

KU LEUVEN

ARENBERG DOCTORAL SCHOOL
Faculty of Engineering Science

The Title of Your PhD Dissertation

From Artes to AI

DRAFT

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Your Name

Dissertation presented in partial fulfillment
of the requirements for the degree of
Doctor of Engineering Science (PhD):
Computer Science

Supervisors:
Prof. dr. ir. F. Leader
Prof. dr. ir. S. Leader

January 2024



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Members of the

Examination Committee:

Prof. dr. ir. The Chairman, chair

Prof. dr. ir. The One

Prof. dr. ir. The Other

Prof. dr. External Jurymember

(Far Away)

Dissertation presented in partial
fulfillment of the requirements for
the degree of Doctor of Engineering
Science (PhD): Computer Science

January 2024

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Preface

...

Instructions by the Arenberg Doctoral School:

Preface- Acknowledgements: The preface should summarise the general aim of the work. People, offices, companies and agencies who have awarded a doctoral scholarship (e.g., FWO, VLAIO, EC) should be thanked for their support. However, the names of these people, offices, companies and agencies may only be mentioned with their explicit consent and after consultation with the supervisor.



Popularized Abstract

...

Instructions by the Arenberg Doctoral School:

The popularized abstract should be approximately 1 page long with contents and language that’s suited to a wider circle of readers (not experts in your field). It should be easy to understand and enjoyable to read. Look at it as an advertisement for your PhD project.



Gepopulariseerde Samenvatting

...

Instructions by the Arenberg Doctoral School:

The popularized abstract should be approximately 1 page long with contents and language that's suited to a wider circle of readers (not experts in your field). It should be easy to understand and enjoyable to read. Look at it as an advertisement for your PhD project.



Abstract

...

Instructions by the Arenberg Doctoral School:

The scientific abstract should present the most important aims and conclusions of the dissertation in a brief text of ca. 2 pages.



Beknopte samenvatting

...

Instructions by the Arenberg Doctoral School:

The scientific abstract should present the most important aims and conclusions of the dissertation in a brief text of ca. 2 pages.



List of Abbreviations

MD molecular dynamics. 3



List of Symbols

Θ A nice symbol



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LIST OF TABLES 1

Instructions by the Arenberg Doctoral School:

Report and discussion of the research in different chapters: These chapters, reporting and discussing research results, can be based on text that has already been published or accepted or submitted to journals or conferences. In that case, the bibliographic reference of the publication should be mentioned on the first page of the chapter. If there are multiple authors, the PhD researcher must clarify the own scientific contribution after that bibliographic reference on the first page of the chapter. There is no problem in editing or rewriting a text that has already been published or accepted for publication, for example to reach consistency and coherence in writing style and formatting, to add details that were left out from publication, to meet comments of the Examination Committee, etc; The doctoral candidate must determine whether the publisher allows public availability of the publications and in which form via the webpage Romeo/Sherpa.

Consistency in layout is required for the entire manuscript! References to figures, tables, appendices, and similar structures need to be consistent.



Chapter 1

This is introduction

Instructions by the Arenberg Doctoral School:

An in-depth introduction outlining the research in a broader context: Starting from a description of the state of the art in the domain, additionally, the research questions and objectives are formulated. Furthermore, this includes the global approach and research methods.

Illustration of how to include citations [2] and [3]. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

And yet another citation [1].

Introducing some symbol: Θ .

Introducing an acronym: MD.

4 _____ THIS IS INTRODUCTION

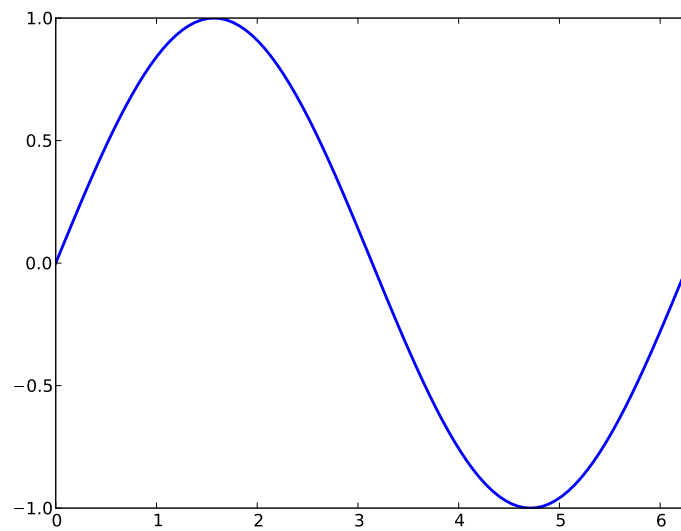


Figure 1.1: Illustration of how to include a figure (long text, should not go to Table of Figures).

Chapter 2

Manual

2.1 Tips and Tricks

2.1.1 Joint PhD Dissertation

Add the `joint` option to the document class, change the `PARTNER_LOGO.eps` file and fill in the commands such as `\facultypartner` in `thesis.tex`.

2.1.2 Image on the cover page

If you want to place an image on the cover of the dissertation, you can add the code underneath to the template (check with your promotor whether this is allowed).

Include image: Search for the `\frontcoverheaderXXIV` command in the `adsphd.cls` file and add the following lines:

```
\begin{textblock*}{56mm}(10mm+#1,15mm)
\includegraphics[width=56mm,height=20mm]{image/filename}
\end{textblock*}
```

Where 56mm is the width, 20mm the height, 10mm the x-location and 15mm the y-location.

Change cover font color: Add the command `\color{red}` to the `\frontcoverheaderXXIV` command or enclose specific parts. For example, `{\color{red}\textbf{\@authorf\@author1}}`.

2.1.3 Table of contents

To remove list of figures, tables and other preface chapters from the table of contents, search for occurrences of `\addcontentsline` in the file `adsphd.cls` and comment them.

2.1.4 Small ebook size

When you add the `epub` option to the `adsphd` class the dissertation is printed to a smaller size to read on a device such as Kindle.

Environments such as tables or `tikZ` pictures are often sized in absolute values and not relative to the size of the output. You can wrap them in a `resizebox` to enforce scaling:

```
\resizebox{\textwidth}{!}{%
  \begin{tabular}{cc}
    ...
  \end{tabular}
}
```

2.2 Settings for TeXstudio

If you are working with TeXstudio or other windows latex editors you might want to adjust the editor’s settings to allow a proper compilation of the table of contents and list of figures/tables.

2.2.1 Support for TeXstudio structure panel

The chapters do not show up in the TeXstudio structure panel because the `\includechapter` is not recognized. You can replace this command with the following two lines in `thesis.tex` (replace `manual` with the chapter name):

```
% \includechapter{manual}
```

SETTINGS FOR TEXSTUDIO _____ 7

```
\graphicspath{{chapters/manual/image/}}%
\include{chapters/manual/manual}%
```

2.2.2 Custom *makeindex* and *makeglossaries* commands

According to the *README.md* the tables are indexed through two custom commands. To edit them in TeXstudio open the *Commands* settings (*Options* → *Configure TeXstudio...*, *Commands* sheet), edit the following fields and press OK.

Makeindex:

```
"C:/Program Files/MiKTeX 2.9/miktex/bin/x64/makeindex.exe" %.nlo -s nomencl.ist -o %.nls
```

Makeglossaries:

```
"C:/Program Files/MiKTeX 2.9/miktex/bin/x64/makeindex.exe" %.glo -s %.ist -t %.glg -o %.glx
```

Now the customized commands can be launched by using *Tools* → *Commands* → *MakeIndex/Makeglossaries*. If you want to automatize it in the standard *Build & View* (F5) and *Compile* (F6) commands look at the following section.

2.2.3 Custom *Build&View* and *Compile* meta-commands

Open *Options* → *Configure TeXstudio...*, *Build* sheet, edit the following field and press OK.

Build & View:

```
txs:///pdflatex | txs:///bibtex | txs:///makeglossaries | txs:///makeindex |
txs:///pdflatex | txs:///pdflatex
```

To view the PDF once created you have to press F7 (or *Tool* → *View*) and the PDF will automatically update in the default viewer when you modify it.

If you prefer to directly view the created PDF **from the beginning** edit the field as follow:

```
txs:///pdflatex | txs:///bibtex | txs:///makeglossaries | txs:///makeindex |
txs:///pdflatex | txs:///pdflatex | txs:///view-pdf
```

2.3 Full cover page

Important: most printing services will create their own cover page based on the details you send them (title, name, affiliation, ...) and do not supply you with all necessary parameters (e.g., thickness of the paper) because these differ from machine to machine. Therefore, the generated cover page is only indicative and probably not used by your printing server (or even correct).

A full cover page (combining front cover, spine and back cover) can be generated automatically using the command `make cover` or `python3 run.py cover`. This creates a pdf `$(COVERPDF)`; by default this is `cover.pdf`.

The width of the spine is set by redefining `adsphdspinewidth` (9mm by default).

It can be seen in the provided `thesis.tex` that all information necessary to generate a cover page is contained between two markers

```
%%% COVER: Settings %%%
...
%%% COVER: End settings %%%
```

DO NOT REMOVE THESE!! They are used by the Makefile!!

The default front and/or back cover page can be overwritten:

- create a file `mycoverpage.tex`
- redefine the commands `\makefrontcovergeneral` and `\makebackcovergeneral`. For an example and more information, see the provided file `mycoverpage.tex`.

The cover page in the generated pdf has the following structure:

```
<--rbleed--><--backcoverpage--><--lbleed--><--spine width--><--lbleed--><--frontcoverpage--><--rbleed-->
```

The default bleed (both `lbleed` and `rbleed`) is 7mm. I suggest not changing this value unless you know what you are doing ;) The latter can be done by redefining `\defaultlbleed` and `\defaultlbleed` respectively.

Chapter 3

This is conclusion

...

Instructions by the Arenberg Doctoral School:

An extensive conclusion, including a global discussion of the research results, a discussion of the implications of the PhD research and future perspectives in regards to follow-up research.



Appendix A

This is myappendix

...

Instructions by the Arenberg Doctoral School:

Appendices: The appendices should include parts of the research which are essential for the work, but which may hamper the readability of the text, e.g. because of their length (mathematical deductions, experimental data, examples, figures, etc.).



Bibliography

- [1] FREDERIX, Y., AND ROOSE, D. A drift-filtered approach to diffusion estimation for multiscale processes. In *Coping with complexity: model reduction and data analysis* (2010), vol. 75 of *Lecture Notes in Computational Science and Engineering*, Springer-Verlag.
- [2] MEERT, W. *Inference and Learning for Directed Probabilistic Logic Models*. PhD thesis, Informatics Section, Department of Computer Science, Faculty of Engineering, Mar. 2011. Blockeel, Hendrik (supervisor).
- [3] VAN DEN BROECK, G., TAGHIPOUR, N., MEERT, W., DAVIS, J., AND DE RAEDT, L. Lifted probabilistic inference by first-order knowledge compilation. In *Proceedings of the 22th International Joint Conference on Artificial Intelligence (IJCAI)* (2011).

Instructions by the Arenberg Doctoral School:

Bibliography: Should be arranged according to the guidelines generally accepted in the relevant research domain.

The thesis needs to be consistent in relation to bibliographic and other references. Either a global list of bibliographic references is provided at the end of the thesis, or each chapter contains bibliographic references at the end, but there cannot be a combination of these two methods of referencing.

Statement on the use of Generative AI

Instructions by the Arenberg Doctoral School:

Read the guidelines in relation to GenAI at KU Leuven and add the ‘statement on the use of Generative AI’ in your manuscript.

Uncomment the appropriate sentences in the `\useOfGenAI` command and expand the text where needed to make it more specific and add topics if they are not covered by any of the indicated topics.

The text, code, and images in this thesis are my own (unless otherwise specified). Generative AI has only been used in accordance with the KU Leuven guidelines and appropriate references have been added. I have reviewed and edited the content as needed and I take full responsibility for the content of the thesis.

This is curriculum

...

Instructions by the Arenberg Doctoral School:

Curriculum vitae: Short CV of the PhD candidate.



List of publications

Input file `chapters/publications/publications.tex` does not exist. Make sure it starts with “`\chapter{List of publications}`”. To not include this chapter in the table of contents, use the starred version of the `\chapter` command. . .

Instructions by the Arenberg Doctoral School:

List of scientific publications with a clear DOI (digital object identifier) number mentioned:(optional): The list of scientific publications by the doctoral researcher should be arranged according to the guidelines generally accepted in the relevant research domain.





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