**MSc. in Computing**

**Practicum Approval Form**

# Section 1: Student Details

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| Project Title: | Security and Privacy of mobile Health(mHealth) |
| Student ID: | 18210393 |
| Student name: | Akihisa Nishikawa |
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| Chosen major: | Security and Forensics |
| Supervisor | Renaat Verbruggen |
| Date of Submission |  |

# Section 2: About your Practicum

Please answer all questions below. Please pay special attention to the word counts in all cases.

**What is the topic of your proposed practicum? (100 words)**

The objective of this paper is, first we examine how mHealth applications and devices work under current regulations such as HIPAA, and GDPR. We evaluate the privacy and security requirements according to those regulations. Then we will discuss and give some possible solutions for following issues. 1. Security of communication between other mHealth device, application, or cloud. 2. Data storage and processing them. 3. Clear Explanation for data usage. 4. User errors. Lastly, we will choose a fitness tracker that utilizes Bluetooth communication and analyse if the communication is encrypted or not.

**Please provide details of the papers you have read on this topic (details of 5 papers** expected).

1. A Taxonomy of mHealth Apps -- Security and Privacy Concerns

<https://ieeexplore.ieee.org/document/7070200>

1. Blockchain as an enabler for public mHealth solutions in South Africa

<https://ieeexplore.ieee.org/document/8102404>

1. Are mHealth Apps Secure? A Case Study

<https://ieeexplore.ieee.org/document/8377881/figures#figures>

1. Security of mobile health (mHealth) systems

<https://ieeexplore.ieee.org/document/7367689>

1. Security analysis of a mHealth app in Android: Problems and solutions

<https://ieeexplore.ieee.org/document/8210757>   
  
**How does your proposal relate to existing work on this topic described in these papers?** (200 words)

What are the research questions that you will attempt to answer? (200 words)

As for the topic, my foremost question that I will try to answer is that “Is the communication of the mHealth Application safe?”

Besides that, here is the list of small questions that I will attempt to answer

How are mHealth apps working under current regulations like General Data Protection Regulation (GDPR), Health Insurance Portability and Accountability Act (HIPAA)

What are the general current issues and possible issues in future and solutions?

Is communication among (sensor, cloud), devices, and app secured?

Are communications amongst mHealth using Bluetooth safe?

How will you explore these questions? (Please address the following points. Note that three or four sentences on each will suffice.)   
  
- What software and programming environment will you use?

We will use Wireshark for analysing traffic and packets of devices and applications. If the messages are encrypted or not

- What coding/development will you do?   
- What data will be used for your investigations?   
- Is this data currently available, it not, where will it come from?   
- What experiments do you expect to run?   
- What output do you expect to gather?   
- How will the results be evaluated?

Comparing the results with legal regulations and how it should fit