Master's Thesis

Title of Thesis

Gildong Hong

Department of OOO

Graduate School

Korea University

February 2023

Doctoral Dissertation

Title of Dissertation

Gildong Hong

Department of OOO

Graduate School

Korea University

February 2023

Title of Thesis

by

Gildong Hong

student signiture
_____

under the supervision of Professor Chulsu Kim

A thesis submitted in partial fulfillment of
the requirements for the degree of
Master of Arts (Science, etc.) (in Major)

Department of OOO

Graduate School

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February 2023

Title of Dissertation

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A dissertation submitted in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy (in Major)

Department of OOO

Graduate School

Korea University

February 2023

The thesis of Gildong Hong has been approved
by the thesis committee in partial fulfillment
of the requirements for the degree of
Master of Arts (Science) (in Major)

December 2022

_____

Committee Chair: Chulsu Kim

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Committee Member: Name

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The dissertation of Gildong Hong has been approved
by the dissertation committee in partial fulfillment
of the requirements for the degree of
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by Gildong Hong

Department of OOOO

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ABSTRACT

The text of the abstract begins here.

Keywords : Keyword, Keyword, Keyword, Keyword, Keyword, Keyword

국문 제목

by 홍길동
OO 학과
지도교수 : 김철수

국문 초록

The Korean abstract should follow the English abstract. 영어 논문의 경우에도 한글 초록이 작성되어야 합니다.

중심어 : 중심어, 중심어, 중심어, 중심어, 중심어, 중심어

Preface

The text of the preface begins here.

Acknowledgement

The text of the acknowledgements begins here.

Contents

List of Tables

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Nomenclature (or list of symbols)

M	original mass matrix
K	original stiffness matrix

Subscripts

b	interface boundary
d	dominant

Abbreviation

CMS	Component Mode Synthesis

Chapter 1. Introduction

The following formatting information is intended to illustrate several acceptable ways of preparing a thesis or dissertation for your convenience. The first paragraph of every chapter, section or subsection is, by default, set to be nonindented.

The first level heading is styled using chapter. Chapter 1 is styled with `\chapter{Introduction}`. You can put `\label{chap:intro}` to refer to this chapter.

1.1 Second Level Heading

The second level subheading is styled using section. Section **??** is styled with `\section{Second Level Heading}`. Sections will appear in the Table of Contents, automatically.

1.1.1 Third Level Heading

The above third level subheading is styled using subsection. Subsection **??** is styled with `\subsection{Third Level Heading}`. Subsections will appear in the Table of Contents, automatically.

For more information about headings, refer to `https://www.overleaf.com/learn/latex/Headers_and_footers`

1.2 Referencing headings

Suppose that you want to refer to the first section. The first section (of the first chapter) was labeled with `\label{sec:section}`. You can refer to the section by typing `\ref{sec:section}` : Section **??**

Suppose that you want to refer to the first subsection. The first subsection (of the first section of the first chapter) was labeled with `\label{subs:subsection}`. You can refer to the subsection by typing `\ref{subs:subsection}` : Subsection **??**

For more information about labeling and referencing, refer to the followings

- `https://en.wikibooks.org/wiki/LaTeX/Labels_and_Cross-referencing`

- `https://www.overleaf.com/learn/latex/Cross_referencing_sections%2C_equations_and_floats`

Chapter 2. Organizing and Formatting

2.1 Paper Size and Margins

The paper size of the thesis/dissertation shall be B5. For the first three preliminary pages (including the cover page, title page and signature page) before the abstract, all margins (top, bottom, left and right) shall be at least 3 cm. From the abstract on, the top and bottom margins shall be at least 3cm and the left and right margins shall be at least 2 cm (Table **??**).

Order	Note	Margin	Pagination
Cover page		top, bottom, left & right at least 3 cm	None
Blank page			
Title page			
Signature page			
Abstract	both English & Korean		
Dedication page	optional	top & bottom at least 3cm left & right at least 2 cm	i, ii, iii, iv, ···
Preface	if necessary		
Acknowledgements	optional		
Table of contents			
List of tables	if there are tables or		
List of figures	figures in the main body		
Nomenclature	optiona		
Blank page			None
Main body			
Reference			1, 2, 3, 4, ···
Appendices	optional		
index	optional		

Table 2.1: Organizing and formatting thesis/dissertation

The paper size and margins are governed by the geometry package. For more information, refer to the followings

- `http://mirrors.ctan.org/macros/latex/contrib/geometry/geometry.pdf`

- `https://www.overleaf.com/learn/latex/Page_size_and_margins`

2.2   Fonts and Size

The default font size is set to 11pt. In LaTeXyou can use commands like `\normalsize`, `\large`, `\Large`, `\LARGE`, `\huge`, and so on, to specify the size of the font. We relate the above commands to 11pt, 14pt, 16pt, 18pt and 21pt, respectly, of the MS word templete. Thus, there are slight differences of font size in MS word templete and in LaTeXtemplete. The below (Table **??**) is the comparison table for the font size. [1]

	Size Requirements	LaTeXStyle
Thesis title	21	`\huge`
The school name (Graduate School, Korea University)	18	`\LARGE`
All other parts are 16 points (department, name, advisor, master's thesis, ⋯, submitted, ⋯ completed, etc.)	16	`\Large`
Year, month and day	14	`\large`
Main Text	10–12	`\normalsize`
Heading	None	
Figure caption	None	
Table caption	None	

Table 2.2: Requirement for font size and the style used in this manuscript

Here is how we put tables and footnote in LaTeX. To make a table, use the environment `tabular` and specify the columns. The above table has three center-aligned columns ;

`\begin{tabular}{ccc} ... \end{tabular}`

You can also use advanced version of `tabular`, which are `taubularx`, `tabulary`, `tabu`, `multirow` or `booktabs` to manipulate the typeset of tables.

It is desirable to put the `tabular` environment inside the `table` environment. You can add caption of the table by `\caption{...}`. The labeling `\label{...}` for future reference should be followed just after the caption. All the tables in the `table` environment will be included in the 'List of Tables'.

For more information about tables, refer to `https://www.overleaf.com/learn/latex/Tables`

2.3   Figures and Equations

To include a figure file in the document, you can use `includegraphics` command, which require `graphicx` package.

`\includegraphics[width=.2\textwidth]{kumark.png}`

You can specify the width or the height of the figure inside the square brackets and the file name (with or without the extension) inside the braces.

---

[1]`https://tug.org/texinfohtml/latex2e.html#Font-sizes`

It is desirable to put the `includegraphics` command inside the `figure` environment. Again, the labeling need to be followed just after the caption. All the tables in the `figure` environment will be included in the 'List of Figures'.

Figure 2.1: Korea University Global Symbol

For more information about figures, refer to the followings

- `https://www.overleaf.com/learn/latex/Inserting_Images`

- `https://www.overleaf.com/learn/latex/How_to_Write_a_Thesis_in_LaTeX_(Part_3)%3A_Figures%2C_Subfigures_and_Tables`

You can type an equation with inline math mode like $E = mc^2$. Or you can type

$$E = mc^2$$

to express the equation in display math mode. The above equation is an unnumbered. To number the equation automatically, you can use `equation` environment;

$$E = mc^2 \tag{2.1}$$

The number or the tag of the above equation reads 'the first equation of the chapter **??**'. If you add one more equation, you can get the second eqaution of the chapter **??**.

$$e^{i\theta} = \cos\theta + i\sin\theta. \tag{2.2}$$

You can also specify the tagging explicitly, using `\tag{...}`

$$E = mc^2 \tag{$*$}$$

To express a list of equations, you can use the `gather` environment, which just enumerate equations vertically. For example, suppose that you want to express a system of linear equations $x+y+z = 3$, $x-y+2z = 1$, $x+3z = 2$. Using `gather` environment, you get

$$x + y + z = 3 \tag{2.3}$$
$$x - y + 2z = 1 \tag{2.4}$$
$$x + 3z = 2. \tag{2.5}$$

If you want to unnumber the equations, use `gather*` environment;

$$x + y + z = 3$$
$$x - y + 2z = 1$$
$$x + 3z = 2.$$

Note that the above system is not well aligned. To align the equations horizontally, with respect to the equality sign, you can use `align` (or `align*`) environment

$$x + y + z = 3$$
$$x - y + 2z = 1$$
$$x + 3z = 2.$$

`align` environment tags every equation of the system

$$x + y + z = 3 \tag{2.6}$$
$$x - y + 2z = 1 \tag{2.7}$$
$$x + 3z = 2. \tag{2.8}$$

If you want one tagging for the system, you can use the `aligned` environment and the `equation` environment, simultaneously ;

$$x + y + z = 3$$
$$x - y + 2z = 1 \tag{2.9}$$
$$x + 3z = 2.$$

Finally, you can label and refer an equation, by `\label{...}` and `\eqref{...}`. For example, you can say that 'The root of (**??**) is $x = 2$, $y = 1$, $z = 0$'.

$\quad$ `gather` and `align` are the environments provided by the `amsmath` package. For more information to typeset the equation neatly, refer to `http://www.ams.org/arc/tex/amsmath/amsldoc.pdf`.

2.4 Quotation

If you want to cite from the bibliography, you can type, for example, `\cite{LSTM}` where LSTM is the name of the reference : [**?**]. Or you can cite the other reference here like this ; [**?**].

$\quad$ For direct quotation, you can use either the `quote` environment or the `quotation` environment.

> "Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning."
> the universe."
>
> — Albert Einstein

> $\quad$ "Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning." the universe."
> $\quad$ — Albert Einstein

Chapter 3.   Discussion

Discussion starts here.

If you want to make definitions and theorems in the paper, use the predefined (in the preamble) environments `definition` and `theorem` which are supported by the `amsthm` package.

You can either specify the name of the definition

Definition 1 (Right Triangles). *A right triangle is a triangle in which one angle is a right angle.*

or not (don't specify the name of the definition)

Definition 2. *A right triangle is a triangle in which one angle is a right angle.*

Here are examples of theorems ;

Theorem 1 (Pythagorean theorem). *Consider a right triangle where c is the length of the hypotenuse, and a and b are the lengths of the remaining two sides. Then*

$$a^2 + b^2 = c^2 \tag{3.1}$$

Theorem 2. *Consider a right triangle where c is the length of the hypotenuse, and a and b are the lengths of the remaining two sides. Then*

$$a^2 + b^2 = c^2 \tag{3.2}$$

For later use, we put indexings for a right traingle and the Pythagorean theorem here.

Sometimes you need to special font for mathematical use. For example, you may need symbols like $\mathbb{R}$, $\mathcal{T}$, $\mathscr{A}$ or $\mathfrak{M}$. Some symbols are typeseted without declaring any packages, while others need packages like amssymb or mathrsfs. For more information about typsetting mathematical expressions, refer to the followings ;

- https://www.overleaf.com/learn/latex/Mathematical_expressions

- https://www.overleaf.com/learn/latex/Subscripts_and_superscripts

- https://www.overleaf.com/learn/latex/Brackets_and_Parentheses

- https://www.overleaf.com/learn/latex/Matrices

- https://www.overleaf.com/learn/latex/Integrals\%2C_sums_and_limits

- https://www.overleaf.com/learn/latex/Display_style_in_math_mode

- https://www.overleaf.com/learn/latex/Mathematical_fonts

Chapter 4.   Conclusion

Conclusion starts here.

Reference(or Bibliography)

[1] Hochreiter, Sepp, and Jürgen Schmidhuber. "Long short-term memory." Neural computation 9.8 (1997): 1735-1780.

[2] Hardy, Godfrey Harold. Course of pure mathematics. Courier Dover Publications, 2018.

Appendix A. The first appendix

A text for appendix 1 starts here.

Appendix B.   The second appendix

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