Master's Thesis

Creation of a LaTeX Template for Students to use for their Thesis

Your Name

March 10, 2022

Submitted to the University of Freiburg
IMTEK – Department of Microsystems Engineering
Laboratory for Electrical Instrumentation and Embedded Systems

universität freiburg

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Supervior	M.Sc. Max Doe, IMTEK – Department of Microsystems Engineering Laboratory for Electrical Instrumentation and Embedded Systems
Declaration	I hereby declare, that I am the sole author and composer of this Thesis and that no other sources or learning aids, other than those listed, have been used. Furthermore, I declare that I have acknowledged the work of others by providing detailed references of said work. I hereby also declare, that my Thesis has not been prepared for another examination or assignment, either wholly or excerpts thereof.

Place, Date

Signature

Abstract

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Zusammenfassung

Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext“ oder „Huardest gefburn“? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein Blindtext sollte möglichst viele verschiedene Buchstaben enthalten und in der Originalsprache gesetzt sein. Er muss keinen Sinn ergeben, sollte aber lesbar sein. Fremdsprachige Texte wie „Lorem ipsum“ dienen nicht dem eigentlichen Zweck, da sie eine falsche Anmutung vermitteln.

Das hier ist der zweite Absatz. Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext“ oder „Huardest gefburn“? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein Blindtext sollte möglichst viele verschiedene Buchstaben enthalten und in der Originalsprache gesetzt sein. Er muss keinen Sinn ergeben, sollte aber lesbar sein. Fremdsprachige Texte wie „Lorem ipsum“ dienen nicht dem eigentlichen Zweck, da sie eine falsche Anmutung vermitteln.

Und nun folgt – ob man es glaubt oder nicht – der dritte Absatz. Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext“ oder „Huardest gefburn“? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein

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Nach diesem vierten Absatz beginnen wir eine neue Zählung. Dies hier ist ein Blindtext zum Testen von Textausgaben. Wer diesen Text liest, ist selbst schuld. Der Text gibt lediglich den Grauwert der Schrift an. Ist das wirklich so? Ist es gleichgültig, ob ich schreibe: „Dies ist ein Blindtext“ oder „Huardest gefburn“? Kjift – mitnichten! Ein Blindtext bietet mir wichtige Informationen. An ihm messe ich die Lesbarkeit einer Schrift, ihre Anmutung, wie harmonisch die Figuren zueinander stehen und prüfe, wie breit oder schmal sie läuft. Ein Blindtext sollte möglichst viele verschiedene Buchstaben enthalten und in der Originalsprache gesetzt sein. Er muss keinen Sinn ergeben, sollte aber lesbar sein. Fremdsprachige Texte wie „Lorem ipsum“ dienen nicht dem eigentlichen Zweck, da sie eine falsche Anmutung vermitteln.

Contents

Symbol Definitions

Symbol	Description	Unit
P	Energy consumption	kW
π	Geometrical value	-
h	Height	m
A	Geometrical value	-
A	Geometrical value	-
B	Height	m
B	Height	m
C	Energy consumption	kW
C	Energy consumption	kW
D	Geometrical value	-
D	Geometrical value	-
E	Height	m
E	Height	m
F	Energy consumption	kW
F	Energy consumption	kW
G	Geometrical value	-
G	Geometrical value	-
H	Height	m
H	Height	m
I	Energy consumption	kW
I	Energy consumption	kW
J	Geometrical value	-
J	Geometrical value	-
K	Height	m
K	Height	m
L	Energy consumption	kW
L	Energy consumption	kW

L	Energy consumption	kW
L	Energy consumption	kW

Acronyms

Acronyms	Description
Abbvz.	Abbildungsverzeichnis
Abbvz.	Abbildungsverzeichnis
Abbvz.	Abbildungsverzeichnis
Abbvz.	Abbildungsverzeichnis
CD	Compact Disk
CD	Compact Disk
CD	Compact Disk
CD	Compact Disk
DIN	Deutsches Institut für Normung
DIN	Deutsches Institut für Normung
DIN	Deutsches Institut für Normung
DIN	Deutsches Institut für Normung
DIN	Deutsches Institut für Normung
ISO	Internationale Organisation für Normung
ISO	Internationale Organisation für Normung
ISO	Internationale Organisation für Normung
ISO	Internationale Organisation für Normung
ISO	Internationale Organisation für Normung
LAN	Local Area Network
LAN	Local Area Network
LAN	Local Area Network
LAN	Local Area Network
LAN	Local Area Network
SAS	Serial Attached SCSI
SAS	Serial Attached SCSI
SAS	Serial Attached SCSI
SAS	Serial Attached SCSI

SAS	Serial Attached SCSI
VRBD	Violet-Red-Bile-Glucose-Agar
VRBD	Violet-Red-Bile-Glucose-Agar
VRBD	Violet-Red-Bile-Glucose-Agar
VRBD	Violet-Red-Bile-Glucose-Agar

Figure Index

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Chapter 1

Introduction

This chapter outlines the motivation for this thesis in the field of electrical engineering. Possible problems that could be encountered during the development and evaluation process are also discussed. Here:

1.1 Motivation

This Thesis targets a key topic of electrical engineering [1]. SI-Units can be written its text as 50 ms. π Violet-Red-Bile-Glucose-Agar (VRBD) Biofouling

1.2 Problem and Research Questions

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Chapter 2

Theoretical Background

This chapter provides background knowledge to understand the concepts in the thesis.

2.1 Theoretical Topic

Text..

2.2 Examples for your document

2.2.1 Examble of Glossary

Biofouling

2.2.2 Example of Symbols

Examples of the use of symbols in a document. Symbols and also acronyms are introduced in a table at the begin of the document. To jump to this table, simply click on the symbol or acronym, it provides a hyperlink to the table.
h P A B C D E F G H I J K L A B C D E F G H I J K L L L

2.2.3 Example of Acronmys

First use of the Acronym Violet-Red-Bile-Glucose-Agar (VRBD) prints long version with short version in brackets, second and following use will print only the short version: VRBD

2.2.4 Special characters

Registered: ®
Copyright: ©
Trademark: ™

Großzügig Gréànauôbl Ç.
!"§/()=?öäüß-.,<>

2.2.5 Example of lists

- List entries start with the `\item` command!
- Individual entries are indicated with a black dot, a so-called bullet.
- The text in the entries may be of any length.

2.2.6 blind text

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2.2.7 Example of an Equation

$$\begin{bmatrix} {}^{c}x_{\overline{p}} \\ {}^{c}y_{\overline{p}} \\ 1 \end{bmatrix} = \underbrace{\begin{bmatrix} c & 0 & 0 & 0 \\ 0 & c & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}}_{\text{projection matrix}} \begin{bmatrix} {}^{k}X_{p} \\ {}^{k}Y_{p} \\ {}^{k}Z_{p} \\ 1 \end{bmatrix} = \begin{bmatrix} c \cdot {}^{k}X_{p} \\ c \cdot {}^{k}Y_{p} \\ {}^{k}Z_{p} \end{bmatrix} = \begin{bmatrix} {}^{k}X_{p} \\ c\frac{{}^{k}X_{p}}{{}^{k}Z_{p}} \\ {}^{k}Y_{p} \\ c\frac{{}^{k}Y_{p}}{{}^{k}Z_{p}} \\ 1 \end{bmatrix} \tag{2.1}$$

2.2.8 Example of Figure

2.2.9 Example of Reference

Reference Figure 2.1 and Equation 2.1. Reference source [3]. Also check out code 2.1.

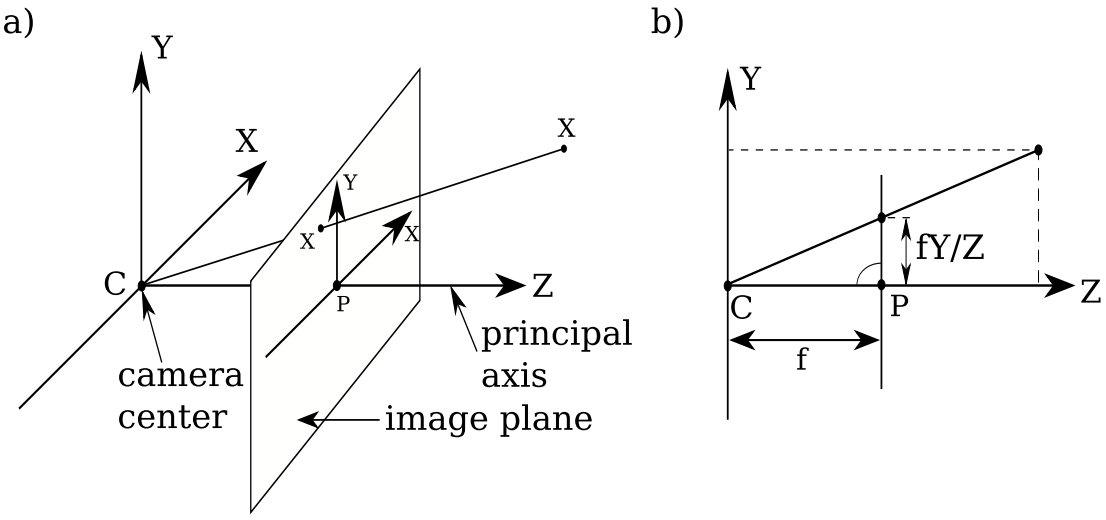

Figure 2.1: Mathematical model of a pinhole camera [2].

2.2.10 Example of a table

Table 2.1: Datasets for stereoscopic 3D reconstruction with ground-truth information.

	Dynamic	Truth Type	Remarks
Tsukuba	–	Manual	The first data with GT
Middlebury	–	Structured Light	Most famous 3D data with GT
Hamlyn	*X*	partly available	Robotic surgery
Kitti	*X*	Lidar	Autonomous driving
EndoVis	*X*	Structured Light	Robotic surgery

* This is an example footnote for the table.

2.2.11 Example of inserted code

You can use the package listings to import code directly from files.

Listing 2.1: Descriptive Caption Text

```
1 // This cuda kernel adds two vectors together and saves it into a ↩
    third one
2 __global__ void vectorAdd(const int* srcA, const int* srcB, const ↩
    int vecSize, int* dst) {
3     // Get the id of the current thread
4     const int idx = blockIdx.x * blockDim.x + threadIdx.x;
5
```

```
6     // Ignore all threads with an id larger or equal to vecSize to ↩
          avoid running out of bound
7     if (idx < vecSize) {
8         // Add vectors srcA and arcB together and write it into the ↩
              vector dst
9         dst[idx] = srcA[idx] + srcB[idx];
10    }
11 }
```

In addition to this, it is also possible to directly input your code in LaTeX.

Listing 2.2: Another Descriptive Caption Text

```
1     // Some example
2     callFunction();
```

2.2.12 Example of ToDo Notes

With `\todo{Example ToDo note}` you can define your own ToDo notes.

Example ToDo note

We prefer the inline ToDo notes, but you can also use floating ones by using the command `\todo[noinline]{Example ToDo note}`.

You can add your ToDos to the Table of Contents with `\todototoc`, or you can print a separate list of ToDo notes with `\listoftodos`. If you prefer, you can also just color your text.

2.2.13 Coloring text

You can color text by using predefined commands such as `\red{text}`. Colors we provide are as follows: **red**, green, blue, and orange. Also, feel free to make up your own colors and add them to the `settings+/variables.tex` file. This can be done in a few easy steps:

- Name a color and define it (see `https://latexcolor.com/` for ideas)
  `\definecolor{dollarbill}{rgb}{0.52, 0.73, 0.4}`
- Optional: Create a shorthand command with the new color
  `\newcommand\myColor[1]{\textcolor{dollarbill}{\textbf{#1}}}`
- Done! Color a text with the new color
  `\textcolor{dollarbill}{Text}`

or via shorthand

```
\myColor{Text}
```

Chapter 3

State of the Art

This chapter compares the current state of the art and the work done in this thesis. Note Quotations always end before a full stop, question mark, comma, etc... like so: ”I know”, she said.

3.1 SotA Topic

Text

Chapter 4

Implementation

This chapter contains a description of how the implemented algorithm works.

4.1 Implementation Topic

Text

Chapter 5

Experimental Setup

This chapter contains an explanation of how the experimental setup was done, what parameters had to be controlled, and the equipment used.

5.1 Experimental Setup Part

Text

Chapter 6

Results and Discussion

In this chapter, the results of the thesis are presented and evaluated as well as, the approach of this thesis.

6.1 Analysis or Evaluation of Something

Text

Chapter 7

Summary

In this chapter, there is a short summary? results of the thesis are presented and evaluated as well as, the approach of this thesis.

7.1 Analysis or Evaluation of Something

Text

Chapter 8

Conclusion

In this chapter, a conclusion is made and the thesis is roughly summarised.

8.1 Summary

Text

8.2 Outlook

Text

Chapter 9

Acknowledgments

Always say 'thank you', to the people who support you.

Bibliography

[1] S. J. Rupitsch, *Piezoelectric sensors and actuators : fundamentals and applications*. 2019, ISBN: 978-3-662-57532-1. DOI: 10.1007/978-3-662-57534-5.

[2] R. Hartley and A. Zisserman, *Multiple View Geometry in Computer Vision*, 2nd ed. Cambridge University Press, 2004. DOI: 10.1017/CBO9780511811685.

[3] E. Trucco and A. Verri, *Introductory Techniques for 3-D Computer Vision*. Prentice Hall PTR, 1998, ISBN: 0132611082.

Appendix A

Stuff that was not important or too much for the thesis but is still important or complements the presented results.

A.1 Section A

A.1.1 Subsection B

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Appendix B

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Glossary

Application Service Providing Der Application Service Provider (Abkürzung ASP) bzw. Anwendungsdienstleister ist ein Dienstleister, der eine Anwendung (z. B. ein ERP-System) zum Informationsaustausch über ein öffentliches Netz (z. B. Internet) oder über ein privates Datennetz anbietet. Der ASP kümmert sich um die gesamte Administration, wie Datensicherung, das Einspielen von Patches usw. Anders als beim Applikations-Hosting ist Teil der ASP-Dienstleistung auch ein Service (z.B. Benutzerbetreuung) um die Anwendung herum.

Berlin Berlin ist die Bundeshauptstadt der Bundesrepublik Deutschland und zugleich eines ihrer Länder. Die Stadt Berlin ist mit über 3,4 Millionen Einwohnern die bevölkerungsreichste und mit 892 Quadratkilometern die flächengrößte Gemeinde Deutschlands sowie nach Einwohnern die zweitgrößte der Europäischen Union. Sie bildet das Zentrum der Metropolregion Berlin/Brandenburg (6 Millionen Einw.) und der Agglomeration Berlin (4,4 Millionen Einw.). Der Stadtstaat unterteilt sich in zwölf Bezirke. Neben den Flüssen Spree und Havel befinden sich im Stadtgebiet kleinere Fließgewässer sowie zahlreiche Seen und Wälder.

Biofouling Some description. 1, 3

Outsourcing Outsourcing bzw. Auslagerung bezeichnet in der Ökonomie die Abgabe von Unternehmensaufgaben und -strukturen an externe oder interne Dienstleister. Es ist eine spezielle Form des Fremdbezugs von bisher intern erbrachter Leistung, wobei Verträge die Dauer und den Gegenstand der Leistung fixieren. Das grenzt Outsourcing von sonstigen Partnerschaften ab.