On the Structure of a Masters's Thesis

Introduction

This document contains an example structure of a Master's Thesis, conference paper, or other written report. The number of pages suggested for the different sections are, however, primarily aimed at the Master's Thesis. They may be used as a guideline when writing the thesis.

The structure of the thesis should be the following. The chapters are described in more detail later.

1. Introduction (1–2 pages)

   Contains a motivation of the work.

2. Problem statement (5–10 pages)

   Describes the problem that the thesis tries to solve.

3. Criteria (2 pages)

   A list of criteria for evaluating the quality of the solution.

4. Generic model (5 pages)

   A description of how the solution is related to a bigger picture.

5. Implementation (20 pages)

   Previous work (of which 5–10 pages)

   Own solution (of which 10–15 pages)

6. Analysis (20 pages)

   Analysis of the own solution to the problem with respect to the criteria.

7. Conclusion (2 pages)

   A description of what has been done and suggestions for future work.

A more detailed description of the structure

The thesis, as well as any other report, should consist of an abstract, table of contents, possibly a list of figures, an acknowledgements part, etc. These parts are not described in this text, since the focus is more on the structure of the actual work.

1 Introduction

The introduction should consist of a motivation of the work, i.e., explain why the work is done and how the rest of the world will benefit from the results. The motivation should be written in layman terms, i.e., without any technical jargon. An example of an everyday problem may be included.

2 Problem statement

The problem statement section should formulate the problem that the thesis is trying to solve as well as provide a definition of ambigous terminology.

The problem statement chapter will be structured as follows (the headtitles should probably be renamed, though):

2.1 Definition of terms

If the problem statement consists of ambigous terminology, which it most likely does, then explain all such terms before the problem statement. Should new terms appear in the definition of these terms, then define them as well. The definitions should appear in such an order, that no term is defined using another without the other term being defined first. In other words, when defining term B using term A, then term A should be defined before B.

The terminology should be written as a fluent text functioning as an introduction to the actual problem statement.

2.2 The problem statement

The problem statement consists of two parts: the formulation of the problem (i.e. *The main objective of this thesis ...* , see example below), and the scope of the problem. If the problem is too wide, then it must be limited.

For example:

The main objective of this thesis is to solve the problem of ...

The main focus of this thesis is to solve ...

3 Criteria

This chapter should consist of criteria to be used when evaluating the solution, i.e., when acquiring a solution for the problem formulated in the previous chapter, which criteria are used for evaluating the quality of the solution. The criteria should make it possible to distinguish good solutions from bad ones.

The criteria should be as generic and optimal as possible. For example: *The weight of the cell phone should be as light as possible, the size should be small, and the duration of the battery should be as long as possible.* These criteria may be conflicting, which means that compromises have to be made.

The number of criteria should not exceed 10, since each criteria should be analyzed in chapter 6.

4 The generic model

This part should contain a description of how the problem relates to a bigger picture. It should also create a generic level of abstraction to which different solutions may be applied.

5 Implementation

5.1 Previous work

This part should describe how other people have solved the problem, and discuss the shortcomings of these solutions, i.e., what is lacking from their work. The purpose of this part is to note that nobody has solved the problem completely, but that partial solutions may exist.

5.2 Own solution

This part should describe what you have done yourself, and how your solution works. It may consist of a technical description, architecture, algorithm, etc.

6 Analysis

This part should contain an analysis of how well the given solution in Section 5.2 solves the problem formulated in the problem statement part according to the evaluation criteria, as well as determine whether the simplifications and assumptions are still valid and justified.

7 Conclusion

The conclusions part should describe what has been done, i.e., it should contain a short description of the problem, the solution, the results, and the limitations of the solution. It should not introduce any new concepts. Finally, the conclusions part should propose possible future work.

References

The references should be in alphabetical order or in order of appearance. These references should be up to date.

A note on the order of writing the chapters

The first thing to write is the actual problem statement. After that, the terminology should be defined as described earlier. Once you have written the problem statement, proceed in order from the criteria to the conclusions. After that, write the introduction. Then write the abstract, and then modify the title to fit the text.

The last thing to write will naturally be the acknowledgements part.

Grading criteria

The thesis is graded according to the following general principles:

- If the analysis is missing or weak, then the maximum grade is 4.
- If the description of the own solution is weak, then the maximum grade is 3.
- If the problem is not formulated well enough, i.e., if an explanation of what is being solved is missing, then the maximum grade is 2.
- If the language is poor (the spelling is bad etc), then the final grade is the grade of the work minus one.