King Mongkut's University of Technology Thonburi

Industrial Training Report

Academic Year 2017

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B.Sc. Computer Science

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Executive Summary

This report describes the internship I undertook at Shibaura Institute of Technology. Shibaura Institute of Technology is a private university in Tokyo, Japan. The university has a close relationship with King Mongkut's University of Technology Thonburi. Undergoing the internship program is a requirement for all undergraduate Computer Science students in order to complete their degree successfully. The objective of internship program is to create a real work experience in an IT field for students and gain a useful knowledge through the task provided by the company.

This report presents the major tasks completed during my internship at Shibaura Institute of Technology which took place in my exchange program at the university. I was working closely with Prof. Hiroyuki Nakamura in the topic of computer accessibility. The main project during this internship was researching on various law and enforcement about computer accessibility. Then presented the outcome and ideas to the professor.

I had an opportunity to work with Prof. Nakamura, whom has abundant knowledge of accessibility and social science. I have acquired a knowledge related to accessibility and IT. I also learned a working ethics in Japanese lab. This program taught me on how review literature efficiently and put that knowledge to ideas. I must communicate and cooperate with the other Japanese students. So, I am now be able to work as a part of the international research group and put my skills into real use.

Acknowledgments

The internship opportunity I had with Shibaura Institute of Technology was a great chance for learning and professional development. Therefore, I consider myself as a very lucky individual as I chose to work in a Japanese laboratory I am also grateful for having a chance to meet so many wonderful people and professionals who led me through this internship period.

I express my deepest to Prof. Hiroyuki Nakamura, Professor in the school of Architecture and Civil Engineering for their careful advice and guidance which were extremely valuable for my study both theoretically and practically.

I choose this moment to acknowledge my advisor Asst.Prof.Dr. Chonlameth Arpnikanondt for his support throughout my exchange program and internship.

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Chapter 1: Introduction

1.1 Overview

An internship, which has to be carried out outside the university, is a part of the Computer Science curriculum of the School of Information Technology KMUTT. For me, this was a great opportunity to apply my knowledge in a practical environment and to increase my competences. I commence the report with my own objectives: the outcomes I hope to achieve from the internship. Then the report gives an overview of the internship activities that I worked on during my internship, from 30 January 2018 to 31 March 2018, at Shibaura Institute of Technology. My supervisor was Prof. Hiroyuki Nakamura[1], and my hours of work were from 10am – 6:00pm Monday to Friday.

The first part of the report offers an overview of the organization, then an outline of all the duties carried out during this time. I worked on one major project. This report focuses for the most part on the major project. The conclusions section provides a summary of key conclusions derived from my internship experience. Finally, based on my experience I offer recommendations to both the School of Information Technology and my internship provider (Shibaura Institute of Technology)

1.2 My Internship Objectives

I want to relate and apply the academic theory that I have learned at SIT and during my exchange program at Shibaura Institute of Technology to the work environment. Specifically, the following:

- Accessibility assessment
- Product design and interface design

I hope to have the opportunity to develop the following work-related skills:

- Data analysis
- Data collection

I wish to develop my interpersonal, or soft skills, to fit with the company's culture to help me work well with others by:

- Observing how Japanese people dress and speak in a workplace setting

- Observing how Japanese people interact with one another
- Practicing my ability to cope with change and adapt
- Developing a positive attitude towards tackling challenges and a willingness to take personal responsibility
- Cooperating with the professor and presenting my progress

Chapter 2: Internship Organization

2.1 Company Overview and Background of the Organization

Shibaura Institute of Technology (SIT) is a private university in Tokyo, Japan. The school is established in 1927 as Tokyo School of Industry and Commerce, later changed to the current name. SIT is using a "learning through practice" framework under multicultural environment to provide students with effective way of learning throughout the years. SIT now aims to foster scientists and engineers who can contribute to a rapid and sustainable growth of the international society with the good relationship with students around the world. There are three undergraduate schools at SIT:

- College of Engineering
- College of Systems Engineering and Science
- College of Engineering and Design

With over 250 laboratories spanned over three campuses and over 140 partnered universities. SIT is able to push forward great innovation and research to the global society.

SIT and King Mongkut's University of Technology have a great relationship which open windows of opportunity to students from both universities. For example, exchange program, research exchange program, and internship program.

2.2 Company Location

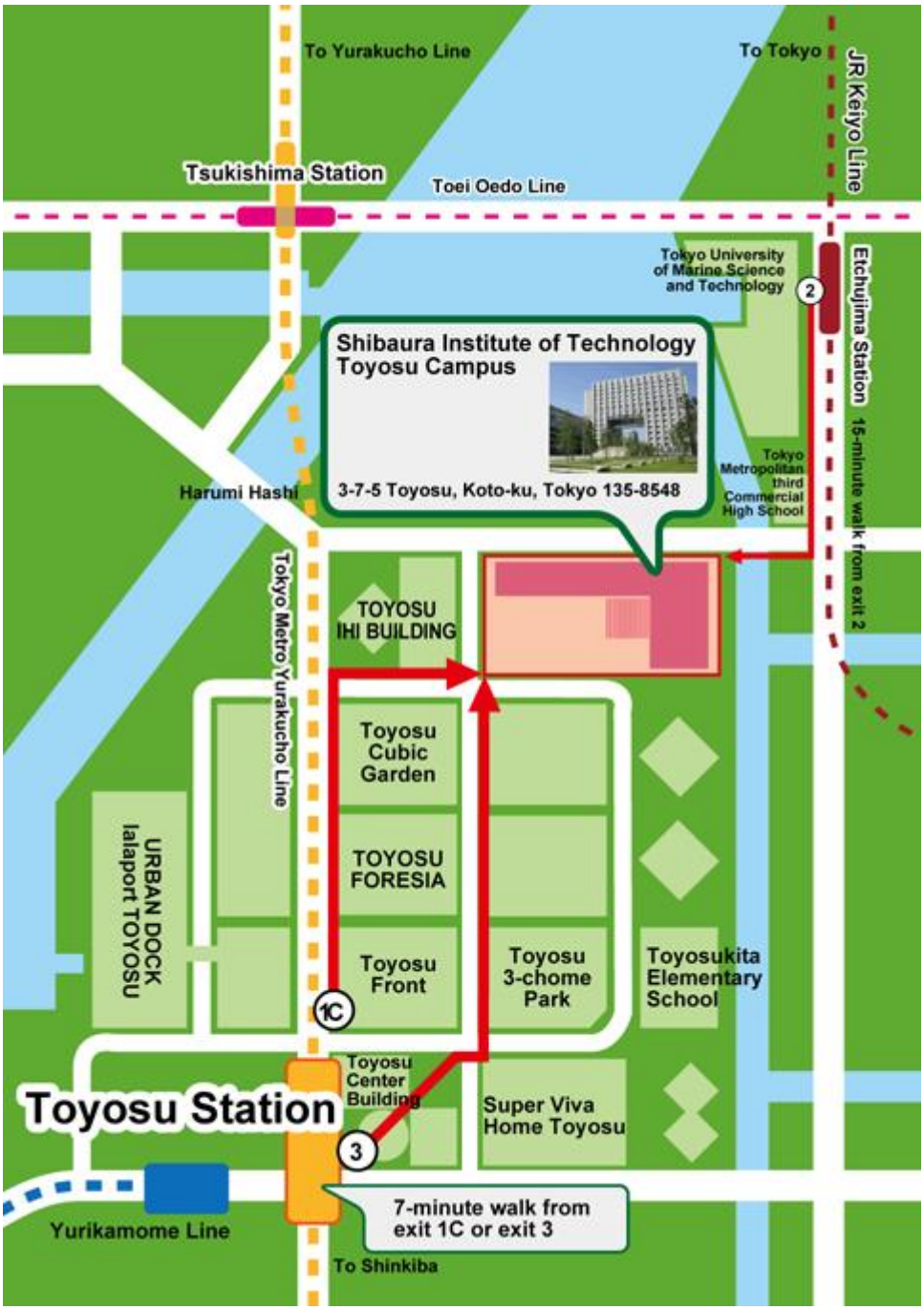


Figure 1: Shibaura Institute of Technology Toyosu Campus Map

2.3 Organization Structure

The present management structure of Shibaura Institute of Technology is as follows:

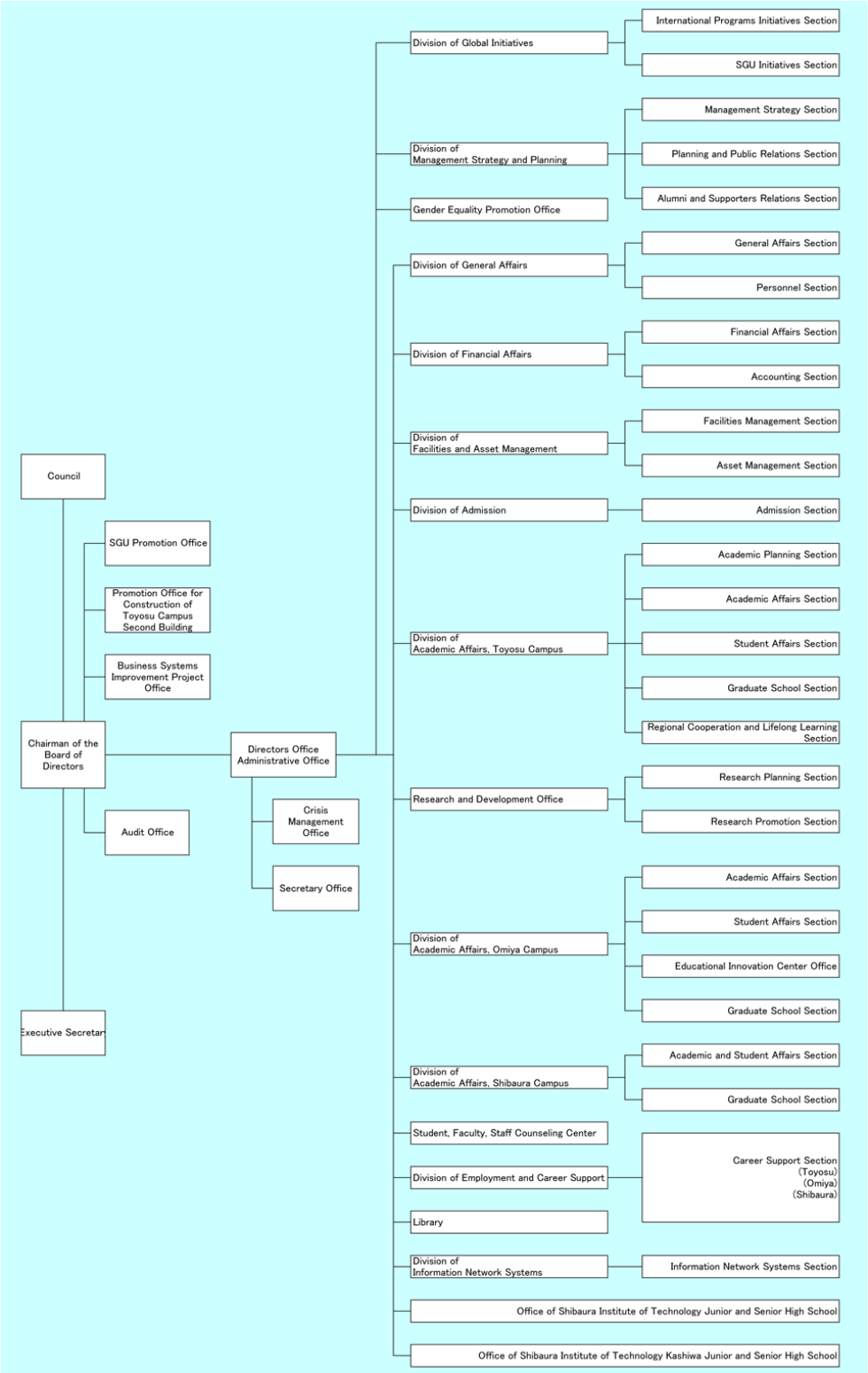


Figure 2: Shibaura Institute of Technology Organization Structure

Chapter 3: Tasks, Projects, and Activities

3.1 Internship Task Background

My tasks and assignments during this internship consisted of accessibilities law review and idea brainstorming. My responsibilities can be described as follows:

Accessibilities Law Review

- Read and understand the law about accessibility in both countries, Thailand and Japan.
- Read and understand the books about accessibility in a digital era.
- Summarize the documents in English language.
- Inform the professor about findings and describe how it relates to the development process of software.

Idea Brainstorm

- Come up with a new idea on how to include everyone in the design.
- Present a new idea with the professor and the laboratory friends.

3.2 Assignments

During the internship the professor assigned me to read documents and books as well as report to the professor with a short report.

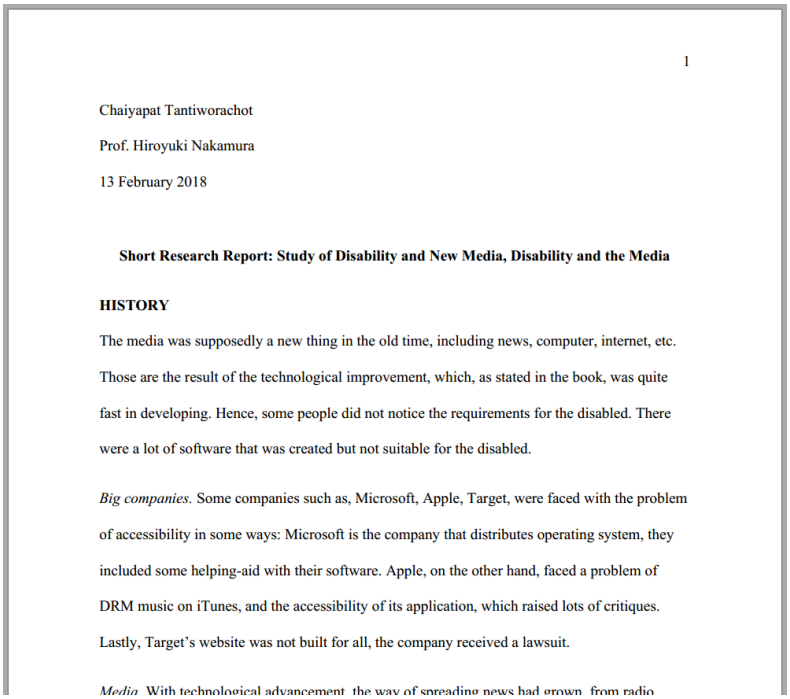
The cycle between each report are as follows:

- Meeting with the professor, update the progress from previous report.
- Tell the professor about the result from reading, for example, a way to implement games for non-disabled people to play to raise awareness.
- Decide on what topics/documents to read next.

For me, tackling the accessibility area was very new. The process in consulting with the professor and communicating with laboratory friends were very challenging. As the culture of Thailand and Japan are highly difference. Some concepts in accessibility documents look unfamiliar to Japanese people. There were three main section that we decided to study:

1. Study on “Disability and New Media” and “Disability and the Media” books.
2. Disability research in Thailand.
3. Statistical study on disabled population and trends of games for disabled people.

Figure 3.1: Studying on the first topic at lunch



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Chaiyapat Tantiworachot

Prof. Hiroyuki Nakamura

13 February 2018

Short Research Report: Study of Disability and New Media, Disability and the Media

HISTORY

The media was supposedly a new thing in the old time, including news, computer, internet, etc. Those are the result of the technological improvement, which, as stated in the book, was quite fast in developing. Hence, some people did not notice the requirements for the disabled. There were a lot of software that was created but not suitable for the disabled.

Big companies. Some companies such as, Microsoft, Apple, Target, were faced with the problem of accessibility in some ways: Microsoft is the company that distributes operating system, they included some helping-aid with their software. Apple, on the other hand, faced a problem of DRM music on iTunes, and the accessibility of its application, which raised lots of critiques. Lastly, Target's website was not built for all, the company received a lawsuit.

Media. With technological advancement, the way of spreading news had grown, from radio

Figure 3.2: First report example

Chapter 4: Conclusions

4.1 Internship Experience Summary

The past two months of my internship have been very instructive for me. Professor Hiroyuki Nakamura's laboratory at Shibaura Institute of Technology has offered me opportunities to learn and develop myself in many areas and achieve my training objectives. A lot of the activities that I have worked on during my internship were new to what I have studied in KMUTT. Participating and learning new skills, both hard and soft, has given me a chance to find out that I want to work in designing a software for everyone after I complete my degree.

4.2 Internship Personal Experience Summary

After completing my work placement, I learned a lot about working in international environment at Shibaura Institute of Technology. The word "accessibility" is wider than I thought. It has been a great experience as I have done so many things, but I do need to learn from my mistakes. I believe that I have developed a skillset for designing an inclusive software. I also learnt a lot about Japanese working culture. I would have not investigated this topic if I had not done this internship.

Chapter 5: Recommendations

5.1 Internship Recommendations for SIT

The part that I found most interesting during my research internship at Shibaura Institute of Technology is the field work. To focus on accessibility, Professor Hiroyuki Nakamura also conducted a simulated experience for his students, including me, to pretend to be blind, physically disabled, and digitally disabled. I would like to recommend our school to add more field work on accessibility. It will let the students learn more on this topic.

5.2 Recommendation for Internship Company

Researching at Shibaura Institute of Technology offers a lot more than just technology-based laboratory. Accessibility is just a small part of this school. There are a lot to choose from, widely range from plainly computer-related field to designing architectures. Also, the school provide a huge amount of budget for each laboratory, and the students can access the fund to buy research-related equipment. I would recommend this research internship opportunity here to future SIT Computer Science seniors.

References

[1] Prof. Hiroyuki Nakamura

Shibaura Institute of Technology, Architecture and Civil Engineering, Professor

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Appendix