

Otto-von-Guericke University Magdeburg

Faculty of Computer Science



Bachelor / Master Thesis

My Brilliant Thesis

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Bachelor / Master Thesis, Otto-von-Guericke University Magdeburg, 2030.

Abstract

Besides the title, the abstract is the most important part of your thesis, as most readers will only read title and abstract. Your goal is to advertise the rest of the thesis for potential readers. For that, you briefly explain what you are focusing on in the thesis. With a misleading abstract, you will miss interested readers and maybe even attract readers with wrong assumptions about your work which will stop reading soon. The abstract should describe the general area as well as the most interesting insights of the work. It is crucial to find the right level of abstraction and length. An abstract typically consists of one paragraph that is significantly shorter than the introduction.

Abstracts typically follow the same structure. You start by describing the research area as well as the general and the specific problem you are focusing on. Then, you outline how you approach the problem in terms of concepts and evaluations. Finally, you close with the most interesting insights that you gained and why they are relevant for the research area.

Acknowledgments

If you want to, you can thank your advisors and/or anyone else who supported you during the thesis in some way.

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List of Code Listings

List of Acronyms

- FOL** First-Order Logic
- SLR** Systematic Literature Review
- SPL** Software Product Line

List of Symbols

General

$\alpha[x \setminus y]$ Substitution of x in α with y

$\mathcal{P}(A)$ Power set of a set A

$f|_{A'}$ Restriction of a function $f: A \rightarrow B$ to a smaller domain $A' \subseteq A$

First-Order and Dynamic Logic

$A \wedge B$ Formalization of the sentence “ P and Q ”

1. Introduction

[...]

Goal of this Thesis

[...]

Structure of this Thesis

[...]

2. Background

[...]

3. Concept

Acronyms like software product lines (SPLs) and first-order logic (FOL) are automatically added to the list of acronyms above. To reference a chapter, subsection, figure, etc., put a label after the command (see above) and then use Chapter 1.

*You can mark stuff as TODO, which is useful for writing drafts.*¹

Or put notes to your advisors in the margin.

Theorem 3.1: My Cool Theorem

You can also add definitions and theorems in mathematical theses.

Proof. You can also add proofs, though most theses do not require any. □

In Figure 3.1, we show an example of how to typeset a complex figure only with L^AT_EX by using TikZ.

3.1 This is a section

For citing, put entries in the BibTeX file (one example is there) and use the following to reference the authors directly: Heradio et al. [2016] conducted a systematic

¹Footnotes are also possible, but are rarely used in computer science.

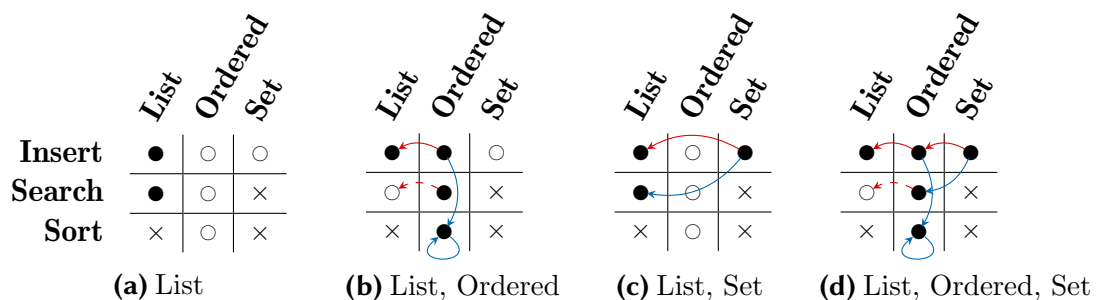


Figure 3.1: Drawing with tables and TikZ.

Table 3.1: Long caption for a table.

Column1	Column2	Column3	Column4
Left	Right	Centered	Left, fixed width
		Multi column	
Multi row	X		
	Y		

literature review (SLR) (this is an acronym defined in the main file), or use the following for references in parenthesis [[Heradio et al., 2016](#)].

3.1.1 This is a subsection

Numerated list

1. One
2. Two
3. Three

Bullet list

- One
- Two
- Three

4. Implementation

Most theses in computer science are accompanied by tool support written by the author of the thesis. Such tools enable an empirical evaluation or simply serve as a proof-of-concept. In particular, tools are typically not the ultimate goal in research, but often necessary to evaluate whether proposed concepts solve real problems. Hence, it is common to write about the tool in a dedicated chapter.

The tool chapter has several goals. For supervisors, it typically helps to estimate the implementation effort of a thesis and problems faced during development. For other students, the chapter serves as the documentation of the tool support. That is, students that extend the tool support will use this chapter to get an overview on the architecture and learn from failed attempts. As researchers are typically rather interested in concepts or evaluations, this dedicated chapter on tool support helps to remove clutter from other chapters. Nevertheless, researchers may be interested to read why tool support has been build the way it is and why it is build on certain existing tools or libraries. Write the chapter such that it useful for researchers, students, and supervisors.

5. Evaluation

[...]

6. Related Work

[...]

7. Conclusion

[...]

7.1 Future Work

[...]

Appendix

This table is automatically generated from a CSV file. Of course, you can also create tables from scratch.

	List_ Insert	List_ Search	Ordered_ Insert	Ordered_ Search	Ordered_ Min	Ordered_ Sort	Set_ Insert
coarse, Ex., Strict	2400	1418	10608	10824	2871	10169	23366
coarse, Ex., Def.	2400	1418	9652	20172	2871	14043	35884
coarse, Ex., None	2400	1418	14347	20160	2871	12687	54907
coarse, L.S., Strict	2400	1418	10608	10824	2871	10169	21047
coarse, L.S., Default	2400	1418	9430	20172	2871	13835	24688
coarse, L.S., None	2400	1418	13802	20160	2871	12687	28501
coarse, Complete	2400	1418	4504	10149	2871	10047	16114
coarse, Product	9600	2836	9010	20298	5742	20094	16114
fine, Ex., Strict	2211	1321	11210	16984	2501	6500	12901
fine, Ex., Def.	2211	1321	10299	16971	2501	6420	14695
fine, Ex., None	2211	1321	10881	16836	2501	7115	23005
fine, L.S., Strict	2211	1321	11210	16984	2501	6500	12301
fine, L.S., Default	2211	1321	10251	16971	2501	6420	13173
fine, L.S., None	2211	1321	11116	16836	2501	7115	20053
fine, Complete	2211	1321	2018	16531	2501	6613	9336
fine, Product	8844	2642	4036	33062	5002	13226	9336

Figure A.1: Caption in the text.

Bibliography

Ruben Heradio, Hector Perez-Morago, David Fernandez-Amoros, Francisco Javier Cabrerizo, and Enrique Herrera-Viedma. A Bibliometric Analysis of 20 Years of Research on Software Product Lines. *Information and Software Technology*, 72: 1–15, 2016. doi: 10.1016/j.infsof.2015.11.004. (cited on Page 5 and 6)

I herewith assure that I wrote the present thesis independently, that the thesis has not been partially or fully submitted as graded academic work and that I have used no other means than the ones indicated. I have indicated all parts of the work in which sources are used according to their wording or to their meaning.

Magdeburg, 1st January 2030