User Manual

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1 Problem Definition

What physical motions are natural, effortless and easy in order to control a computer or other digital device?

Questions of this nature can be answered using the *Can't Touch This* platform. *Can't Touch This* aim to be a general platform for researchers that would like to conduct research in this area. We believe that *Can't Touch This* allows researchers to quickly identifty what motions are effective, and which aren't. Giving researchers the opportunity to conduct research improves the chance for touchless control of computers only seen in futuristic movies and tv shows.

1.1 Motivation

At the start of this minor, students were given a choice in the subject of the research. Mister Hani introduced us to a series of subjects, of which the LeapMotion project was the most interesting to us. The idea of the LeapMotion was to create or extend existing software to enable people to control a computer without touching any peripherals.

1.2 Background information

The events that lead up to this question came from the medical industry. When surgeons perform surgeries, they often have to look through medical files, for example, an X-ray scan. This is difficult, as the surgeons most likely has dirty hands, and can therefore not touch any computer peripheral.

Instead of this, touchless control of the computer may offer a solution.

The use of assistants is a solution to the problem, but this requires another human, and personnel in the medical world is scarce. We therefore want to replace these human assistants with a device that allows surgeons to control the computer without touch any peripherals.

The people that are most interested in the results are software engineers, surgeons and hospital managers.

2 Installation Guide

2.1 Requirements

- A computer with the Windows (7+), OSX (10.7+, Lion+) or Linux (kernel 2.6.18+) operating system
- An installation of the LeapMotion SDK
- An installation of the Rust programming language
- The physical LeapMotion device itself

2.2 Software Dependencies

The *Can't Touch This* platform is written using the Rust programming language. This means that the operating system that the platform will run on must support the Rust language. Fortunately, Rust runs on all popular operating systems today, shown above in the list of requirements. An up-to-date list of all supported versions can be found on the Rust website. Additonally, the *Can't Touch This* platform requires the LeapMotion SDK to provide all necessary sensor data. Just like the Rust programming language, the LeapMotion SDK can be installed on all platforms.

2.3 External resources

Additional software required to run the platform consists of the following items:
Again, fortunately, these are all installed with the platform itself, and therefore requires no extra software.

2.4 External development tools

In order for other to continue developing the *Can't Touch This* platform, they will need to install the following tools:

3 Known Issues

- *Can't Touch This* may crash upon running the release version of the exectable