

# Design of a dorsal vascular scanner.

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Based on near infra-red imaging techniques



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Submitted to the Department of Electrical Engineering at the University of Cape Town in  
partial fulfilment of the academic requirements for a Bachelor of Science degree in  
Mechatronics

**August 14, 2014**



## Declaration

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1. I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.
2. I have used the IEEE convention for citation and referencing. Each contribution to, and quotation in, this report from the work(s) of other people has been attributed, and has been cited and referenced.
3. This report is my own work.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as their own work or part thereof.

Signature:.....

J. C. Forté

Date:.....

## Acknowledgments

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## Abstract

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- Open the **Project Report Template.tex** file and carefully follow the comments (starting with %).
- Process the file with **pdflatex**, using other processors may need you to change some features such as graphics types.
- Note the files included in the **Project Report Template.tex** (with the .tex extension excluded). You can open these files separately and modify their contents or create new ones.
- Contact the latex manual for more features in your document such as equations, subfigures, footnotes, subscripts & superscripts, special characters etc.
- I recommend using the **kile** latex IDE, as it is simple to use.

# Contents

# List of Figures

# List of Tables



# Chapter 1

## Introduction

### 1.1 Background to the study

A very brief background to your area of research. Start off with a general introduction to the area and then narrow it down to your focus area. Used to set the scene [?].

### 1.2 Objectives of this study

#### 1.2.1 Problems to be investigated

Description of the main questions to be investigated in this study.

#### 1.2.2 Purpose of the study

Give the significance of investigating these problems. It must be obvious why you are doing this study and why it is relevant.

### 1.3 Scope and Limitations

Scope indicates to the reader what has and has not been included in the study. Limitations tell the reader what factors influenced the study such as sample size, time etc. It is not a section for excuses as to why your project may or may not have worked.

## 1.4 Plan of development

Here you tell the reader how your report has been organised and what is included in each chapter.

**I recommend that you write this section last. You can then tailor it to your report.**

## Chapter 2

# Literature Review

In order to get an understanding of the concepts and best practices in the field of vascular biometrics, it is important to review the available literature on the topic.

### 2.1 Biometrics as a Verification Technique

Over the past few decades there has been a gradual shift into the virtual domain. As more people go online there becomes a greater incentive for companies to provide online services. However this expansion into the digital domain comes at a cost. As individuals add more and more services to their virtual network they become bogged down in keeping up with passwords. While a common method is to use the same password for all your online accounts this is usually not recommended because a vulnerability in one service can compromise the entire system. This can be even more detrimental if the password is also associated with a banking service.

## Chapter 3

# Methodology

This is what I did to test and confirm my hypothesis.

You may want to split this chapter into sub chapters depending on your design. I suggest you change the title to something more specific to your project.

This is where you describe your design process in detail, from component/device selection to actual design implementation, to how you tested your system. Remember detail is important in technical writing. Do not just write I used a computer give the computer specifications or the oscilloscopes part number. Describe the system in enough detail so that someone else can replicate your design as well as your testing methodology.

If you use or design code for your system, represent it as flow diagrams in text.

# Chapter 4

## Results

These are the results I found from my investigation.

Present your results in a suitable format using tables and graphs where necessary. Remember to refer to them in text and caption them properly.

### 4.1 Simulation Results

### 4.2 Experimental Results

## Chapter 5

# Discussion

Here is what the results mean and how they tie to existing literature...

Discuss the relevance of your results and how they fit into the theoretical work you described in your literature review.

## Chapter 6

# Conclusions

These are the conclusions from the investigation and how the investigation changes things in this field or contributes to current knowledge...

Draw suitable and intelligent conclusions from your results and subsequent discussion.

## Chapter 7

# Recommendations

Make sensible recommendations for further work.



Use the IEEE numbered reference style for referencing your work as shown in your thesis guidelines. Please remember that the majority of your referenced work should be from journal articles, technical reports and books not online sources such as Wikipedia.

# Bibliography

- [1] M. S. Tsoeu and M. Braae, “Control Systems,” *IEEE*, **vol. 34(3)**, pp. 123-129, 2011.
- [2] J. C. Tapson, *Instrumentation*, UCT Press, Cape Town, 2010.

## Appendix A

# Additional Files and Schematics

Add any information here that you would like to have in your project but is not necessary in the main text. Remember to refer to it in the main text. Separate your appendices based on what they are for example. Equation derivations in Appendix A and code in Appendix B etc.

## Appendix B

### Addenda

#### B.1 Ethics Forms