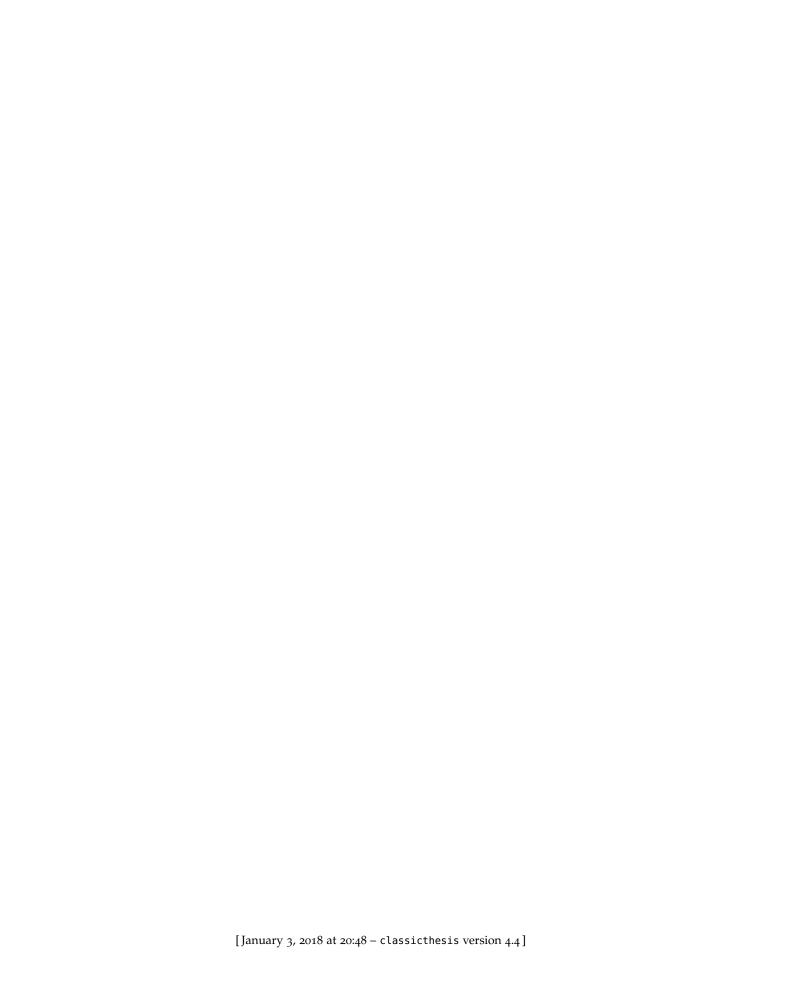
ANDRÉ MIEDE A CLASSIC THESIS STYLE



A CLASSIC THESIS STYLE

ANDRÉ MIEDE



An Homage to The Elements of Typographic Style
October 2017 – version 4.4

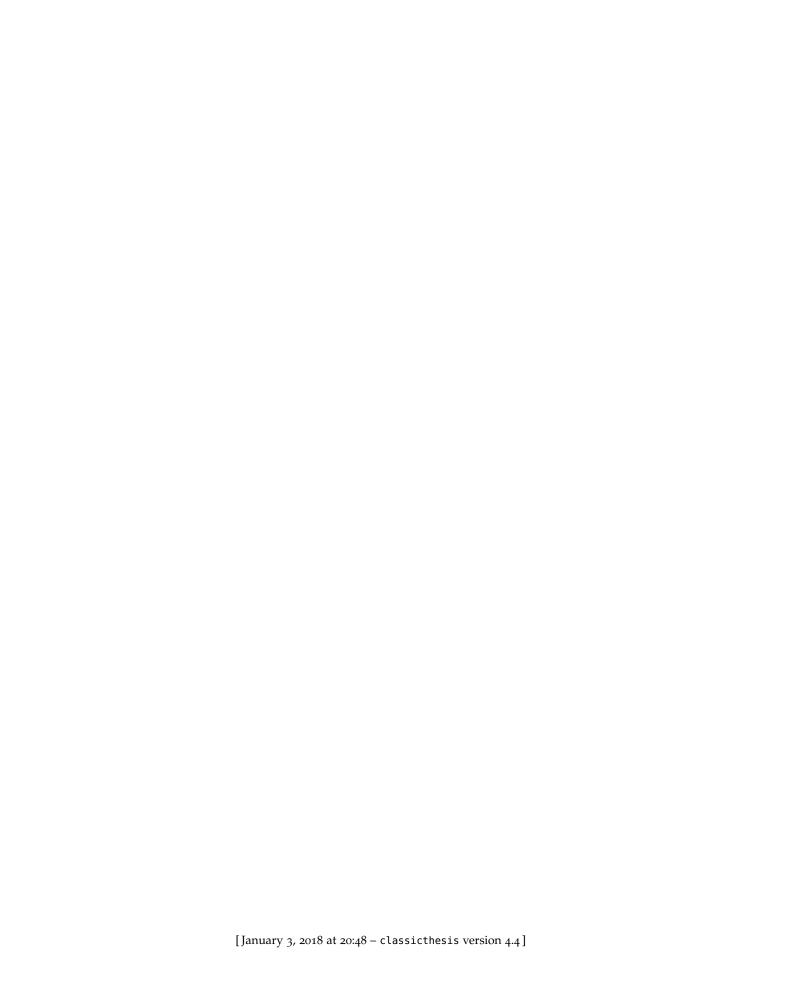


Ohana means family. Family means nobody gets left behind, or forgotten.

— Lilo & Stitch

Dedicated to the loving memory of Rudolf Miede.

1939 – 2005



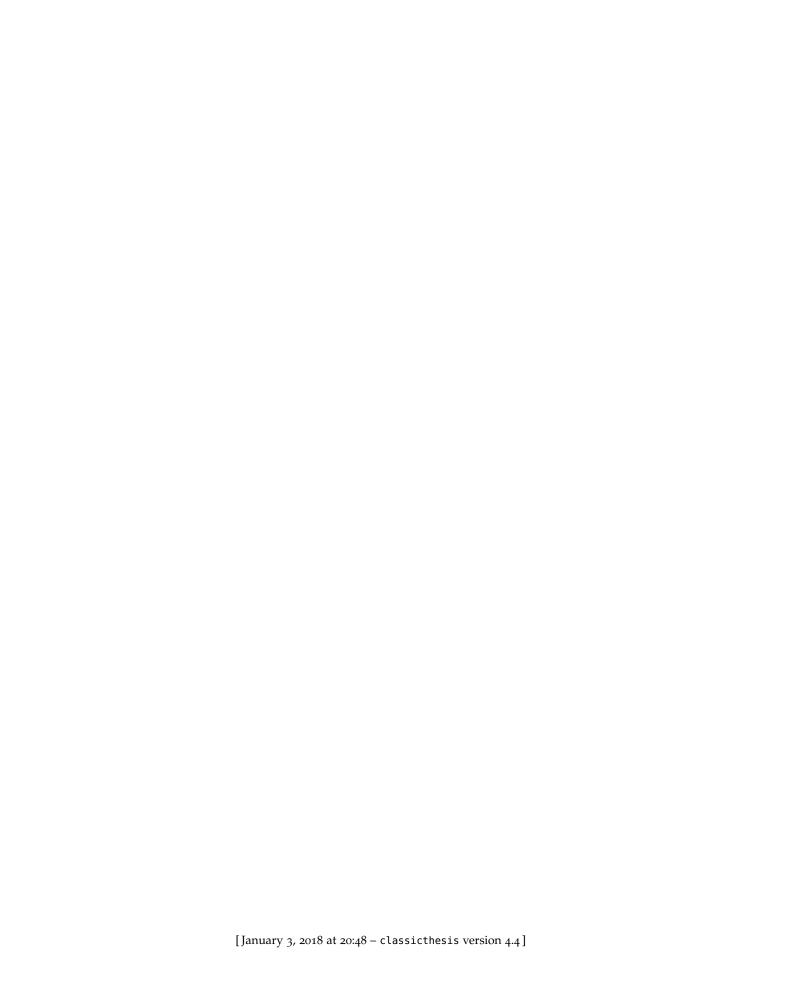
ABSTRACT

Short summary of the contents in English...a great guide by Kent Beck how to write good abstracts can be found here:

https://plg.uwaterloo.ca/~migod/research/beck00PSLA.html

ZUSAMMENFASSUNG

Kurze Zusammenfassung des Inhaltes in deutscher Sprache...

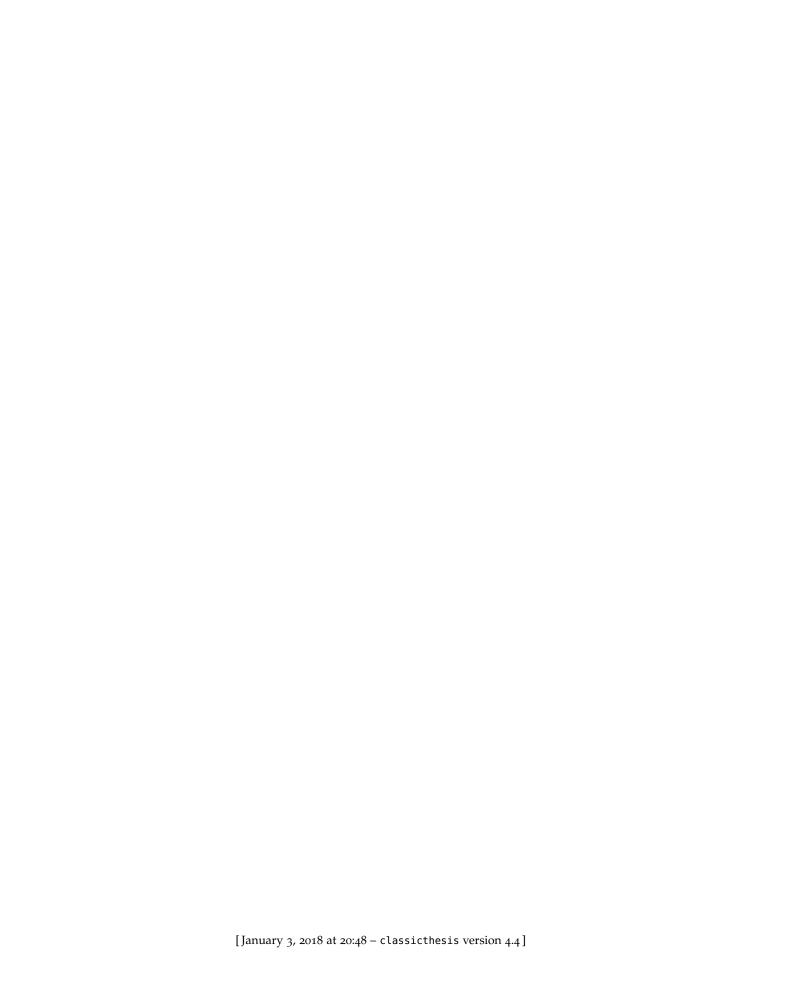


PUBLICATIONS

This might come in handy for PhD theses: some ideas and figures have appeared previously in the following publications:

Attention: This requires a separate run of bibtex for your refsection, e.g., ClassicThesis1-blx for this file. You might also use biber as the backend for biblatex. See also http://tex.stackexchange.com/questions/128196/problem-with-refsection.

This is just an early
– and currently
ugly – test!



We have seen that computer programming is an art, because it applies accumulated knowledge to the world, because it requires skill and ingenuity, and especially because it produces objects of beauty.

— knuth:1974 [knuth:1974]

ACKNOWLEDGMENTS

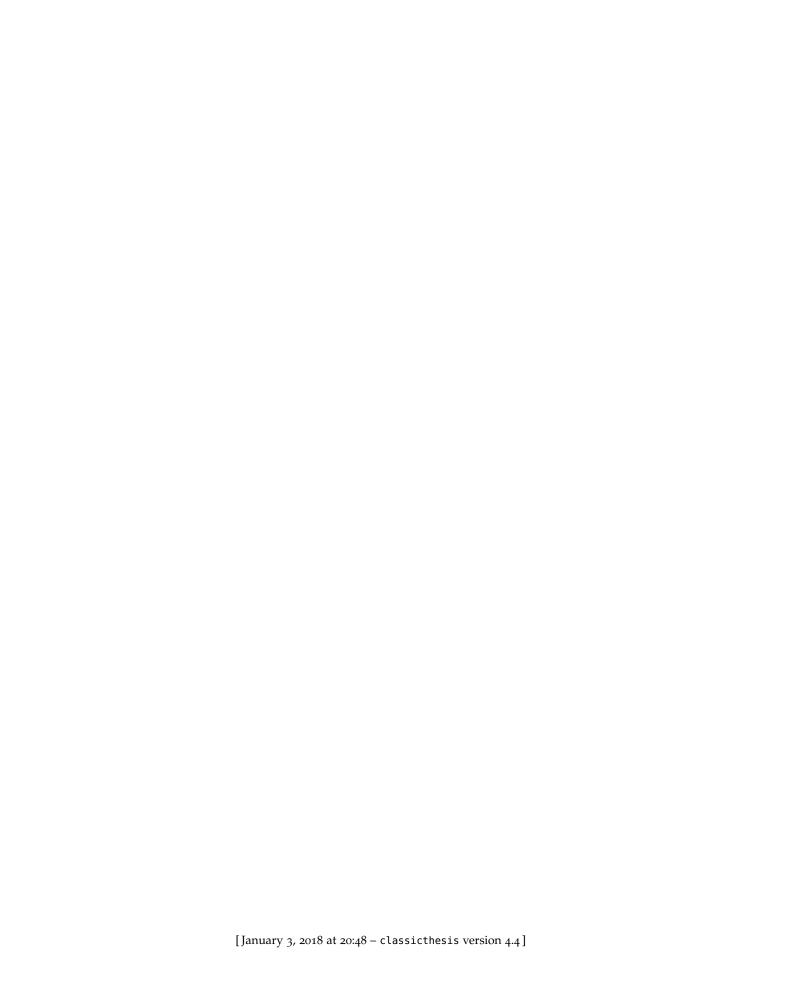
Put your acknowledgments here.

Many thanks to everybody who already sent me a postcard!

Regarding the typography and other help, many thanks go to Marco Kuhlmann, Philipp Lehman, Lothar Schlesier, Jim Young, Lorenzo Pantieri and Enrico Gregorio¹, Jörg Sommer, Joachim Köstler, Daniel Gottschlag, Denis Aydin, Paride Legovini, Steffen Prochnow, Nicolas Repp, Hinrich Harms, Roland Winkler, Jörg Weber, Henri Menke, Claus Lahiri, Clemens Niederberger, Stefano Bragaglia, Jörn Hees, Scott Lowe, Dave Howcroft, and the whole LATEX-community for support, ideas and some great software.

Regarding L_YX: The L_YX port was intially done by *Nicholas Mariette* in March 2009 and continued by *Ivo Pletikosić* in 2011. Thank you very much for your work and for the contributions to the original style.

¹ Members of GuIT (Gruppo Italiano Utilizzatori di TEX e LATEX)



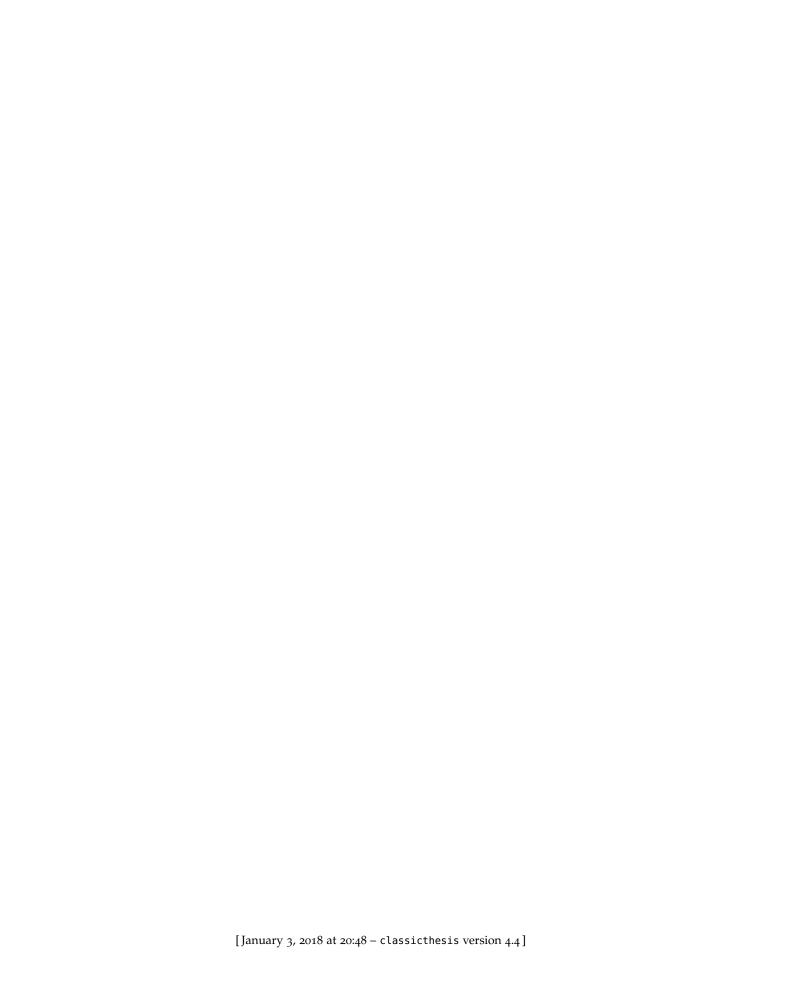
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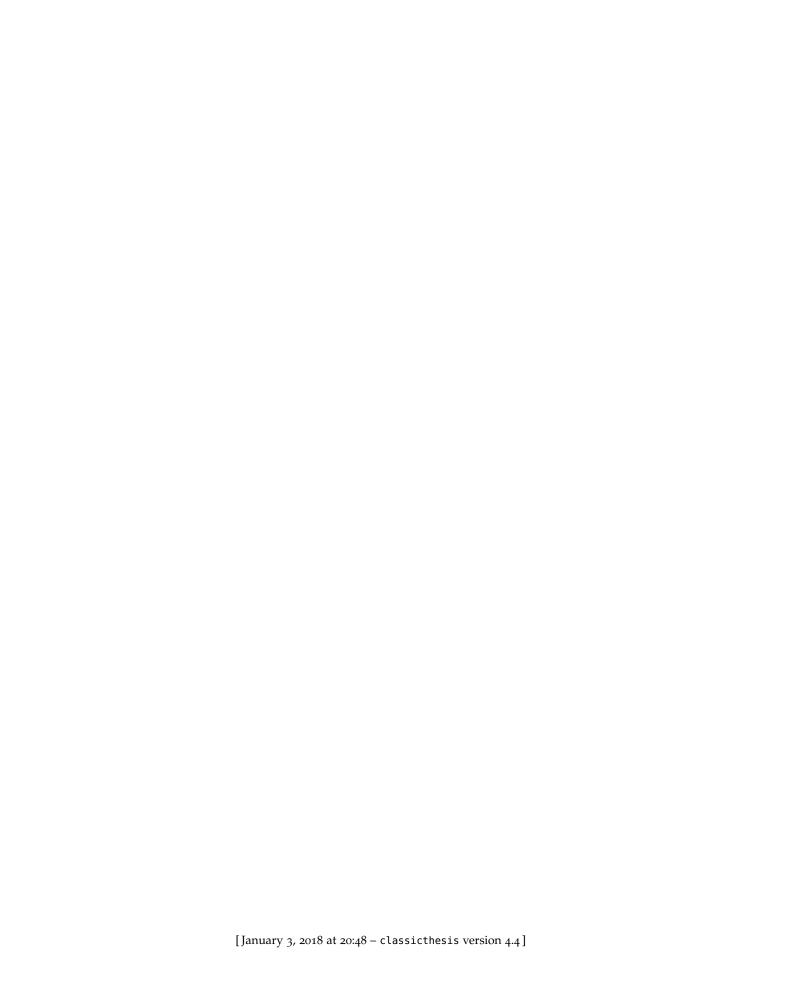
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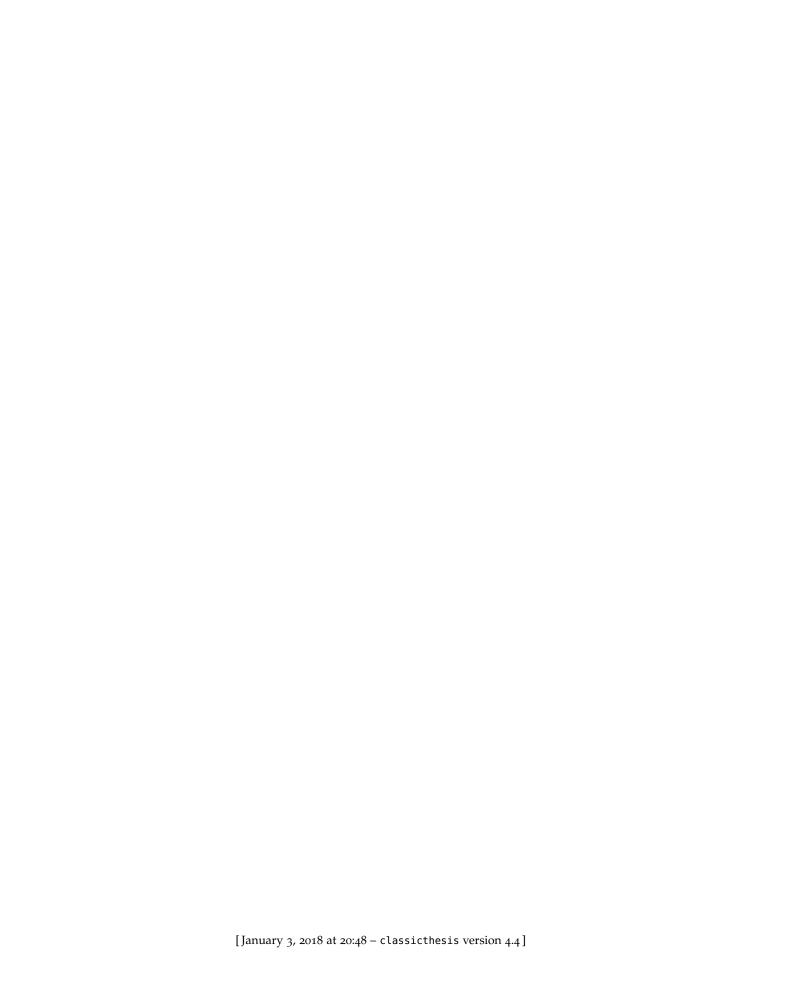


Part I INTRODUCTION



INTRODUCTION

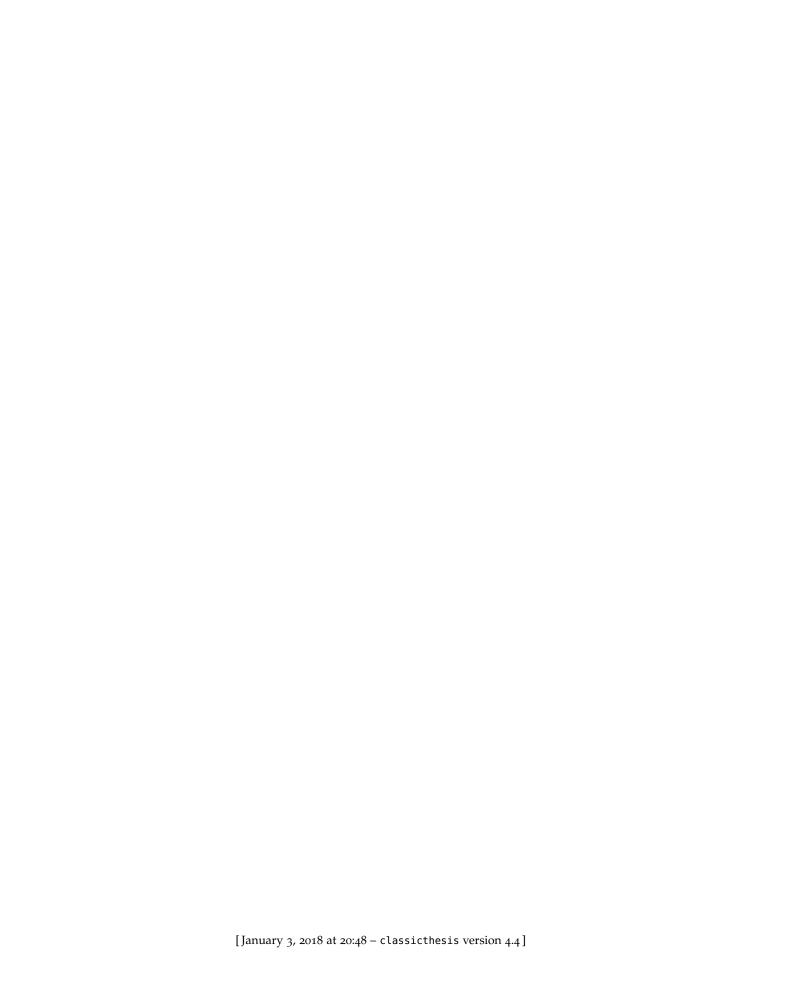
- 1.1 MOTIVATION
- 1.1.1 *xxx*
- 1.2 CONTRIBUTIONS
- 1.3 THESIS OUTLINE



PRELIMINARIES

2.1 REINFORCEMENT LEARNING

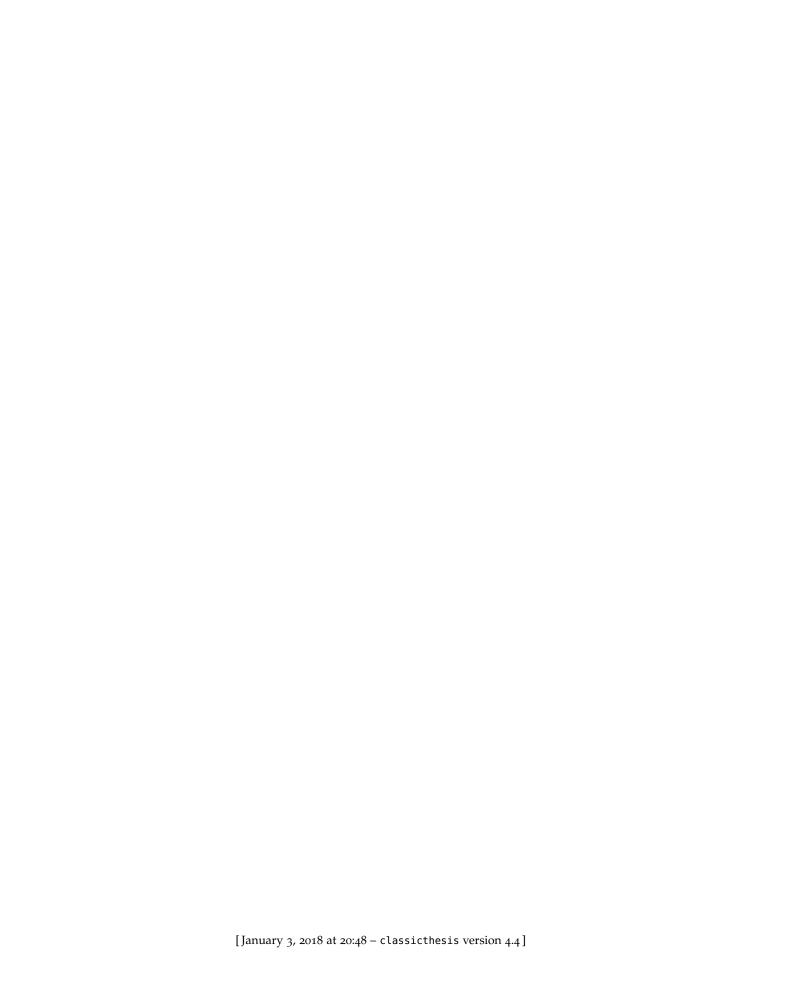
- 2.1.1 rl
- 2.1.2 *mdp*
- 2.1.3 *pi, vi, q-learning* (?)
- 2.1.4 Distributional RL
- 2.2 RISK-AVERSION
- 2.2.1 general
- 2.2.2 var
- 2.2.3 cvar
- 2.3 LITERATURE SURVEY



Part II

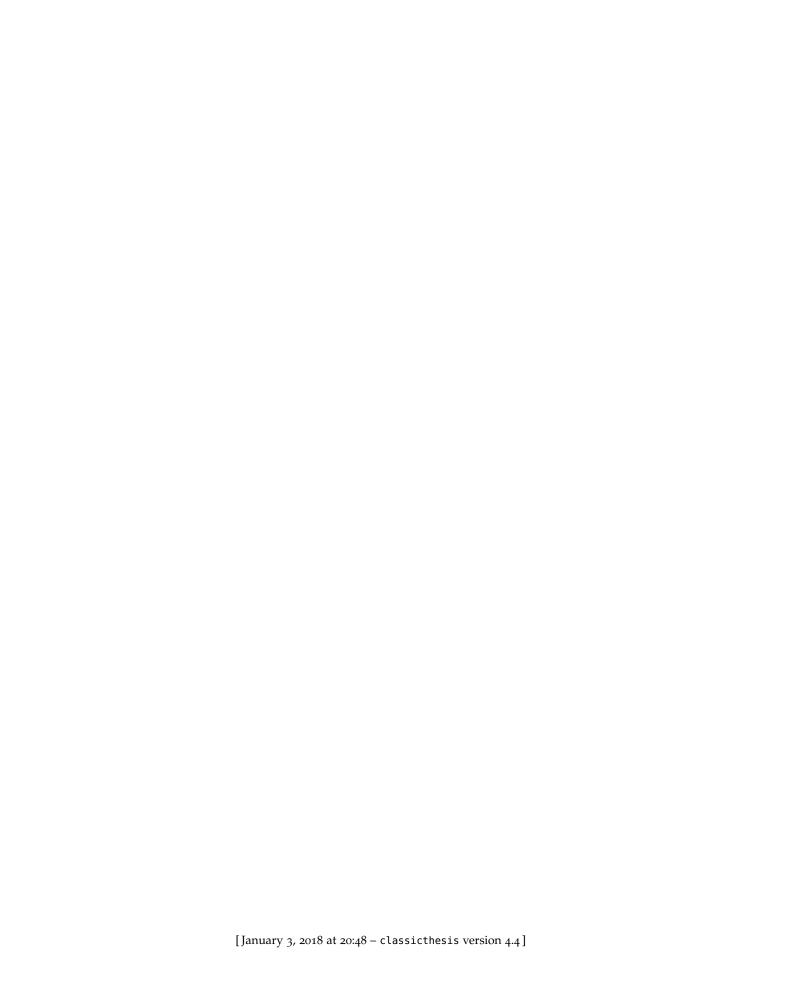
REINFORCEMENT LEARNING WITH CVAR

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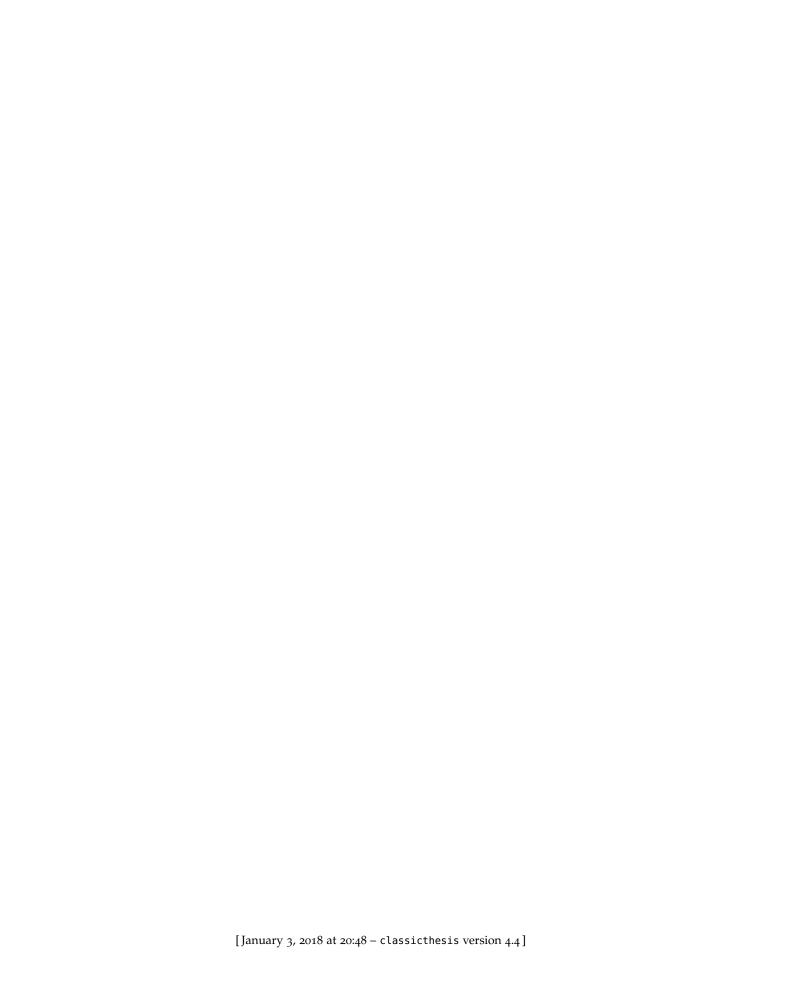
VALUE ITERATION WITH CVAR

- 3.1 CVAR BELLMAN EQUATION
- 3.2 EFFICIENT COMPUTATION
- 3.2.1 *Proof*
- 3.3 EXPERIMENTS



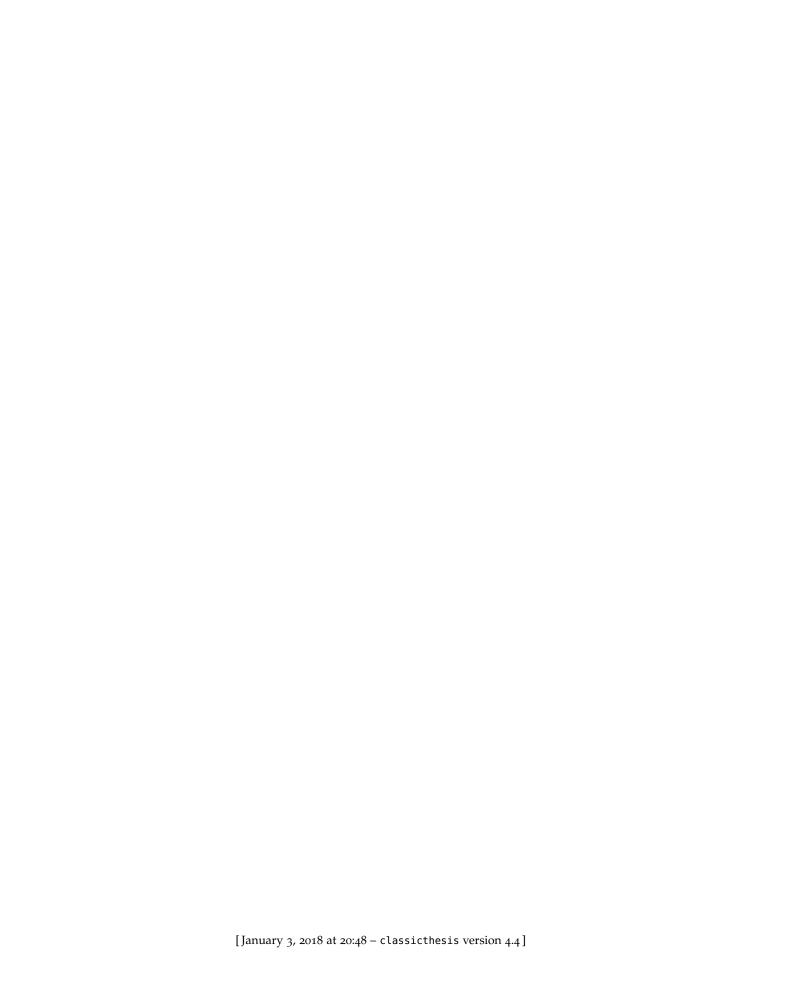
Q-LEARNING WITH CVAR

- 4.1 TODO
- 4.2 TODO
- 4.3 TODO
- 4.4 EXPERIMENTS

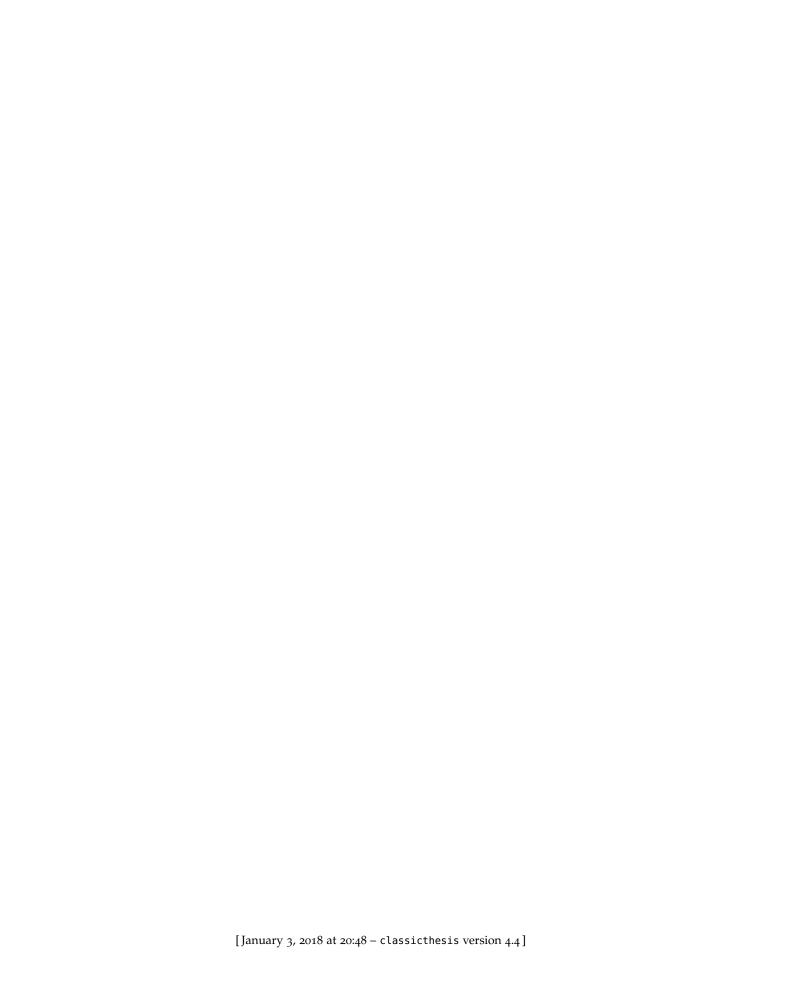


APPROXIMATE Q-LEARNING WITH CVAR

- 5.1 TODO
- 5.2 TODO
- 5.3 TODO
- 5.4 EXPERIMENTS

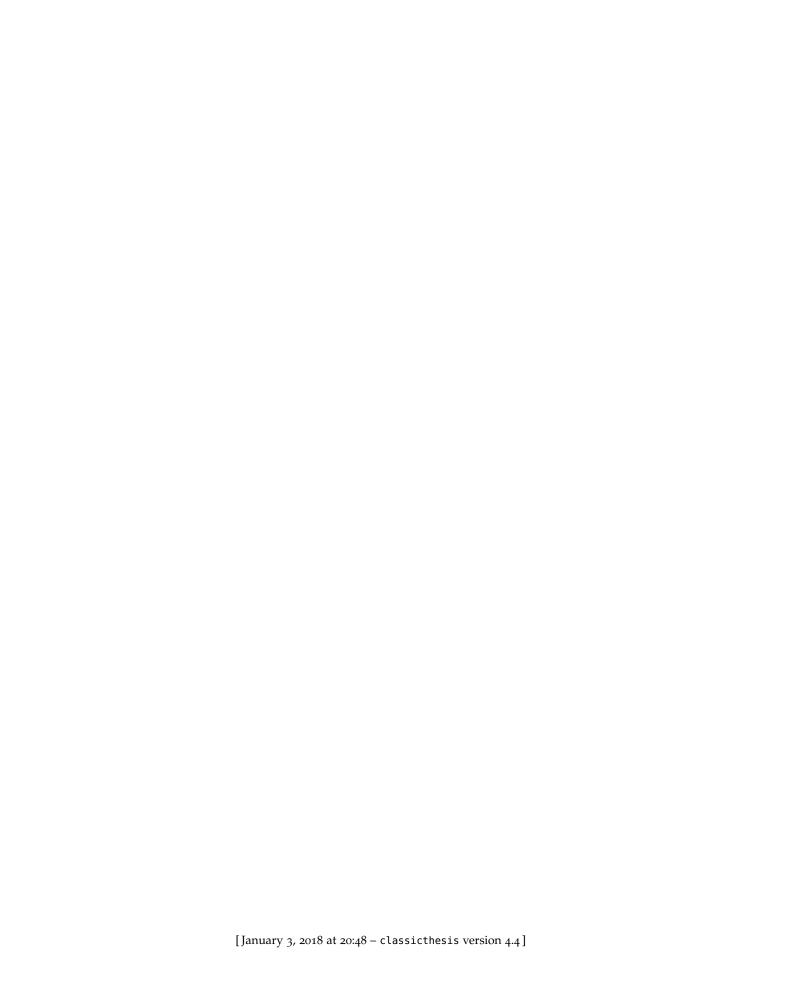


Part III CONCLUSION



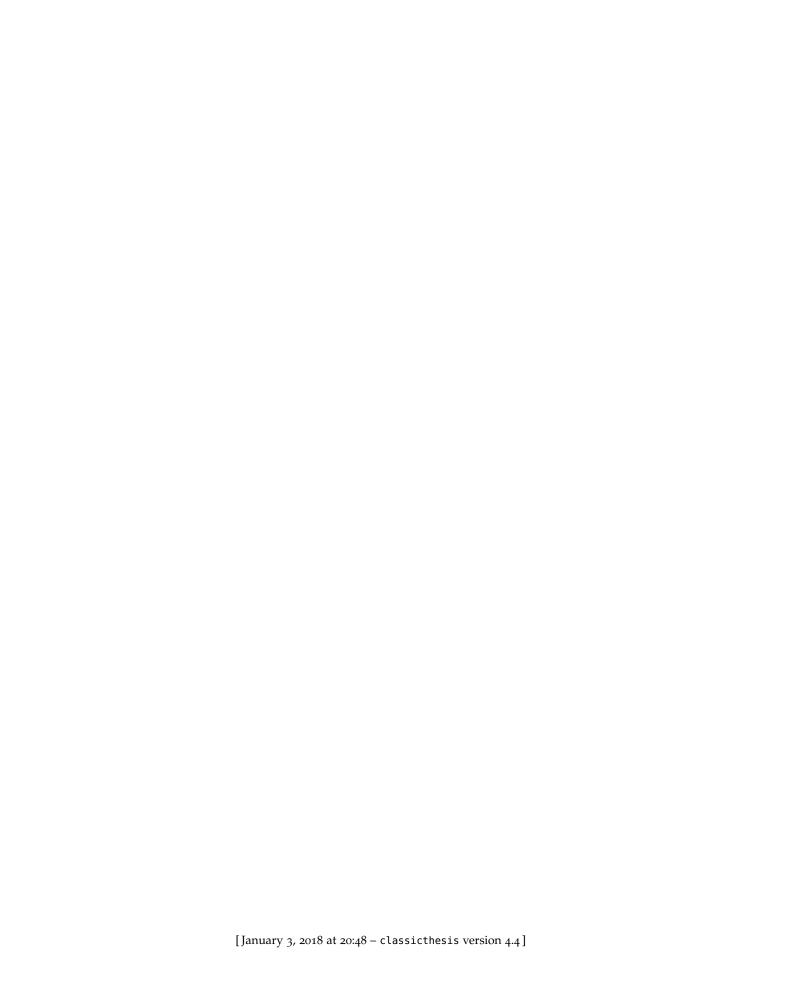
CONCLUSION

Bäuerle and Ott [3] Bellemare, Dabney, and Munos [4] Chow et al. [7] Dabney et al. [8] Garcia and Fernández [9] Majumdar and Pavone [13] Morimura et al. [14] Morimura et al. [15] Pflug and Pichler [16] Rockafellar and Uryasev [17] Rockafellar and Uryasev [18] Majumdar and Pavone [13] Leike et al. [12] Amodei et al. [1] Shapiro [19] Artzner et al. [2] Tamar et al. [21] Sutton and Barto [20] Watkins and Dayan [23] Bellman [5] Tsitsiklis [22] Boyd and Vandenberghe [6] Kreyszig [11] Koenker and Hallock [10]



Part IV

APPENDIX





INTRODUCTION

This bundle for LATEX has two goals:

- Provide students with an easy-to-use template for their Master's or PhD thesis. (Though it might also be used by other types of authors for reports, books, etc.)
- 2. Provide a classic, high-quality typographic style that is inspired by **bringhurst:2002**'s "*The Elements of Typographic Style*" [**bringhurst:2002**].

A Classic Thesis Style version 4.4

The bundle is configured to run with a *full* MiKT_EX or T_EXLive¹ installation right away and, therefore, it uses only freely available fonts. (Minion fans can easily adjust the style to their needs.)

People interested only in the nice style and not the whole bundle can now use the style stand-alone via the file classicthesis.sty. This works now also with "plain" LATEX.

As of version 3.0, classicthesis can also be easily used with L_YX^2 thanks to Nicholas Mariette and Ivo Pletikosić. The L_YX version of this manual will contain more information on the details.

This should enable anyone with a basic knowledge of \LaTeX 2 $_{\mathcal{E}}$ or \LaTeX to produce beautiful documents without too much effort. In the end, this is my overall goal: more beautiful documents, especially theses, as I am tired of seeing so many ugly ones.

The whole template and the used style is released under the GNU General Public License.

If you like the style then I would appreciate a postcard:

André Miede Detmolder Straße 32 31737 Rinteln Germany

The postcards I received so far are available at:

http://postcards.miede.de

So far, many theses, some books, and several other publications have been typeset successfully with it. If you are interested in some typographic details behind it, enjoy Robert Bringhurst's wonderful book. A well-balanced line width improves the legibility of the text. That's what typography is all about, right?

¹ See the file LISTOFFILES for needed packages. Furthermore, classicthesis works with most other distributions and, thus, with most systems LATEX is available for.

² http://www.lyx.org

IMPORTANT NOTE: Some things of this style might look unusual at first glance, many people feel so in the beginning. However, all things are intentionally designed to be as they are, especially these:

- No bold fonts are used. Italics or spaced small caps do the job quite well.
- The size of the text body is intentionally shaped like it is. It supports both legibility and allows a reasonable amount of information to be on a page. And, no: the lines are not too short.
- The tables intentionally do not use vertical or double rules. See the documentation for the booktabs package for a nice discussion of this topic.³
- And last but not least, to provide the reader with a way easier access to page numbers in the table of contents, the page numbers are right behind the titles. Yes, they are *not* neatly aligned at the right side and they are *not* connected with dots that help the eye to bridge a distance that is not necessary. If you are still not convinced: is your reader interested in the page number or does she want to sum the numbers up?

Therefore, please do not break the beauty of the style by changing these things unless you really know what you are doing! Please.

YET ANOTHER IMPORTANT NOTE: Since classicthesis' first release in 2006, many things have changed in the LATEX world. Trying to keep up-to-date, classicthesis grew and evolved into many directions, trying to stay (some kind of) stable and be compatible with its port to LyX. However, there are still many remains from older times in the code, many dirty workarounds here and there, and several other things I am absolutely not proud of (for example my unwise combination of KOMA and titlesec etc.).

An outlook into the future of classicthesis.

Currently, I am looking into how to completely re-design and re-implement classicthesis making it easier to maintain and to use. As a general idea, classicthesis.sty should be developed and distributed separately from the template bundle itself. Excellent spin-offs such as arsclassica could also be integrated (with permission by their authors) as format configurations. Also, current trends of microtype, fontspec, etc. should be included as well. As I am not really into deep LATEX programming, I will reach out to the LATEX community for their expertise and help.

³ To be found online at http://mirror.ctan.org/macros/latex/contrib/booktabs/.

A.1 ORGANIZATION

A very important factor for successful thesis writing is the organization of the material. This template suggests a structure as the following:

• Chapters/ is where all the "real" content goes in separate files such as Chapter01.tex etc.

- You can use these margins for summaries of the text body...
- FrontBackMatter/ is where all the stuff goes that surrounds the "real" content, such as the acknowledgments, dedication, etc.
- gfx/ is where you put all the graphics you use in the thesis. Maybe they should be organized into subfolders depending on the chapter they are used in, if you have a lot of graphics.
- Bibliography.bib: the BibTEX database to organize all the references you might want to cite.
- classicthesis.sty: the style definition to get this awesome look and feel. Does not only work with this thesis template but also on its own (see folder Examples). Bonus: works with both LATEX and PDFLATEX...and LyX. Great tool and it's free!
- ClassicThesis.tex: the main file of your thesis where all gets bundled together.
- classicthesis-config.tex: a central place to load all nifty packages that are used.

Make your changes and adjustments here. This means that you specify here the options you want to load classicthesis.sty with. You also adjust the title of your thesis, your name, and all similar information here. Refer to Section A.3 for more information.

This had to change as of version 3.0 in order to enable an easy transition from the "basic" style to LyX.

In total, this should get you started in no time.

A.2 STYLE OPTIONS

... or your supervisor might use the margins for some comments of her own while reading. There are a couple of options for classicthesis.sty that allow for a bit of freedom concerning the layout:

• General:

 drafting: prints the date and time at the bottom of each page, so you always know which version you are dealing with. Might come in handy not to give your Prof. that old draft.

• Parts and Chapters:

- parts: if you use Part divisions for your document, you should choose this option. (Cannot be used together with nochapters.)
- linedheaders: changes the look of the chapter headings a bit by adding a horizontal line above the chapter title. The chapter number will also be moved to the top of the page, above the chapter title.

• Typography:

- eulerchapternumbers: use figures from Hermann Zapf's Euler math font for the chapter numbers. By default, old style figures from the Palatino font are used.
- beramono: loads Bera Mono as typewriter font. (Default setting is using the standard CM typewriter font.)
- eulermath: loads the awesome Euler fonts for math. Palatino is used as default font.

• Table of Contents:

- tocaligned: aligns the whole table of contents on the left side. Some people like that, some don't.
- dottedtoc: sets pagenumbers flushed right in the table of contents.
- manychapters: if you need more than nine chapters for your document, you might not be happy with the spacing between the chapter number and the chapter title in the Table of Contents. This option allows for additional space in this context. However, it does not look as "perfect" if you use \parts for structuring your document.

• Floats:

- listings: loads the listings package (if not already done) and configures the List of Listings accordingly.
- floatperchapter: activates numbering per chapter for all floats such as figures, tables, and listings (if used).

Options are enabled via option=true

Furthermore, pre-defined margins for different paper sizes are available, e.g., a4paper, a5paper, and letterpaper. These are based on your chosen option of \documentclass.

The best way to figure these options out is to try the different possibilities and see what you and your supervisor like best.

In order to make things easier, classicthesis-config.tex contains some useful commands that might help you.

A.3 CUSTOMIZATION

This section will show you some hints how to adapt classicthesis to your needs.

The file classicthesis.sty contains the core functionality of the style and in most cases will be left intact, whereas the file classic-thesis-config.tex is used for some common user customizations.

The first customization you are about to make is to alter the document title, author name, and other thesis details. In order to do this, replace the data in the following lines of classicthesis-config.tex:

Modifications in classicthesis-config.tex

```
% *******************************
% 2. Personal data and user ad-hoc commands
% ************************
\newcommand{\myTitle}{A Classic Thesis Style\xspace}
\newcommand{\mySubtitle}{An Homage to...\xspace}
```

Further customization can be made in classicthesis-config.tex by choosing the options to classicthesis.sty (see Section A.2) in a line that looks like this:

```
\PassOptionsToPackage{
  drafting=true, % print version information on the bottom
     of the pages
 tocaligned=false, % the left column of the toc will be
     aligned (no indentation)
 dottedtoc=false, % page numbers in ToC flushed right
                  % use part division
 parts=true,
 eulerchapternumbers=true, % use AMS Euler for chapter font (
     otherwise Palatino)
                         % chaper headers will have line
  linedheaders=false,
     above and beneath
                         % numbering per chapter for all
  floatperchapter=true,
     floats (i.e., Figure 1.1)
 listings=true, % load listings package and setup LoL
  subfig=true, % setup for preloaded subfig package
  eulermath=false, % use awesome Euler fonts for mathematical
     formulae (only with pdfLaTeX)
 beramono=true, % toggle a nice monospaced font (w/ bold)
 minionpro=false % setup for minion pro font; use minion pro
      small caps as well (only with pdfLaTeX)
}{classicthesis}
```

Many other customizations in classicthesis-config.tex are possible, but you should be careful making changes there, since some changes could cause errors.

A.4 ISSUES

This section will list some information about problems using classicthesis in general or using it with other packages.

Beta versions of classicthesis can be found at Bitbucket:

https://bitbucket.org/amiede/classicthesis/

There, you can also post serious bugs and problems you encounter.

A.5 FUTURE WORK

So far, this is a quite stable version that served a couple of people well during their thesis time. However, some things are still not as they should be. Proper documentation in the standard format is still missing. In the long run, the style should probably be published separately, with the template bundle being only an application of the style. Alas, there is no time for that at the moment...it could be a nice task for a small group of LATEXnicians.

Please do not send me email with questions concerning LATEX or the template, as I do not have time for an answer. But if you have comments, suggestions, or improvements for the style or the template in general, do not hesitate to write them on that postcard of yours.

A.6 BEYOND A THESIS

The layout of classicthesis.sty can be easily used without the framework of this template. A few examples where it was used to typeset an article, a book or a curriculum vitae can be found in the folder Examples. The examples have been tested with latex and pdflatex and are easy to compile. To encourage you even more, PDFs built from the sources can be found in the same folder.

A.7 LICENSE

GNU GENERAL PUBLIC LICENSE: This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but without any warranty; without even the implied warranty of merchantability or fitness for a particular purpose. See the GNU General Public License for more details.

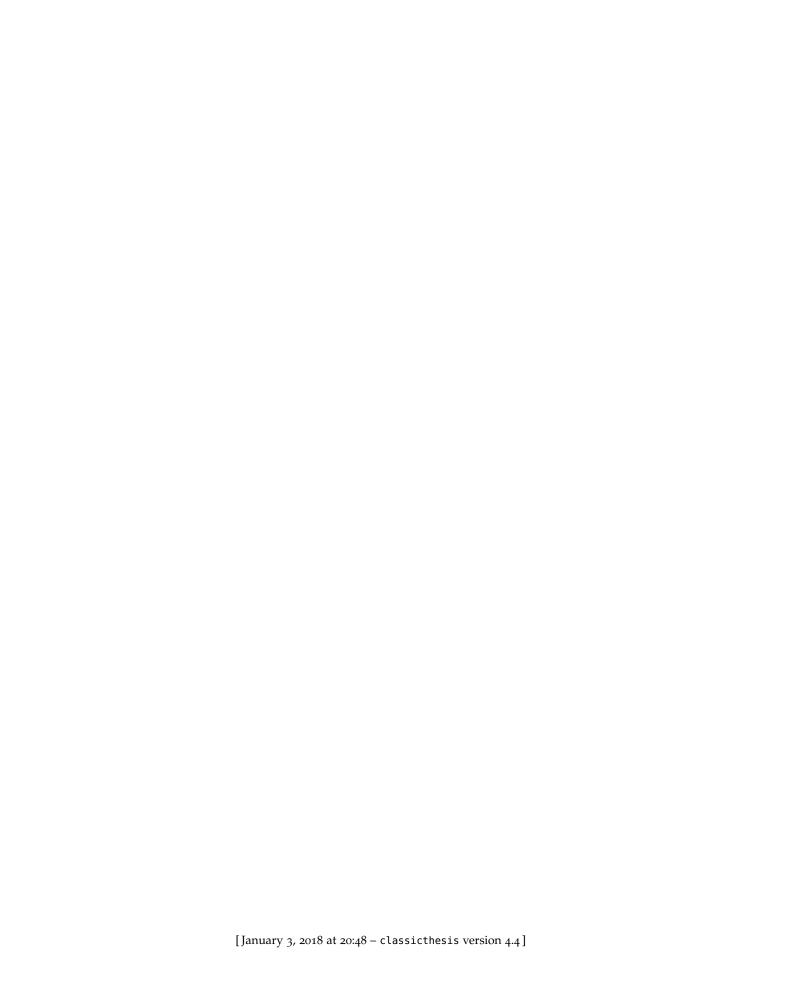
You should have received a copy of the GNU General Public License along with this program; see the file COPYING. If not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

CLASSICHTHESIS AUTHORS' NOTE: There have been some discussions about the GPL's implications on using classicthesis for theses etc. Details can be found here:

https://bitbucket.org/amiede/classicthesis/issues/123/

We chose (and currently stick with) the GPL because we would not like to compete with proprietary modified versions of our own work. However, the whole template is free as free beer and free speech. We will not demand the sources for theses, books, CVs, etc. that were created using classicthesis.

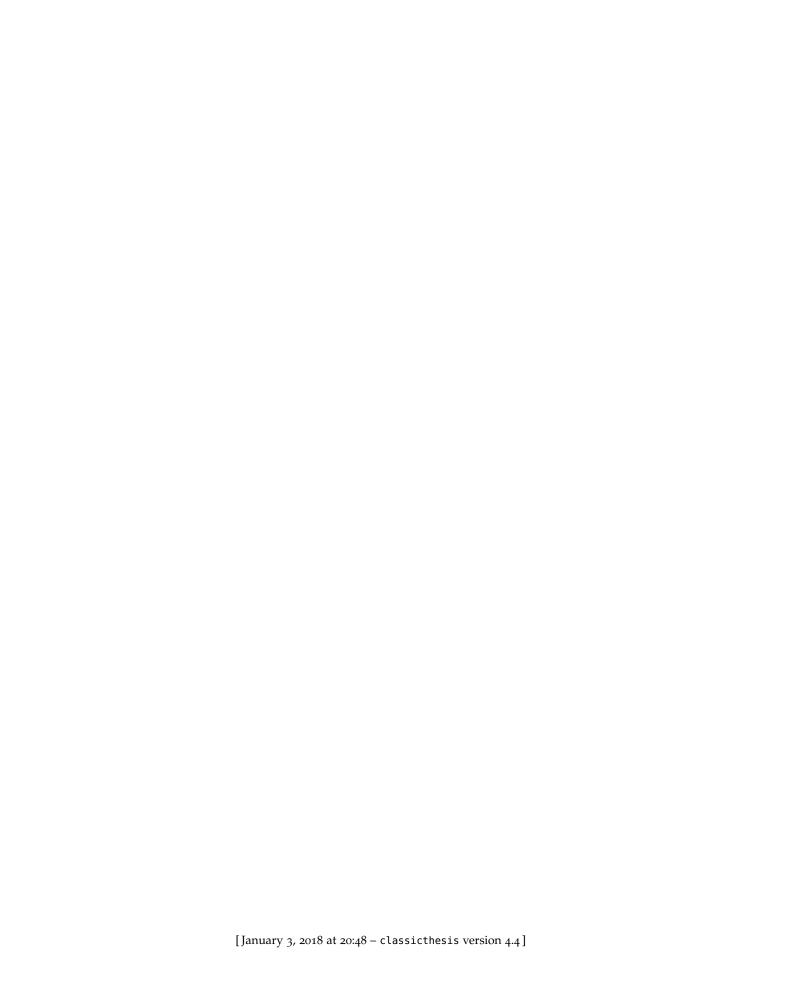
Postcards are still highly appreciated.



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DECLARATION	
Put your declaration here.	
Saarbrücken, October 2017	
	 André Miede



${\tt COLOPHON}$

This document was typeset using the typographical look-and-feel classicthesis developed by André Miede and Ivo Pletikosić. The style was inspired by Robert Bringhurst's seminal book on typography "The Elements of Typographic Style". classicthesis is available for both LATEX and LYX:

https://bitbucket.org/amiede/classicthesis/

Happy users of classicthesis usually send a real postcard to the author, a collection of postcards received so far is featured here:

http://postcards.miede.de/

Thank you very much for your feedback and contribution.