Robot Vision

- Automation and control -

Project Report

Group 832

Aalborg University
Electronics and IT

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Here you can write something about which tools and software you have used for typesetting the document, running simulations and creating figures. If you do not know what to write, either leave this page blank or have a look at the colophon in some of your books.

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AALBORG UNIVERSITY
STUDENT REPORT

Title:
Lego Brickszzz

Theme:
Robot Vision

Project Period:
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Project Group:
Group: 832

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April 5, 2016

Abstract:

Here is the abstract

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AALBORG UNIVERSITET
STUDENTERRAPPORT

Titel:
LEgo Brickszzz

Tema:
Robot Vision

Projektperiode:
Spring 2016

Projektgruppe:
Group: 832

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Oplagstal: 1

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Afleveringsdato:
5. april 2016

Abstract:

Her er resuméet

Rapportens indhold er frit tilgængeligt, men offentliggørelse (med kildeangivelse) må kun ske efter aftale med forfatterne.

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I think this word is mispelled 16
Figure: We need a figure right here! 16

Preface

Here is the preface. You should put your signatures at the end of the preface.

Aalborg University, April 5, 2016

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Chapter 1

Introduction

Assume that you work in a company producing Simpson figures made by Dublo brucks.

1. The figures come in two sizes. One size consisting of 3x1 (or 2x1 for Maggie) Dublo bricks and one consists of 3x4 (or 2x4 for Maggie) brick.

2. A customer can order a set of figures

The Dublo bricks are located randomly (but not overlapping) on a table next to a robot.

1. A camera is located above the table so that all the bricks are within the view of the camera.

2. Your task is to design a system which can produce the Simpson figures.

Figure 1.1: A illustration of the simpsons figures with Lego Duplo Bricks

This involves among other things:

1. Identifying which bricks are located on the table.

2. Identifying the location of the bricks (e.g. the location of a black Dublo brick needed to build Homer)

3. Determine the associated cost of each solution and the cheapest solutions.
4. Grasping the bricks by means on a robot.
5. Mounting the bricks on a plate or on top of other bricks
6. Selecting the sequence in which you want to pick/place the bricks and build the figures

Chapter 2

Structure

The structure of....

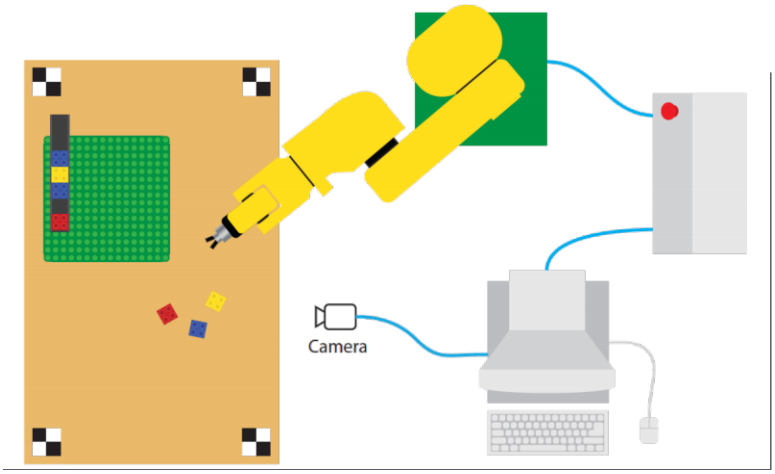


Figure 2.1: A illustration of the robot Cell Design

Chapter 3

Verification

Our verification.

Chapter 4

Simulation

Our simulations.

4.1 Drone model

4.2 Controller

4.3 V-Rep

4.4 Drone in real life (real data)

Chapter 5

Discussion

Our discussion.

Chapter 6

Conclusion

Our conclusion.

Bibliography

[1] Lars Madsen. *Introduktion til LaTeX*. http://www.imf.au.dk/system/latex/bog/. 2010.

[2] Frank Mittelbach. *The LATEX companion*. 2. ed. Addison-Wesley, 2005.

[3] Tobias Oetiker. *The Not So Short A Introduction to LaTeX2e*. http://tobi.oetiker.ch/lshort/lshort.pdf. 2010.

Appendix A

Appendix LaTeX Tips

A.1 Example 1

You can also have examples in your document such as in example A.1.

Example A.1 (An Example of an Example)
Here is an example with some math

$$0 = \exp(i\pi) + 1 \,. \tag{A.1}$$

You can adjust the colour and the line width in the `macros.tex` file.

A.2 How Does Sections, Subsections, and Subsections Look?

Well, like this

A.2.1 This is a Subsection

and this

This is a Subsubsection

and this.

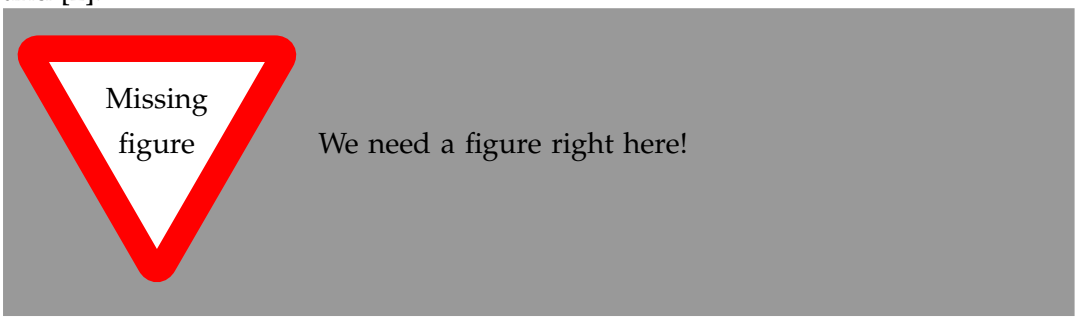
A Paragraph You can also use paragraph titles which look like this.

A Subparagraph Moreover, you can also use subparagraph titles which look like this. They have a small indentation as opposed to the paragraph titles.

Is it possible to ad subsubparagraph?

I think that a summary of this exciting chapter should be added.

A.3 Example 2

I think this word is mis-pelled

Here is chapter 2. If you want to leearn more about LaTeX 2_ε, have a look at [1], [3] and [2].