UNIVERSITY OF BIELEFELD

BACHELOR THESIS

Efficient Target Identification during Haptic Search in a Three-dimensional Environment

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Declaration of Authorship

I, Julian Nowainski, declare that this thesis titled, "Efficient Target Identification during Haptic Search in a Three-dimensional Environment" and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
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- I have acknowledged all main sources of help.
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Abstract

Faculty of Technology
CITEC

Bachelor of Science

Efficient Target Identification during Haptic Search in a Three-dimensional Environment

by Julian Nowainski

Contents

Chapter 1

Introduction

Hier eine Introduction mit der zugrunde liegenden Motivation und den daraus abgeleiteten Zielen für meine Bachelorarbeit

1.1 Motivation

1.2 Goals

Chapter 2

Haptic Search Experiment

In diesem Kapitel wird der Versuch, die benutzte Hardware , und das komplette Setting von der Aufnahme beschrieben

2.1 Haptic Search Experiment

2.2 Hardware

2.2.1 Modular Haptic Stimulus Board

2.2.2 Glove

2.2.3 Vicon

2.3 Setting

Chapter 3

Data Generation and Analysis

Dieses Kapitel beinhaltet den größten Teil meiner Arbeit. Alles zum Nachbearbeiten der Daten kommt in dieses Kapitel. Frage zur Struktur, den Forderungen, das Aufnehmen mit MSS und ROS, posptrocessing von Vicon, Synchronisiserung der Vicon Daten mit ROS und das halb-automatische Generieren von labeln sowie eine erste Analyse der fertigen Daten.

3.1 Data Structure and Requirements

3.2 Recording

3.3 Postprocessing Vicon Data

3.4 Synchronizing Data and Generating Labels

3.4.1 Synchronizing Glove Data and Vicon Data

3.4.2 Generating Labels

3.5 Analyzing the Data

Chapter 4

Model and Training

Hier muss ich mir noch Gedanken über das Model machen, auch was das Preprocessing angeht. In diesem Kapitel wird wahrscheinlich noch einiges umgebaut

4.1 Model

4.2 Preprocessing

4.3 Training

Chapter 5

Evaluation

Evaluation der Ergebnisse vom Training mit Visualisiserung

Chapter 6

Discussion

Weiterführende Diskusion und Fazit über die Studie