King Mongkut's University of Technology Thonburi

Industrial Training Report

Academic Year 2017

July 1th - August 16th 2018

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School of Information Technology

B.Sc. Computer Science

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Executive Summary

This report describes the internship I undertook at Shibaura Institute of Technology Toyosu campus. Shibaura Institute of Technology is a private university of Technology in Japan, with campuses located in Tokyo and Saitama. It is the only private technology university in Japan to be selected for the Top Global University Project. All undergraduate Computer Science students need to get internship program in order to complete their degree successfully. The objective of the 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 summer internship at Shibaura Institute of Technology. I was assigned in the Android application development and legacy system integration. There was a project in the program. It is an alternative way to detect user indoor-position which is using existing sensors on a smartphone device and get their values to process the estimate user position.

I had an opportunity to go to the internship in Japan to learn and gain an experience at Shibaura Institute of Technology. I have acquired a knowledge related to IT in the field of android application by using the new Kotlin language. Moreover, I also learned to use and speak the Japanese language. This program taught me on how to work with foreigner workmates in the different environment and culture in aboard.

Acknowledgments

The internship opportunity I had with Shibaura Institute of Technology was a great change for learning development and meeting with friends from different country. Therefore, I consider myself as a very lucky individual as I was learned a lot of new experience and knowledge that I never met and have tried to do a new thing that benefits my senior project. I am also grateful for having a chance to meet so many wonderful experiences from the internship period.

I express my deepest to Assoc. Prof. Dr. Hiroaki Morino at Electrical Engineering and Computer Science Functional Control Systems of Department of Communications Engineering, Shibaura Institute of Technology for their careful advice and warmly attention which were extremely valuable for my study both theoretically and practically, and my impression.

I choose this moment to acknowledge my advisor Mr. Chaiyapat Tantiworachot for her support throughout my 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 1 July 2018 to 16 August 2018, at Shibaura Institute of Technology. My supervisor was Assoc. Prof. Dr. Hiroaki Morino, and my hours of work were from 9am – 6pm Monday to Saturday.

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 two major project and several smaller projects. This report focuses for the most part on the major project and the smaller projects are more briefly described. 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 to the work environment. Specifically, the following:

- Java

- Data Visualization

- Data Communication

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

- Android application developing based on Kotlin

- Data Visualization

- Problem Solving

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 people dress and speak in a workplace setting

- Observing how they 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 foreigner's teammates

- Communicating with supervisor and other to gather their perspective toward the work

Chapter 2: Internship Organization

2.1 Company Overview and Background of the Organization

Shibaura Institute of Technology (SIT) has firmly maintained "learning through practice" as the philosophy in education of engineers ever since Tokyo Higher School of Industry and Commerce, the predecessor to SIT, was established in 1927. In response to the recent progress in the globalization of the economy, SIT is providing an up-to-date framework for "learning through practice" including intensive English Language programs, Project Based Learning programs under multicultural environment, along with many Hands-on subjects that has been preserved through SIT's 88 years of history.

The initiative for educational reforms are supported by Ministry of Education, Culture, Sports, Science and Technology and implemented in collaboration with other technical universities both in Japan and other countries, Japanese industries, and local communities in Tokyo and Saitama where our campuses are located.

SIT now aims to foster scientists and engineers who can contribute to the sustainable growth of the world by exposing our students to culturally diverse environments where they learn to cope with, collaborate with, and have ever-lasting friendships with fellow students from around the world.

2.2 Company Location

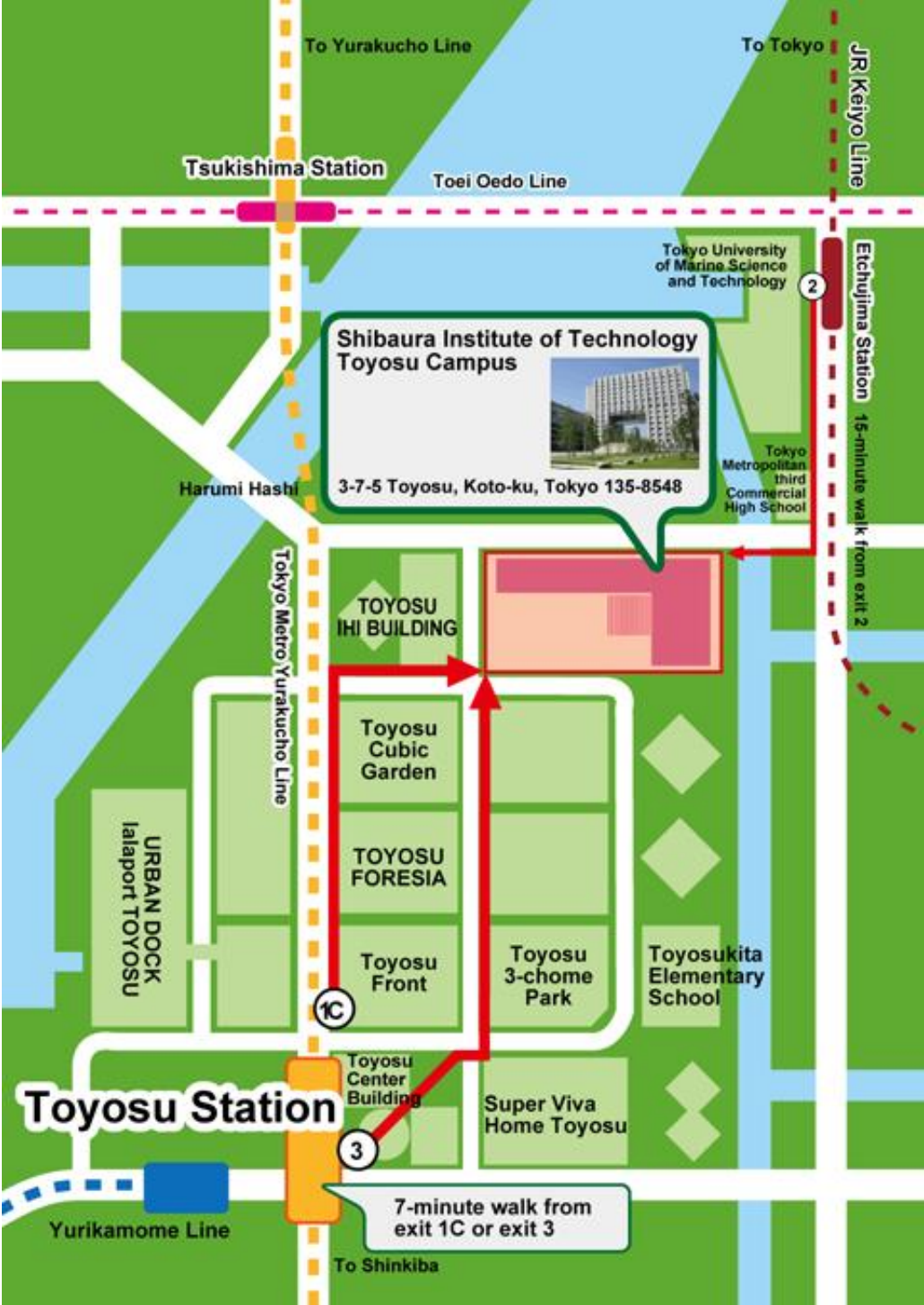Shibaura Institute of Technology has 3 campuses in Japan. There are Toyosu Campus, Omiya Campus, and Shibaura Campus.

Figure 1: Shibaura Tokyosu Campus location

2.3 Japan Visa Information

For apply Japan Visa, there is Japan visa application center in Thailand called Japan Visa Application Centre (JVAC) that operated by VFS (Thailand) Limited in Bangkok, which is an official service provider for the Government of Japan. Applicants could enter VFS.The global website for information and visa application. This exchange program covers the period from 2nd June 2018 to 8th August 2018. Follow the Japan Government compliances, the visa type should be a visitor visa for a six-month stay. However, because we got the acceptance letter from Kobe University, Japan embassy considered student visa for us.

The application's consideration depends on the discretion of the consular officer. The duration of the operation at least 15 business days (except Saturday - Sunday. And holidays of the Embassy).

Address of VFS Global:

One PACIFIC PLACE 9th FL Unit # 910

140 Sukhumvit Rd, Khlong Toei, Khlong Toei, Bangkok, 10110,   Thailand

Hours of Operation:

JVAC Opening time   : Monday to Friday, 08.30 – 18.00

Submission of Application   : Monday to Friday, 08.30 – 18.00

Passport Collection   : Monday to Friday, 08.30 – 18.00

Helpline number   : +66 – (0)2–251–5197–8

Helpline email   : info.jpth@vfshelpline.com

Address of Japan Embassy:

177 Witthayu Road, Lumphini, Pathum Wan, Bangkok 10330 Thailand

2.4 steps to apply for a Japan Visa

Step1: Prepare Application

- Passport (with minimum 2 blank pages and with re-entry permit to Thailand. Please present your old passports, if any)

- An application form is available at JVAC or can be downloaded from the website.

- One photograph was taken within the last 6 months. (The photo must be 2x2 inches, black and white or color with plain background)

- A questionnaire is available at JVAC counter or can be downloaded from the website. Certificate of enrolment from your school in Thailand (original)

- Bank passbook belonging to yourself, your parents or your spouse The original and one photocopy with all transaction pages (Showing your bank book is required in the case of traveling at your own expense. However, an exemption applies if you are either a public servant, an employee of a government enterprise or public company, employee of a university or other academic institute, and confirmed to be earning more than 20,000 baht per month.)

- Schedule of stay

- Submission of a guarantee letter and/or invitation letter from Japan is voluntary. A letter has no specific form (original)

  Note Every need to show in English only. Any document in Thai must be translated to be English.

Step2: Submission

The student submits the application and prepared the document to JVAC Global office. The Japan Embassy may make the appointment with a visa applicant for additional information or request more documents.

Step3: VISA Fees

There are fees for applying for Japan visa with VFS Global. The student can check the current fee in the VFS Global website. The fees can be paid in cash to 'VFS (Thailand) Ltd.

Effective as of 01 April 2018, VISA Fees have been revised as follows;

Nationality	Single Entry	Multiple Visa	Transit Visa
Thailand and others	920	1,840	210
India	260	260	20

Table 1: VISA Fees

* Processing fee of 595 THB (including 7% VAT) paid to JVAC will be collected upon application.

2.5 Travel Itinerary

Bangkok to Taipei, Taiwan	Jun 25 (Sat) XJ4E7L China Airlines BKK 13:20 to TPE 18:00 (3 h 40 m)
Taipei, Taiwan to Tokyo, Japan	Jun 30 (Sat) CI106 China Airlines TPE 16:20 to NRT 20:35 (3h 15m)
Narita International Airport, Japan to Tokyo, Japan	Keisei Line Train Narita Airport to Tokyo, Japan

Table 2.1: Suvarnabhumi Airport to Tokyo, Japan

Sumida, Tokyo to Narita International Airport	Kikukawa Station to Narita Airport Terminal 2 By train (Shinjuku Line) to Narita Airport Terminal 2
Narita International Airport to Bangkok Thailand	Aug 24 (Fri) XW101 Scoot NRT 13:55 to DMK 18:25 (6h 30m)

Table 2.2: Tokyo, Japan to Don Mueang Airport

2.6. Expense

TITLE	JPY	BAHT
Flight Ticket Bangkok to Taiwan	Free (Paid by Microsoft)	Free (Paid by Microsoft)
Flight Ticket Taiwan to Japan	Free (Paid by Microsoft)	Free (Paid by Microsoft)
Flight Ticket Japan to Bangkok + Additional Weight	47,179.00	13,823.31
Train Ticket Narita to Tokyo	1,500.00	439.50
Residence home	100,000.00	29,299.71
Meal per month	60,000.00	17,579.82
Transportation(Train + Bus)	25,383.00	7,437.14

Table 3: Expense table

Chapter 3

Tasks, Projects, and Activities

3.1 Internship Task Background

My tasks and assignments during this internship consisted of Android application developing, real-time data communication, UX/UI design, and legacy system implementation. The unit that I was interned with was Morino's labs. My responsibilities can be described as follows:

Android application developing

- Learn further in Kotlin language for develop Android application

- Optimize application performance for better user experience

- Read and understand in Android sensor API documentation

- Deploy source code to Git system

Real-time data communication

This project required to send and receive the data from Android device to server and other clients in real time so I have to learn deeper in Socket communication and web socket for make them can send and received the real-time data.

- Create Node.JS server as HTTPs server, Web socket server and Socket communication

UX/UI Design

One of my tasks is building a new application design for better user experience and good looking.

- Create a wireframe for Android application
- Read and understand in Microsoft Fluent Design guideline

Legacy system implementation

Due to this project has built as prototype in Japanese version so I also have to implement my new version system to the old system. In this task I have to translate some Japanese comment to English and built my new application as bilingual.

3.2 Assignments

In this internship, I discussed about the scope, requirement, and workmates with Assoc. Prof. Dr. Hiroaki Morino and I have to update him every Thursday. Assoc. Prof. Dr. Hiroaki Morino introduced me to Shibuya Yuki, and Masaki, they are master degree student who I have to working with in this internship period.

Figure 2.1: My workmates

I always work in the Morino's Lab. It is the laboratory for master degree's students.

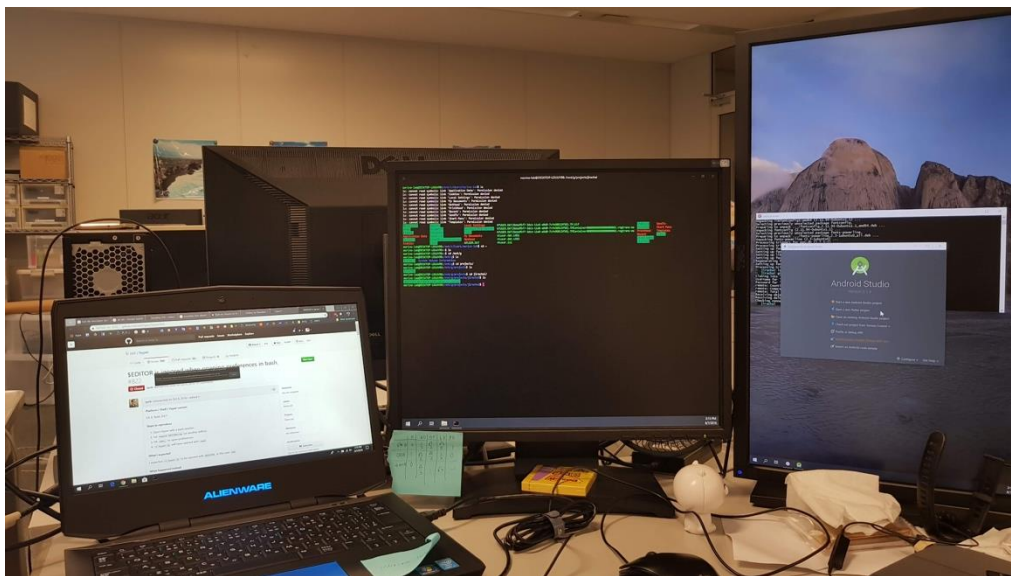Morino gave me with the powerful computer for my personal use.

Figure 2.2: My workstation

The main obstacle for me in this internship is language barrier because the most student cannot speak English but we can find the solution to communicate with without any problem.

Figure 2.3: Work with workmate

Figure 2.4: Photo with my professor (Assoc. Prof. Dr. Hiroaki Morino)

I have to design a user interface and build it into the real application. I decided to use Kotlin language the new language for support native Android application to build this application.
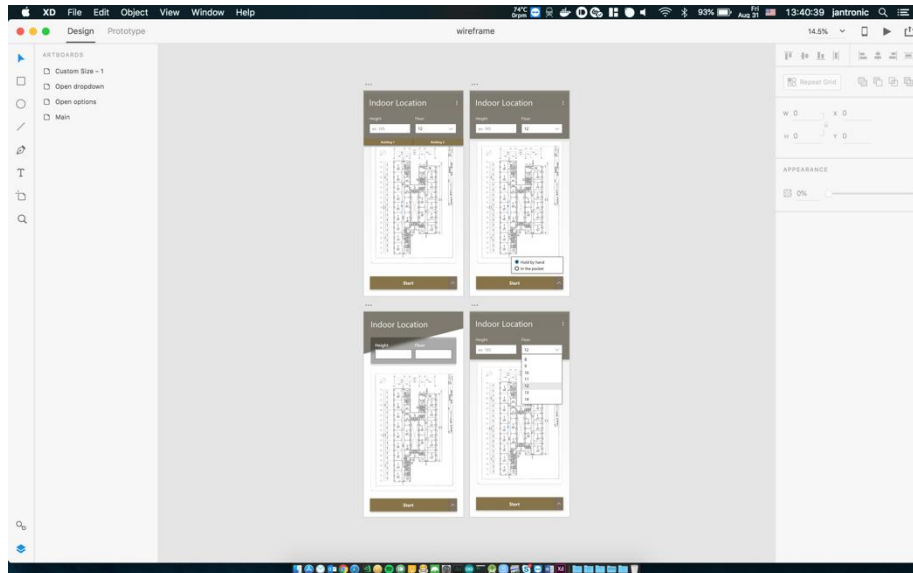

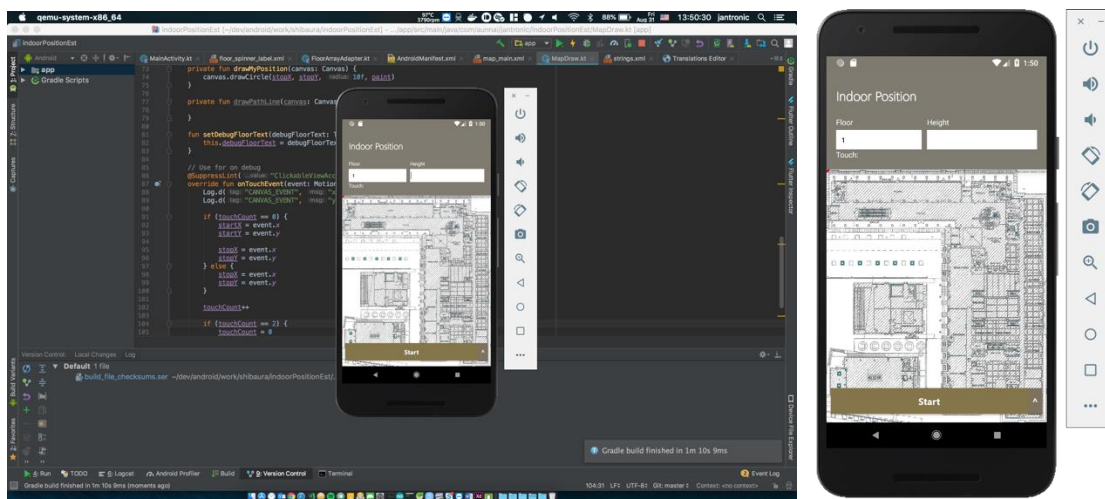**Figure 2.4: Wireframe design assignment**

Figure 2.5: Production application

3.2 Special Activities

Before I leave from Japan, they held a party in our laboratory. I and my Thai's friend cooked Thai food for people in the laboratory.

Figure 2.6: Party Vibe

Figure 2.6: Meeting with Aj.Nipon and Aj.Jonathan

Chapter 4: Conclusions

4.1 Internship Experience Summary

The past two months of my internship have been very instructive for me. I have learned 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 familiar with what I have studied at SIT. Many tasks though, such as name tasks, coding, programming skill. Participating in and learning new skills, both hard and soft, has given me a chance to find out which areas I want to work in after I complete my degree.

4.2 Internship Personal Experience Summary

After completing my work placement, I have really changed my perspective toward the work. I have got a valuable experience as I have done many tasks successfully. I have also learned from the mistakes that I made which make me grew up. I have developed greatly from this internship program and I think that I would not develop this much if I had not done this internship placement.

Chapter 5: Recommendations

5.1 Internship Recommendations

Shibaura Institute of Technology is a very good place to intern and study. It is a such of great opportunities to practice our language, study new knowledge from a quality university as well as learn Japanese culture. I got a lot of friends from around the world because it is not only in the classroom you can learn and meet the new friends, you also learn and meet others from the outside.

5.2 Problem / Obstacle

My only obstacle is language because most of Japanese cannot speak English and also me, I cannot speak Japanese in correctly way but we can use other way to communicate with. By the way, I still strongly recommended everyone who interest to intern in Japan should take Japanese course or have some knowledge in basic Japanese for communicate.

References

➢ [1]Assoc. Prof. Dr. Hiroaki Morino

Electrical Engineering and Computer Science Functional Control Systems of Department of Communications Engineering, Shibaura Institute of Technology

3 Chome-7-5 Toyosu, Koto, Tokyo 135-8548, Japan

Appendix