University of Stavanger

Faculty of Science and Technology

BACHELOR'S THESIS

Study program/ Specialization:	Spring semester, 20..... Open / Restricted access
Writer:	…… (Writer's signature)
Faculty supervisor: External supervisor(s):	
Thesis title:	
Credits (ECTS):	
Key words:	Pages: …… + enclosure: …… Stavanger, …….. Date/year

Faculty of Science and Technology
Department of Electrical Engineering and Computer Science

Thesis Title

Master's Thesis in Computer Science

by

FirstName LastName and

AnotherName WithLastName

Internal Supervisors

Setty 1

Supervisor 2

External Supervisors

External Supervisor 1

External Supervisor 2

Reviewers

Reviewer1

Reviewer2

January 22, 2022

"Programming is a nice break from thinking."

Leslie Lamport

Abstract

Acknowledgements

I would like to thank my supervisors for their fantastic enthusiasm and help with writing this thesis.

Contents

Chapter 1

Introduction

3-5 pages

1.1 Background and Motivation

- Awaken the reader's interest and convince her why the theme is important.
- Background information might be historical in nature, or it might refer to previous research or practical considerations.
- Provide an example or use case for the problem.
- It should be written on a level that it's understandable by anyone with a computer science bachelor's degree.

1.2 Objectives

- Define the goals of your study. It might be presented as a bullet list.

1.3 Approach and Contributions

- Give a brief summary of your overall approach.
- Summarize the specific contributions that you made in this thesis (e.g., a task definition, a method or model, a test collection, empirical results, analysis, etc.). It might be presented as a bullet list.

1.4 Outline

- Give an overview of the main points and the structure of your thesis. “Chapter 2 covers ... Chapter 3 describes ... ”
- Show in a natural way how the different parts (chapters) relate to each other.

Chapter 2

Background

10 - 15 pages

- An alternative heading is "Technology and tools". Detail your choice of technology and development tools (typically, each in a separate section).
- Show how the particular choice of technology and tools is suited to reach your objectives, and demonstrate that you have given due consideration to the suitability of them (e.g., by discussing alternatives and presenting a feature comparison table).
- If there is related work done by others (e.g., similar tools or systems), discuss it and explain how yours relates to it.
- Mind that the reader may have never heard about these things. You need to discuss them in such detail that it is possible to follow later parts of the thesis without having to consult external resources.
- Key concept / tool / technology 1
- Key concept / tool / technology 2
- ...
- To include reference use Bibtex as below:
  - Use `\citet{}` for textual citation. For example, Balog [1] proposed...
  - Use `\citep{}` for parenthetical citation. For example, In [2] the idea of ..
  - Here is an example of a PhD thesis: Maxwell [3]
  - Here is how a Journal article would look in the Bibliography: Sanderson [4]
  - Never write out Smith et al., there is a `\citeauthor{}` command for that (but most likely what you're looking for is actually `\citet{}`).

Chapter 3

Approach

20 - 30 pages

- This chapter describes your main contributions (i.e., what you did) and the decisions that went into them (i.e., why did you did it the way you did it).

3.1 Analysis and Requirements

Describe the analysis of the problem and the specific requirements.

3.2 Overview

- This section should explain the high-level design
- Include possibly an architecture figure that shows how the different parts fit together and what processing/technology/tools/datasets have been used for the different components.

Name these themes based on the different components or sub-problems you are solving in your thesis.

3.3 Component 1

3.4 Component 2

- For larger/more complex projects, the separate components may be chapters on their own chapters on their own (e.g., back-end vs. front-end).
- Include screenshots, examples, tables, algorithms (with pseudo code), plots for some preliminary observations leading to some aspect of your approach decisions, etc. so that it's not just text.
- Always discuss the alternatives considered and the rationale for the choosing the solutions you adopted.
- You may include code snippets for interesting/challenging (sub)problems, but it is not the idea to walk through the source code line-by-line.

Chapter 4

Results

5 - 15 pages

- Alternative heading: “Testing and Validation”.
- Present your results, and provide an analysis of them. Results can be quantitative and/or qualitative (from benchmark, user study, user satisfaction survey, etc.).
- It is desired that you have some results, nevertheless, this may not be applicable to all types of theses.

4.1 Methodology

Explain the methodology used for collecting results and the metrics used for evaluation.

4.2 Experimental Results

- Present the results, using tables and (pretty) plots.

4.3 Analysis

Now that you presented the results, what do these results actually mean (esp. regarding the objectives you set out in the introduction)? Can you identify success and failure cases? What do the results say for individual parts you evaluate and overall in combination? Make sure you formulate clear take-home messages.

Chapter 5

Conclusions

3-5 pages

- Summary of the work you have done, what worked and what didn't
- Make sure it connects well with the Introduction.

5.1 Future Directions

Discuss potential future work that may fill gaps in your work, or approaches that seem promising to overcome problems you encountered but that you weren't able to tackle.

Appendix A

Instructions to Compile and Run System

This appendix may contain following:

- Installation instructions
- Source code / class structure
- More detailed evaluation results

Bibliography

[1] Krisztian Balog. *Entity-Oriented Search*, volume 39 of *The Information Retrieval Series*. Springer, 2018.

[2] Shuo Zhang and Krisztian Balog. Evaluating conversational recommender systems via user simulation. In *Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining*, KDD '20, pages 1512–1520, 2020.

[3] David Martin Maxwell. *Modelling search and stopping in interactive information retrieval*. PhD thesis, University of Glasgow, 2019.

[4] Mark Sanderson. Test collection based evaluation of information retrieval systems. *Found. Trends Inf. Retr.*, 4(4):247–375, 2010.