the text, beginning with the first page of the first chapter and continuing through the bibliography, including any pages with tables, maps, figures, photographs, etc., and any subsequent appendices, should be in Arabic numerals.
5. Start a new page after each chapter or section but not after a sub-section.

Note: That means the Title page will be page i; the first page of the first chapter will be page 1.

B.2.3 Format

1. A conventional font, size 12-point, 10 to 12 characters per inch must be used.
2. One-and-a-half line spacing should be used throughout the thesis, except for abstracts, indented quotations or footnotes where single line spacing may be used.
3. All margins—top, bottom, sides—should be consistently 25mm (or no more than 30mm) in width. The same margin should be used throughout a thesis. Exceptionally, margins of a different size may be used when the nature of the thesis requires it.

B.2.4 Footnotes

1. Footnotes may be placed at the bottom of the page, at the end of each chapter or after the end of the thesis body.
2. Like references, footnotes should be presented in a standard format appropriate to the discipline.
3. Both the position and format of footnotes should be consistent throughout the thesis.

B.2.5 Appendices

The format of each appended item should be consistent with the nature of that item, whether text, diagram, figure, etc., and should follow the guidelines for that item as listed here.

B.2.6 Figures, Tables and Illustrations

Figures, tables, graphs, etc., should be placed as close as possible to the text they illustrate. Charts, graphs, maps, and tables that are larger than a standard page should be provided as appendices.

B.2.7 Photographs/Images

1. High contrast photos should be used because they reproduce well. Photographs with a glossy finish and those with dark backgrounds should be avoided.
2. Images should be dense enough to provide 300 ppi for printing and 72 dpi for viewing.

B.2.8 Additional Materials

Raw files, datasets, media files, and high resolution photographs/images of any format can be included.

Note: Students should get approval from their department head before deviating from any of the above requirements concerning paper size, font, margins, etc.