



Leopold–Franzens–University  
Austria, Innsbruck

**Institute of Computer Science**  
**Research Group:**  
**QE**  
**(Quality Engineering)**

## **TITLE**

**Bachelor Thesis**

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### **Eidesstattliche Erklärung**

Ich erkläre hiermit an Eides statt durch meine eigenhändige Unterschrift, dass ich die vorliegende Arbeit selbständig verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel verwendet habe. Alle Stellen, die wörtlich oder inhaltlich den angegebenen Quellen entnommen wurden, sind als solche kenntlich gemacht.

Die vorliegende Arbeit wurde bisher in gleicher oder ähnlicher Form noch nicht als Magister-/Master-/Diplomarbeit/Dissertation eingereicht.

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Datum

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Unterschrift

## **Abstract**

**Problem statement:** Introduce the problem that you solved

**Your approach:** Briefly describe your approach and solution. What did you do to solve the problem?

**Research methods:** Briefly describe your (novel, innovative) methods for your approach. How did you approach to the problem? How did you solve it? Why your approach is good and better than the state-of-the-art?

**Main results:** Present your main (quantified) results. When applicable, present the results in the following format: our work improved ... by ..% or  $x$  times.

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# 1 Introduction

**Problem statement:** Describe the problems that exist. One paragraph for each problem.

**Motivation:** Write a paragraph to describe why the stated problems are important to be solved.

**Your approach:** Describe your approach to solve the problem. Do not simply repeat the abstract.

**Main results:** Present improvements from your results. Do not simply repeat the abstract.

**Document Structure:** Present the document structure with one sentence for each section after Section 1.

## 2 Background

If your work is specific and requires some knowledge, explain it here.

### Do:

- Describe all needed information that the reader should know.
- Briefly mention weaknesses / missing parts of described terms

### Do not:

- present your work here



## 3 Motivation

Explain in more detail the motivation that you mentioned in introduction.

Present weaknesses of the current approaches.

Present examples why your work is important.

## 4 System architecture

This is the main chapter of your thesis. It should be long.

This section should cover:

- the overall system architecture. Describe the process from input until output
- system design - describe each component or module that you mentioned in the system architecture
- focus on components' functionalities
- you may mention in a separate section used technologies (but do not describe technologies themselves, it should be done in Background)

Avoid citations / explanation of others' work in this section.

## 5 Evaluation

Another important chapter of your thesis. After writing what did you do and how, you need to evaluate that your system improves something.

Present the used testing methodology. One should be able to repeat your experiments.

Which systems did you use, did you repeat the experiments, what did you measure, how ... If you need more sections, consider creating a new chapter - Testing methodology.

Present the results. Explain insights. Explain outliers!

You have to prove that your work improved / solve the problems mentioned in introduction and motivation.

## **6 Discussion and Related Work**

### **6.1 Related work**

Compare your work with others. Show why your work differs than others. Refer to some results from the evaluation.

After each work or a group of work, you need to state their weaknesses and how did you tackle them.

### **6.2 Limitations**

You may want to expose what you still did not do and what is not covered.

### **6.3 Threats to validity**

You may want to expose threats to validity (for which values your methods/system is not applicable).

## 7 Conclusion and future work

Summarize what did you do in one paragraph - e.g., you built a system that does ... and improves this and that.

State the contributions. How your work improves something, how your work solves problems. Use some import numbers.

Future work. State what can be further done.

## **Bibliography**

## 8 Appendix A

You may want to describe details about:

- configuration files
- deployment
- log files