



University of Zurich
Department of Informatics

ai lab
Robotics and Perception Group

Hans Muster

RPG Thesis Template

Semester Thesis

Robotics and Perception Lab
University of Zurich

Supervision

First Supervisor
Second Supervisor

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Abstract

Compress the introduction in a few key sentences. No more than half a page.

Chapter 1

Introduction

Describe the problem and the motivation for this research.

1.1 Related Work

Describe the current state of the art. Provide all necessary citations.

Chapter 2

Approach

Describe the main steps in your algorithm. An illustration is always helpful.

Here are some L^AT_EX tips:

2.1 Headings

Your report can be structured using several different types of headings. Use the commands `\chapter{.}`, `\section{.}`, `\subsection{.}`, and `\subsubsection{.}`. Use the asterisk symbol `*` to suppress numbering of a certain heading if necessary, for example, `\section*{.}`.

2.2 References

References to literature are included using the command `\cite{.}`. For example [?, ?]. Your references must be entered in the file `bibliography.bib`. Making changes or adding new references in the bibliography file can be done manually or by using specialized software such as *JabRef* which is free of charge. Cross-referencing within the text is easily done using `\label{.}` and `\ref{.}`. For example, this paragraph is part of chapter 2; more specifically on page 2.

2.3 Writing Equations

The most common way to include equations is using the `equation` environment. Use `\eqref{.}` to reference an equation, e.g. (2.1).

$$C(\mathbf{x}) = \frac{1}{2} \sum_{i \in \mathcal{I}} \sum_{k \in \mathcal{K}_i} \mathbf{e}_{i,k}(\mathbf{x})^T \mathbf{W}_{i,k} \mathbf{e}_{i,k}(\mathbf{x})$$
$$\hat{\mathbf{x}}^{LS} = \operatorname{argmin}_{\mathbf{x}} C(\mathbf{x}),$$
(2.1)

$$\mathbf{T}_i = \begin{bmatrix} \mathbf{R}_i & \mathbf{p}_i \\ 0 & 1 \end{bmatrix} \quad \text{with} \quad \mathbf{R}_i \in SO(3), \quad \mathbf{p} \in \mathbb{R}^3.$$
(2.2)

2.4 Including Graphics

The easiest way to include figures in your document is to use pdf figures if you use `pdflatex` to compile. Figure 2.1 was created with the use of the open source program `ipe`.

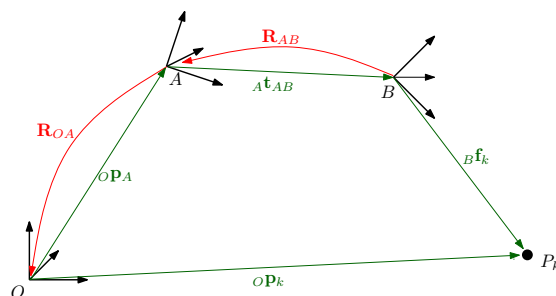


Figure 2.1: Example of a figure.

2.5 Including Code in your Document

You may include samples from your Matlab code using the `lstlistings` environment, for example

Listing 2.1: Matlab Example

```
% Evaluate y = 2x
for i = 1:length(x)

    y(i) = 2*x(i);

end
```

Listing 2.2: C++ Example

```
% sum all elements in a list
int sum=0;
for(list<int>::iterator it=mylist.begin(); it!=mylist.end(); ++it)
    sum += *it;
```

Chapter 3

Results

Provide numerical results, plots and timings. Interpret the data.

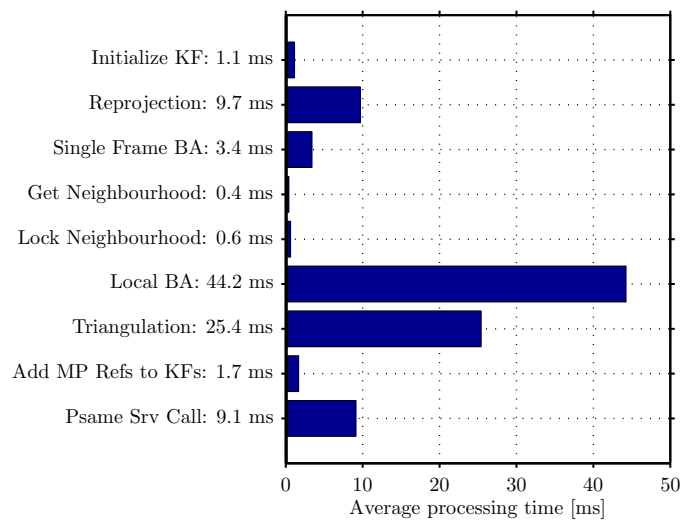


Figure 3.1: Example of a figure.

Chapter 4

Discussion

Explain both, the advantages and limitations of your approach.

4.1 Future Work

How would you extend the work? Can you propose another approach?

Appendix A

Something

In the appendix you can provide some more data, a tutorial on how to run your code, a detailed proof etc.



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Supervision:

First Supervisor

Second Supervisor

Student:

Name: Hans Muster

E-mail: muster@student.ethz.ch

Legi-Nr.: 97-906-739

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