

Structure and Layout of Final Research Theses at the Open Source Research Group

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Abstract

Imprecise and long-winded documents, including final theses, are the bane of any reader. At university, such documents ensure bad grades. Contrary to popular belief, lengthy theses do not document hard work; they only document that the student was not willing or able to be brief and precise. Credit should be given for achievement and insight, not for text production. In this document, we describe how students should structure their final thesis. At a thesis' core is the research chapter, as taught in Nailing your Thesis, our research lab course. The research chapter is about 6000 words long and contains all essential information. Anything that does not fit into this chapter should go into a secondary elaboration chapter, which extends the research chapter. These constraints force students to think hard about what is important and what is not. It also allows the guiding supervisor to turn the thesis into a research paper quickly, if possible and reasonable.

1 Introduction

This document describes the desired structure (by chapter) of a final research thesis at the Open Source Research Group (Riehle Group). In addition, the styles, graphics, and layout of this document should be used for the document representing the final thesis (this is not mandatory, though).

Additional information on how to perform research and write a convincing final thesis can be learned in “Nailing your Thesis” (NYT), our research course. NYT not only teaches how to approach, structure, and perform research, but also how to put it into a convincing written form. More information available at <http://nythesis.com>.

2 Thesis Structure

2.1 Overall Structure

The overall structure of a final thesis consists of the following sequence of sections resp. chapters:

- “Abstract” (in English): a 100-200 word summary of the thesis
- “Zusammenfassung”: identical to the English abstract but in German (optional)
- “Introduction”: An introduction, providing the original work description; motivation

- “Research chapter”: a 6000 word chapter written in the style of a research paper
- “Elaboration of research chapter”: unrestricted space that explains the research chapter
- “References”: A list of publications cited in the thesis

If the thesis is written in English, no German abstract is necessary. If the thesis is written in German, an English abstract is required.

2.2 Introduction

The “Introduction” chapter consists of the following subsections, where applicable:

- Original thesis goals
- Changes to thesis goals, if any

The first subsection presents, in the student's own words, the original work results description provided by us, including a motivation for the work.

The second subsection introduces and explains any changes to the goals that occurred during the thesis work. Also, if the original work results description included an approach and suggested process, any changes to that originally chartered course of action should be explained.

2.3 Research Chapter

The second chapter of the thesis, the research chapter, summarizes the work results in the form of a research paper. It should be about 6000 words long. The general form is:

- Introduction
- Related Work
- Research Question
- Research Approach
- Used Data Sources
- Research Results
- Results Discussion
- Conclusions

The specifics of these subsections vary. For example, in confirmatory research, the results discussion section is frequently split into a general discussion section and a “threats to validity” section that goes over the math and its possible limitations.

FAU Students can learn more details by taking the Nailing your Thesis course or at least by looking at the slides, available on StudOn.

2.4 Elaboration of Research Chapter

The 6000 word constraint will lead the student to focus on what is important. It will make them omit additional information from the research chapter that may be necessary to convince the reader about the truth and quality of the content. This information should be provided in the next chapter, the “research chapter elaboration” chapter, and it needs to be linked to from the research chapter.

Thus, for every sentence or paragraph in the research chapter that needs elaboration, a footnote or other linking mechanism should be used that points to the elaboration in the next chapter. An endnotes section is an acceptable implementation of the desired linking mechanism.

It is up to the student to decide whether an elaboration is necessary or can be omitted. To make this decision, a student should mentally try to assume the role of the reader and ask him- or herself: “Do I believe this statement (in the research chapter)?” If the answer is no, an elaboration may be necessary.

2.5 References

For citing relevant work and for providing its sources as part of the references section (bibliography), please use the APA style of citing, referencing, and listing sources, see <http://www.apastyle.org>.

3 Style and Formatting

Nailing your Thesis provides advice on good writing style.

4 Deliverables

The thesis has to be handed in to the Prüfungsamt in paper. In addition, we require to receive all materials electronically, including source materials. Thus, please create an archive and send it to us. Content of the archive should contain:

- The thesis, in source form (odt/doc-file or LaTeX¹), and as a PDF
- All raw materials, including source code, any empirical data, interviews
- All modified materials, including interview analysis, R source code and data, etc.

If the source code is part of a larger project and it is open source, a link to the public repository may be sufficient.

1 Teaching Case theses may only be written in LibreOffice (odt) format.