Very important thesis title

Less important thesis subtitle

by

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at

GOETHE UNIVERSITY FRANKFURT

Abstract

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Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Contents

1 Introduction

This is a minimal, modern template for writing your Bachelor, Master, or PhD thesis. It is based on `latex-mimosis`, which in turn is based on the style advice given by people such as Robert Bringhurst [1] or Edward R. Tufte [2, 3].

1.1 How?

You can use LaTeX, XƎLaTeX, or LuaLaTeX. If in doubt, prefer LuaLaTeX, which is the most modern. By default, this document uses the following font settings:

```
\setmainfont{EB Garamond}
\setmonofont[Scale=MatchLowercase]{Source Code Pro}
```

Make sure that you install these fonts, so that the document can be rendered properly. The default is good, but you are free to change the font.

1.2 Features

The template automatically imports numerous convenience packages that aid in your typesetting process. Table 1.1 lists the most important ones. Let's briefly discuss some examples below. Please refer to the source code for more demonstrations.

1.2.1 Typesetting mathematics

This template uses `amsmath` and `amssymb`, which are the de-facto standard for typesetting mathematics. Use numbered equations using the `equation` environment. If you want to show multiple equations and align them, use the `align` environment:

$$V := \{1, 2, \dots\} \tag{1.1}$$

$$E := \left\{(u, v) \mid \mathrm{dist}\left(p_u, p_v\right) \le \varepsilon\right\} \tag{1.2}$$

Define new mathematical operators using `\DeclareMathOperator`. Some operators are already pre-defined by the template, such as the distance between two objects. Please see the template for

Package	Purpose
`amsmath`	Basic mathematical typography
`amsthm`	Basic mathematical environments for proofs etc.
`babel`	Language settings
`booktabs`	Typographically light rules for tables
`bookmarks`	Bookmarks in the resulting PDF
`csquotes`	Language-specific quotation marks
`dsfont`	Double-stroke font for mathematical concepts
`graphicx`	Graphics
`hyperref`	Hyperlinks
`multirow`	Permits table content to span multiple rows or columns
`paralist`	Paragraph ('in-line') lists and compact enumerations
`scrlayer-scrpage`	Page headings
`setspace`	Line spacing
`siunitx`	Proper typesetting of units
`subcaption`	Proper sub-captions for figures

Table 1.1: A list of the most relevant packages required (and automatically imported) by this template.

some examples. Moreover, this template contains a correct differential operator. Use `\diff` to typeset the differential of integrals:

$$f(u) := \int_{v \in \mathbb{D}} \operatorname{dist}(u, v) \, \mathrm{d}v \tag{1.3}$$

You can see that, as a courtesy towards most mathematicians, this template gives you the possibility to refer to the real numbers $\mathbb{R}$ and the domain $\mathbb{D}$ of some function. Take a look at the source for more examples. By the way, the template comes with spacing fixes for the automated placement of brackets.

1.2.2 TYPESETTING TEXT

Along with the standard environments, this template offers `paralist` for lists within paragraphs. Here's a quick example: The American constitution speaks, among others, of (i) life (ii) liberty (iii) the pursuit of happiness. These should be added in equal measure to your own conduct. To typeset units correctly, use the `siunitx` package. For example, you might want to restrict your daily intake of liberty to 750 mg.

Likewise, as a small pet peeve of the `latex-mimosis` author, the package offers specific operators for *ordinals*. Use `\th` to typeset things like July 4$^{\text{th}}$ correctly. Or, if you are referring to the

2nd edition of a book, please use `\nd`. Likewise, if you came in 3rd in a marathon, use `\rd`. This is my 1st rule.

If you want to write a text in German and use German hyphenation rules, set the language of your text to german using `\selectlanguage{ngerman}`, or add

`\PassOptionsToPackage{spanish}{babel}`

before the `\documentclass` command to load a specific language. The languages `ngerman`, `french`, and `english` are loaded by default, with `english` being selected.

Quotation marks can be typeset using the `\enquote{...}` command from the `csquotes` package, which is preloaded by `latex-mimosis`. Depending on the currently selected language, quotes will look like "this", „this", or « this ». One must never use "ASCII" quotation marks or even 'apostrophe' symbols.

1.3 CHANGING THINGS

Since this class heavily relies on the `scrbook` class, you can use *their* styling commands in order to change the look of things. For example, if you want to change the text in sections to **bold** you can just use

`\setkomafont{sectioning}{\normalfont\bfseries}`

at the end of the document preamble—you don't have to modify the class file for this. Please consult the source code for more information.

Acronyms

PCA   Principal component analysis

SNF   Smith normal form

TDA   Topological data analysis

Glossary

LaTeX   A document preparation system

$\mathbb{R}$ The set of real numbers

Bibliography

[1] Robert Bringhurst. *The Elements of Typographic Style*. Hartley & Marks Publishers, Vancouver, British Columbia, Canada, 4 edition, 2012.

[2] Edward R. Tufte. *Envisioning information*. Graphics Press, Cheshire, CT, USA, 1990.

[3] Edward R. Tufte. *The visual display of quantitative information*. Graphics Press, Cheshire, CT, USA, 2 edition, 2001.