UNIVERSITY OF SOUTHAMPTON

FACULTY OF PHYSICAL AND APPLIED SCIENCES

Electronics and Computer Science

Two Dimensional Stereoscopic Mapping Robot

by

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Technical Report

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ABSTRACT

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TWO DIMENSIONAL STEREOSCOPIC MAPPING ROBOT

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This paper describes the research, designing and building of a stereoscopic mapping robot. Mapping robots usually utilise Infra-red or laser range finders to do the distance calculations. By using two cameras, distances to objects can be calculated. The end goal is to build up an occupancy map which shows the state of an explored area as either unknown, free or occupied.

Contents

List of Figures

List of Tables

Listings

Nomenclature

w	The weight vector

Acknowledgements

Thanks to no one.

To ...

Chapter 1

Introduction

The Introduction to my Report ...

The initial idea of the project was taken from PirobotGoebel (2012).

Chapter 2

Research

The research done for this project is split down into three sections:

1. Hardware
2. Software, broken down into:
   (a) Firmware
   (b) Algorithms

Both the firmware and hardware research will be discussed in this section, but the algorithms research will be discussed in Chapter 4.

2.1 Hardware

2.2 Firmware

Chapter 3

Initial Hardware Development

The Hardware Development part to my Report ...

Chapter 4

Investigation into Vision Algorithms

The Stereo vision algorithms sections to my Report ...

Chapter 5

Conclusions

It works.

Appendix A

Stuff

The following gets in the way of the text....

References

Patrick Goebel. Robot cartography: Ros + slam, 2012.