2021

Symposium on International Student Education Program at UTOKYO Amidst The COVID-19 Pandemic

Alumni and Student Experiences

09

FSO UPDATE

Symposium on International Student Education Program at UTOKYO Amidst The COVID-19 Pandemic

Alumni and Student Experiences

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Preface

International Student Association in Civil Engineering (ISACE) is the official student association for international students at the department of civil engineering. It was established on 11th of March 2011 after the Great East Japan Earthquake, to encourage unity and improve international student's safety. This association has been successful to establish a bridge between the department and students organizing various activities and events targeted to make students' life more pleasing and enjoyable. ISACE has been organizing different events like welcome party for new students, field trips, and a symposium for international students. Symposium for international students has remained an important event of ISACE.

This year due to CoVID-19 pandemic, organizing a symposium which could allow direct and physical interaction among students and alumni could not be possible. However, being increasingly familiar with online classes and meetings during this pandemic situation, an online symposium titled "**Symposium on International Student Education Program at UTokyo Amidst The CoVID-19 Pandemic: Alumni and Student Experiences**" had been organized successfully on March 2, 2021. International students including alumni of the civil department participated and delivered their wonderful experiences on the international student education program in UTokyo including their recent life and working experiences under CoVID-19 pandemic. Their refreshing thoughts and experiences delivered during the symposium has been published in this magazine, "FSO Update 09 (Symposium Booklet)"

We would like to extend our sincere thanks to Prof. Fujino for his valuable time and reminiscing presentation on the initial years of the international student education program in the civil department. We are grateful to Ms. Yuriko Onishi from MEXT, Mr. Hiroki Kasahara from ADB and Dr. Jun Nobuto from Shimizu Corporation to share their motivating thoughts and express gratitude for the support these institutions provide for international students. We would also like to thank the participating students Dheeraj Joshi, Jose Maria Geda, Md. Ibrahim Mostazid and Mingfei Cai for sharing their study as well as research experience at UTokyo, during this pandemic. We would like to express our sincere gratitude to Yoshimitsu Tajima Sensei, Head of the Department, for his opening remarks and Hironori Kato Sensei, for introducing brief highlights of the International Student Education Program. We could not miss to thank Yoshihide Sekimoto Sensei for coordinating the whole symposium since the beginning.

Finally, we would like to thank Abeki San and Tonegawa San from Civil FSO for their efforts, support and regular guidance, without which publishing this magazine would not have been possible.

With Sincere Regards,

Badri Kuikel
Janak Prasad Kharel
Jiyue Guo
Nazish Ullah

From the Chair of Department

Prof. Yoshimitsu Tajima
Chair of Department

On behalf of all the faculty members of our department, I extend my sincere gratitude to all for organizing and participating in this symposium and the effort of ISACE to make this publication possible.

Our unique international education program has a history of almost 40 years and has had more than 1300 international graduate students. Through this international education program, students and faculty members from different countries including Japan actively interact with each other and such active interaction has deepened our international understandings, widened our viewpoints, and enhanced motivation for our study and research in the field of civil engineering. This has been one of the essential merits of this program.

Besides this, it has helped us to develop a wide and strong network of students, alumni, researchers, and faculty over the past 40 years. For example, my specialty is coastal engineering, and I had many opportunities to carry out field surveys in various countries. Anywhere I visit, I can easily find alumni and could easily develop collaborative joint sorority. I am also sure that many faculties and alumni enjoy such networks. Such a wide and strong network can be developed only through the continuous effort of the program. In this sense, I truly appreciate all the efforts made by all the people and organizations who supported this program over the past 40 years.

The scholarship support is one of the most important part to continue such a successful international education program. I would like to extend my sincere gratitude to all the scholarship supporting organizations such as; Ministry of Education, Culture, Sports, Science and Technology, MEXT; Asian Development Bank, ADB; Shimizu Corporation; and Ueda Memorial Foundation.

This annual symposium has continually focused on the review of international education program and discussions for future directions. In the end, I express my sincere gratitude to all the participants and students to make this symposium a success.

Introduction of the International Graduate Program at the Department of Civil Engineering

Prof. Hironori Kato
Foreign Student Officer

The International Graduate Program at the Department of Civil Engineering, The University of Tokyo is an integrated program where both international and Japanese students' study together. This program started in 1982 and it has already had over 1300 alumni from all over the world for the last 40 years. One of the uniqueness of this program is that nearly all coursework is provided in English only. No requirement of the Japanese language for the degree has offered a good opportunity for many international students studying in Japan.

There are always as many as 100 international students from many countries which is comparable to the number of Japanese students in the graduate course of the Department. The first table below represents the statistics of the applications and intake at our program from 2016 to 2020. It indicates that over 150 and sometimes over 250 students applied to the program. Only 7% of applications in the MEXT scholarship and approximately 20% of total applications can be admitted on average, which means a very narrow gate to enter our program. This suggests the excellence as well as the competitiveness of the international students in our program.

Looking at the distribution by region, the second table shows that over 40% of students came from South Asia while many other students also came from Eastern Asia and Southeastern Asia regions. The Department would like to extend this geographical coverage furthermore.

Number of Application for International Graduate Program and Intake: 2016-2020

Year of Entrance	MEXT Scholarship (University Recommendation)		MEXT Scholarship (Embassy Recommendation)	Total, including Other Scholarships	
	Application	Intake	Intake	Application	Intake
2020	134	8	2	195	40
2019	115	5 (+1)	9	180	47
2018	152	4 (+3)	9	202	43
2017	186	17 (+3)	5	254	46
2016	204	15 (+2)	8	278	52

Note: Parenthesis represents the continuation from Master to PhD program

Number of Student Intake in International Graduate Program by Region

Region	2016	2017	2018	2019	2020	Total	%
SE Asia	13	9	12	6	8	48	21.1%
South Asia	16	19	15	26	18	94	41.2%
East Asia	11	12	9	9	12	53	23.2%
West Asia (ME Asia)	1	0	0	3	0	4	1.8%
South/North America	4	1	0	0	2	7	3.1%
Europe	1	2	6	2	0	11	4.8%
Africa	6	3	1	1	0	11	4.8%
Total	52	46	43	47	40	228	100.0%

Salient Features of the Program

The program has many salient characteristics in addition to the English-only teaching courses. First, the Department has received significant financial supports from many scholarship institutions including the MEXT, Asian Development Bank, Shimizu, and Ueda Memorial Foundation. These scholarship programs help the international students to study in Japan without any worry about the financial issues.

It has also a long history of sophisticated Japanese language program, which is organized by professional teachers to assist the daily life of international students and encourage students to learn about local culture in Japan. It has established the Ms. Akiyo Nishino Prize, which is awarded to the best performing international students in the Japanese language classes. Note Ms. Akiyo Nishino is one of the founding members of the Japanese language class at our Department, and also the spouse of Prof. Fumio Nishino, who established our International Graduate Program. The Department expects that this prize motivates the international students to learn Japanese language. Meanwhile, the department also provides technical English classes to enhance the students' language capacity of international communications.

Additionally, the department has interactive activities with students, host families, and the Alumni Association. Personal issues with the international students are advised and backed up by student tutors in their study units. Also, the host family members sincerely serve as daily life advisors to the international students. Furthermore, some of the students voluntarily participate in the activities for international students in the International Student Association of Civil Engineering (ISACE).

The Department facilitates practical education programs in cooperation with various industries. They include, for example, an international internship program at the Asian Development Bank. Also, it has organized a series of seminars that are collaborated with the Japanese private companies. International students have nice experiences of visiting various private firms and local business sites in Japan. Opportunities for international students studying under multinational conditions is another uniqueness. The Department has many joint activities with international universities such as Vietnam-Japan University in Hanoi, Vietnam while it has some joint programs together with other foreign universities like Ecole Nationale des Ponts et Chaussees in France.

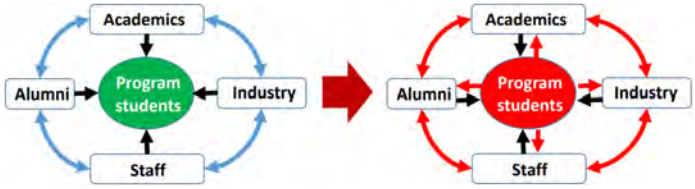
Rich career support is another important aspect to both domestic and international students. The Department regularly organizes job-hunting events or job forums for international and Japanese students in which many companies are invited to come and talk together with our students. Some international students have successfully secured their jobs at the Japanese firms through the job forum. Global human networks, particularly in cooperation with alumni have been also developed. International students are often recruited and recommended by local alumni and/or faculty members at local universities who have close connections with us. Some faculty members of the Department are dispatched to foreign universities to recruit excellent students from those countries. After the graduation, the Department tries to follow up the graduates using the unique online system. Our Alumni Association has recently updated the list of international alumni, and it has been integrated with the list of Japanese alumni.

Current Approach

The Department has been performing the "plan, do, check, and act" cycle for improving this graduate program continuously. The performance of this program has been regularly monitored and evaluated by external reviewers. If it is necessary, it will take actions to upgrade the program.

The diagram below shows the concept regarding the long-term perspective of inclusive design with multiple players. Program students are currently supported by various stakeholders including academics, alumni, staff, and industries. In the long run, the graduates from this program become alumni, the Department staff, industry workers, or academics; and we may have further mutual communications among them to enhance the quality of the program. It is believed that we can develop a sustainable program by cooperating with many people including alumni.

Long-term perspective of inclusive design with multiple players



COVID-19 Pandemic Effect

As you know, teaching and research activities at the Department have been significantly affected by the COVID-19 pandemic. All classes in our university have been provided online since last April. Although we had many technical difficulties, both instructors and students have tried to get used to the online system. It is found that one advantage of using an online technology is the ease in international communication. We can invite many people from other countries and easily make conversations with each other.

However, unfortunately, we had experienced the delays in the start of studies for some international students. Considerable number of international students arrived in Japan later than September and studied a little bit later than other students. Even some students shifted their enrollment to next April. Other international students studied from their home countries using the online system. But thanks to the online system, they could successfully join the classes and learn there. For managing and delivering the new types of teaching/research styles, the staff members of Foreign Student Office, the student tutors, and other people, particularly sponsors of the scholarships, worked very hard and supported our program.

Conclusion

We believe we have developed a successful international graduate program, thanks to many supports from various people for the last 40 years. We are proud of this unique program for producing many excellent international engineers. We would like to deeply appreciate all people and organizations for their generous assistance to our program. I expect to receive more support and feedback in the future as well, which should lead to further contribution to the international community in civil engineering.

Message from Supporting Institutions

Ms. Yuriko Onishi

Specialist, Office for Student Exchange
Student Support and Exchange Division
Higher Education Bureau
Ministry of Education, Culture, Sports, Science and Technology (MEXT)

I would like to extend my gratitude for providing an opportunity to share our experience regarding the support under MEXT Scholarship with The University of Tokyo.

Even though we are in a difficult time right now because of the COVID-19, I am very thankful for the professors who still made the symposium possible and invited us for participation. MEXT has been carrying out the International Graduate Program since 2006. However, we rarely had a chance to talk to the professors and students similar to this event. Therefore I am very much looking forward to hearing all of your stories.

I would like to express felicitation to the students who received an opportunity to study under the International Graduate Program at the University of Tokyo. I believe that knowledge and experience that students receive at UTokyo is not only for the duration they shall stay here but it shall guide them their entire career. We encourage you all to share your ideas and experiences with others and find out how you can make this society a better place to live-in for everyone.

Finally, I extend my sincere gratitude to the Civil Department at UTokyo and ISACE for organizing this event and providing a chance to listen to the interesting experiences and stories of alumni and current students.

Dr. Jun Nobuto

Deputy Director-General, Shimizu Corporation

I, on behalf of Shimizu Corporation, would like to extend my sincere thanks to the Department of Civil Engineering at the University of Tokyo for inviting me to this symposium. I am also an alumnus of this department and I graduated from the Bridge Laboratory of Professor Ito and Fujino in 1989. Our company is delighted to support the academic activities of international students at the University of Tokyo.

I extend congratulations to the international students who are successful to study at the University of Tokyo with the support of various organizations including MEXT. Further, I would also like to thank professors, the civil department, FSO and ISACE for organizing this event, even at this difficult time, to connect and listen to the experiences of alumni and international students. These events also provide an opportunity for students to connect with senpais, industry people and finally with organizations supporting their studies.

It was interesting to listen to international students about their personal life and research experience in this university. We are committed to further collaboration with the University of Tokyo and supporting the educational activities for the international students.

Thank you very much again.

Mr. Hiroki Kasahara

Principal Financing Partnerships Specialist, Partner Funds Division
Sustainable Development and Climate Change Department
Asian Development Bank

It is always a pleasure for us, the ADB–Japan Scholarship Program, to be invited over this important event. We are impressed with the fact that the department of civil engineering has a variety of programs and activities including the internship opportunities to support the international students, including the ADB–JSP scholars.

Human Resources Development is the key to nation building. This philosophy is the cornerstone of Japan's official development assistance policy. It is rooted in the country's own development experience after World War II, when Japan raised itself from the ashes with little resources other than the strength and the will of its people. Keeping true to this philosophy, the ADB–Japan Scholarship Program (ADB–JSP) is part of the Japanese government's strategy to promote nation-building in the developing countries of Asia and the Pacific region. ADB–JSP was established in April 1988 to help foster outstanding human resources from developing nations, especially those with limited natural resources. Over the last 32 years, the Government of Japan through the ADB–JSP program has given opportunities for more than 4,000 highly qualified youth from 37 of ADB's developing member countries to undertake graduate studies in Economics, Business and Management, Science and Technology, and other development-related fields. Of the 25 partner educational institutions in nine countries across Asia and the Pacific, 15 universities are in Japan.

It is worth mentioning that the University of Tokyo is one of our original partner universities since ADB–JSP was established. Our long-standing cooperation has produced 481 scholars which is second to the highest among all our 25 partner universities. We support five schools at the University of Tokyo, namely, Department of Civil Engineering, Urban Engineering, School of International Health, Division of Environmental Studies, and Graduate School of Public Policy. Currently, we have 41 scholars pursuing their studies at UTokyo.

Finally, as we face these challenging times, we need to create more opportunities to partner with organizations and institutions that can better respond and bring about positive changes in the communities of which we are a part of. For us at ADB–JSP, we will continue with our tasks and we stay committed to ADB–JSP's mission. For our partner institution, this might provide an opportunity to devise and adopt flexible and innovative teaching technologies and an adaptive learning environment responding to the student's various needs including their safety.

In the end, I would like to express our sincere appreciation to UTokyo. As our long-standing partner, we thank UTokyo for its valuable cooperation in administering the ADB–JSP program. We are confident that ADB–JSP scholars, together with other students have the best environment to nurture their potentials and help achieve their personal and professional growth at UTokyo.

Message from ISACE Committee: Introduction of International Students Association in the Civil Engineering (ISACE)

Mr. Nazish Ullah

ISACE Representative (Kiyota Lab)

This is our great pleasure to have this interesting and informative symposium and its publication. We are happy to share the information about the International Students Association in Civil Engineering (ISACE) at the University of Tokyo.

ISACE is the official student group in the Civil Engineering Department. It was formed on the 11th of March 2011 after the Great East Japan earthquake. The main purpose of this committee was to encourage unity and improve the international students' safety. It was felt that there is some communication gap between the international students and with some interaction with the Japanese students and it was realized that the international students should have one forum which can become a platform to have discussions and share each other's feelings, problems, and achievements among the international students. Further, this also bridges the gap between the students and the department with the purpose to smoothen the life of the graduate student in the department and make their journey more pleasing and enjoyable. We can say the ISACE is to inform, supplement, assess, connect, and enjoy the educational journey at U-Tokyo.

Before the pandemic, the ISACE Committee usually organized several events every year, like the symposium, field trips to some civil industry-related sites, various get-together events like new year party, welcome party for the new international students, the alumni forum discussion party, etc. But because of the COVID 19 pandemic, we could only arrange this symposium online. Hopefully, we seek to arrange other events as well as all the regular activities once the situation starts to be normal.

In the ISACE committee usually, the professor proposed ideas about the events, and the Foreign Student Office (FSO) prepares the feasibility and proposal for organizing this event. The ISACE committee is responsible for organizing these events and sharing the information with the stakeholders. The stakeholders usually are the professors and students from the U-Tokyo, alumni, and sometimes the professor from other universities.

The student life during the COVID-19 was a mixed experience. When we got to the state of emergency, we had to stay home, attend the classes online and even the meetings with friends and families were virtual. Entertainments were limited to sitting in front of the screen. Many of us may have improved cooking abilities during the period. The physical experiments of the research were affected.

At last, but not least, we wish this pandemic situation will be soothed soon and we can enjoy the wonderful life exploring all the splendors of studying at the University of Tokyo.

Experience of Alumni

Looking Back on International Student Programs

Prof. Yozo Fujino

Prof. Emeritus of University of Tokyo and President of Josai University

Working some years at Tsukuba University, I joined The University of Tokyo in 1982. In the same year, we started the international student program in the Civil Department. I spent 30 years of my life in this department and retired in 2013. I am currently appointed as the president of a private university. My research had been mainly related with bridges, more specifically, dynamics, vibration control and monitoring of bridges. But recently my research area spans management and maintenance of infrastructure in general.

As I mentioned earlier, the international program was initiated in 1982. Before starting this program, most of the incoming students were from China, Korea, and Taiwan. Asian economy, including that of Japan, was growing rapidly and to address and contribute for the human resource development needed to cater such economic expansion, the international program was further extended to Thailand, Indonesia, and Philippines even Europe and South America.

I should not miss out to mention Prof. Fumio Nishino who was the pioneer of this program. The selection of students based on paper documents and written examinations was changed to the selection based on the recommendation and academic merit to establish a convenient yet objective selection process. Positioned as an advisor to the president, he worked hard to change this rule. His contribution extends further to convince and secure MEXT scholarship which was around ¥180,000 per month in the beginning. Today, I can remember Profs Ishihara, Katayama, Kunishima, Mushiake, Nakamura, Okamura, Tamai, and Uomoto, and many other professors who supported this program made it a successful journey.

Learning Japanese language was necessary for students for their daily life activities, for which we established Japanese language class, headed by Mrs. Nishino. Subsequent over the next few years, Foreign Student Office was created to facilitate international students. With the brilliant and hardworking students from overseas, we did interesting and remarkable research works in our department resulting UTokyo to rank second in worldwide QS Ranking in 2012 in the field of Civil Engineering.

Beyond research, we used to play tennis with my students, and ski in winter. I used to enjoy the mixed cultural ambience due to the presence of many overseas students from different countries. I have an interesting experience of attending the wedding ceremony of my former students, Benito Pacheco, now professor at the University of Philippines and Sun Limin, now a professor at Tongji University. Recollecting all my experiences and gathering full history, if possible, I am planning to prepare a memorial magazine on the International Education Program at the Civil Department, as next year in 2022, it will complete 40 years.

At the end, I want to express my sincere gratitude to the department and ISACE for organizing this symposium and providing an exciting opportunity of sharing these experiences and learning student's experiences. Thank you so much!

Thinking about the International Student Education Program of the Department of Civil Engineering from Overseas

Dr. Phan Le Binh

JICA Long-term Expert, Lecturer - Vietnam Japan University
Doctor of Engineering, 2003 (Transportation Lab)

Today, I would like to discuss my experience on the International Education Program in the Department of Civil Engineering. I studied at University of Tokyo for 9 years, from 1994 to 2003. I am a little bit different from many graduate students because I also studied undergraduate at UTokyo. After my graduation, I worked full-time with JICA, Japan International Cooperation Agency. Later on, I would like to explain a little bit about JICA's activity.

Before coming back to Vietnam to work at Vietnam-Japan University in Hanoi as a JICA long-term expert and lecturer, I was an officer in JICA headquarter. I was in charge of transportation planning, urban planning projects not only in Vietnam, but also in Myanmar, Pakistan, Laos, and many other countries. They said that I am the first non-Japanese person who joined JICA headquarter as an officer. I think it is because I can speak Japanese well. It is one important factor, if a person would like to join JICA headquarter. The story is different in case of the JICA office in other countries. Overseas JICA offices do not require capacity in Japanese speaking. JICA has about 1800 staff and about 100 overseas offices. Regarding the work in JICA, we mainly do four schemes in supporting the developing countries. They are technical cooperation, grant aid, loan and dispatching volunteers.

Some people misunderstand that Official Development Assistance (ODA) means only Japanese loans, but actually it also includes technical cooperation. Technical cooperation is a very important scheme in our ODA activity. In technical cooperation, JICA dispatches the experts, professors from ministries or from universities and other organizations to developing countries for making studies, to transfer technology, to provide equipment which contribute to the improvement of technology. Regarding grant aid, JICA supports the Japanese government for providing the various facilities to satisfy basic human needs in developing countries. For the loan part, it provides financial resources to improve social and economic infrastructure including the improvement of policy or strategy.

As a JICA staff, I mainly engage in project formulation, project implementation and project evaluation tasks. During our work, there are many chances to improve our expertise by working on many projects. In my case, through various experiences in many projects in different countries, I learned a variety of things which greatly helped me to do my work as a lecturer in Vietnam-Japan University where I give lectures and supervise student's thesis. I specifically do the research activity mainly in collaboration with Kato Sensei.

Regarding the International Student Education Program, I think there are some points I would like to emphasize here. First, I believe it is very important to attend and try to understand Zemi. Zemi is a unique activity in education in many universities of Japan. As Professor Fujino mentioned, international students do not need to understand Japanese. But at the same time, when students attend Zemi in each laboratory, not understanding the Japanese is a big hurdle, a big barrier to understanding what Japanese students are speaking. I do not know the current situation of laboratories, Zemi in our department. But when I was studying here, most of the Japanese students did presentations in Japanese language. From my experience, at that time, most international students suffered because they could not understand even a little part of the presentation. However, I still want to emphasize that Zemi is important. It is important to share information among students and also to learn from each other and get familiar. Therefore, even though Japanese language is not required as an obligation in our department, I strongly recommend that international students try hard to study Japanese. It is not only important for you to survive or to enjoy life in Japan, but after graduation if a student wants to do a job in a Japanese company, your Japanese proficiency is very important.

Professor Hitoshi Ieda, my supervisor, used to mention that you must maintain and value the relationship with your lab mates, with your friends in the department, with professors and also the staff. I would recommend every graduate to remember this important lesson. In the end, I would like to thank the organizer for providing this opportunity to present my views.

Reflecting on International Student Education Programs from Working in Japanese Companies

Mr. Uttam Kumar Dwivedi

Team Leader (scai project), Hazama Ando Corporation

I am currently working as a team leader at Ando Hazama Corporation. I did my bachelor's from IIT Kanpur in India, and during that time I got a chance to come to Japan for an internship in CSIS Lab that is Shibasaki & Sekimoto Lab in IIS, University of Tokyo. It was a good experience for me because it basically gave me a chance to understand Japan. I fell in love with Japan so much that I decided to come to Japan for a master's program. I joined the same laboratory, Shibasaki & Sekimoto Lab in 2016, and I received a MEXT Scholarship.

After that, I joined Ando Hazama Corporation, and am currently working on developing the next generation automated safety and management solutions for construction sites. To present my hobbies, one of my main hobbies was traveling but I could not do it for the past two years due to CoVID-19 pandemic. But I love drone photography and I used to build drones before coming to Japan. I have tried to continue that hobby from time to time.

My university life was basically the best two years of my life in Tokyo. My master thesis was focused on the development of autonomous population distribution and human settlement maps using satellite images and geospatial data. I was awarded the Furuichi Award for an outstanding Master thesis. I basically divided my university life into these three sections, and the importance of the section was given based on the order I have presented here.

The priority was research work. At the very early stage of my research, I basically tried to create an outline of what I am going to do because it helped me to understand the flow and break down my work. We used to have regular discussions with my sensei and lab mates, and we used to continuously improve our plan. There were a lot of presentations and conferences involved during my research work. But at the same time, I was also working part-time in many companies in Japan. My dream company was Yodobashi Camera, but because of my limited proficiency in Japanese language, I could not get a job there. I started working in a lot of AI-based industries and consulting companies and software industries. My basic target was to understand how the work culture in Japan works, and how I can improve my knowledge while being a student. Of course, we had a lot of fun activities. We used to have a lot of parties in Shibuya. We used to travel a lot and I visited almost 10 different countries during my master's program. We used to join a lot of events for startups and entrepreneurship and casual gatherings in Shibuya. That was a fun time because we did not have the pandemic then. Basically, one of the most important takeaways from this was we had tended to discuss our good things with our professors. When we get some sort of good results, we always discuss it with our professors. But when we get stuck, we try to hide that fact from our professors. My advice for new students in such a situation would be to openly discuss your problems with sensei's because they have a lot of experience in this field, and they can guide you out from the problem.

For the job part, I want to give a basic understanding of how to look for a job in Japan as an international student. First, the most important thing is that we are the graduates from the University of Tokyo. The University of Tokyo is one of the best universities in the world. Finding a job is not that difficult, but what we need to do is we need to find the kind of work that we love, and that is the most important thing when we are looking for a job life. This is basically my approach, and how I started my career. I made a list of my skills, and I made a list of the skills that I want to learn during my master's program.

Based on that, I started thinking of what industries I can join. I was interested in machine learning and AI as well as GIS. But at the same time, I also had an interest in business innovation and how to build a new team. Based on that, I started looking for new jobs. I started applying one year before I graduated. I had a lot of contact from job consulting agencies. I also talk with my sensei and my lab friends on how to apply or where to apply for the job. In Japan job consulting agencies are very popular. It is really a good idea to have them look for the job that you want to have. It is very simple as well; you have to send your resume to them, and they will look for the companies for you. After that, I started looking for the kind of ideal work. The ideal work is basically the kind of work that I really want to do, and which motivates me every day to perform better. The important thing in this is that it is a new beginning. Working life is a new beginning, it is not the end. We are not done learning. We start learning in our work as well. It is a very different environment. If you get stuck with the wrong kind of industry, it really is a bad way to start your career.

I want to shed some light on how the international employees and Japanese companies are working right now. The thing is students from the University of Tokyo are the best minds from Japan and they carry a lot of quality knowledge with them. Most of the Japanese companies here are looking to harness that kind of knowledge and that greatness. But the problem is before they can harness that kind of energy from you, they want you to learn the basic Japa-

nese language and office culture. This is for the benefit of the employee as well as the company because they want you to understand their business and their requirements. Without understanding these two points, you cannot really do anything in the company.

As international employees, we are very raw talent, looking to revolutionize the world with our innovative ideas. But the first hurdle we go through is the lack of the Japanese language. And over time what happens is we get so focused on this part that we start becoming Japanese employees. But what we must keep in our mind is that if a company wanted a Japanese employee, they would have hired Japanese employee from the beginning. It is very difficult for them to find and manage international staff. If they are doing it, there is a bigger reason, there is a bigger motive in the picture. What they expect from us is they want us to create innovative and technologically advanced solutions that can help them expand their business for the rest of the Japanese market as well as international markets. But to do that, they do not really have a proper training program or a guideline that a general western world has, for international employees. This somehow creates a gap and most of the people working in Japanese companies get stuck in this first part and they never get to touch about the second part.

I want to share my journey at Ando Hazama Corporation. I started working here in 2018. In the beginning, companies had a lot of interest in safety improvement using AI and IoT, but there was no clear guideline and business path. When I joined the company, I started looking to create this business plan. I used to have a lot of discussions. I visited a lot of construction sites to understand their business. And of course, I was learning Japanese, but my main job was not to learn much Japanese. My main job was to prepare business innovation-based solutions. I started working towards that. Within one year, I started working on a prototype, and we needed a different team. We started hiring full-time AI and software engineers at traditional construction companies. This never happened before. But we did it with the trust that I could build with Ando Hazama and led my management team basically. Currently, I am leading a team of 15 full-time, and freelance engineers. We are ready to launch the first state solution of our project in Japanese construction sites of Ando Hazama Corporation. The journey has been very exciting so far, and there have been a lot of challenges because of the planning, and the way Japanese Construction Company works versus the way a software-oriented foreign company is supposed to work.

Currently, our team has created a platform named SCAI. It stands for Smart Construction with Artificial Intelligence, and the plan is to build a one-stop solution for real-time safety and project management using AI, IoT, and a lot of variable checks. We are trying to provide the convenience to experienced engineers sitting in an office and provide high-quality construction solutions, but not just to one site but all the construction sites without going there. Our work has two pieces in it. One is we are providing a lot of support to the construction sites, and second is we are providing the same sort of information remotely to our office and remote workplace employees. On construction sites, safety is one of the most important things. By using our next-generation futuristic tech, we are creating a 24/7 automatized distress signal that basically notifies all the users every time their work situation deteriorates, or they go to some sort of dangerous locations, or they basically face any kind of danger. This kind of system lets them know before they face the danger. This is a lifesaving technology. But at the same time, we provide a daily detailed report of the construction site. The people in the offices do not really have to visit the construction site to understand what is going on there. They can basically interact with our platform, and they can discuss, visualize, and plan multiple aspects of construction work without any need to visit. We are planning to expand our platform to different construction companies as well within the next two years.

Voice of Students

Dimensions of Studying at U-Tokyo, still convivial amidst pandemic

Mr. Dheeraj Joshi
Student

I am Dheeraj Joshi, MEXT scholar - Masters student at Prof. Wataru Takeuchi Lab in Department of Civil Engineering, IIS, The University of Tokyo. I had rich work experience in Railways and promising research potential with a strong desire to change my surroundings and improve the everyday lives of people. I wish to see this sojourn to the culturally rich and technologically advanced nation as a learning experience in the field of cutting-edge innovations that will foster me to effectively undertake national level projects to contribute back to society and with an aim to serve for betterment and growth of cooperation between India and Japan.

I had unique learning experiences in Japan starting with my friendship with my tutor Misumi-san, who helped me along with FSO kind staff including Tonegawa-san and Abeki-san to settle without any trouble in Japan. The Japanese language (Nihongo) course is a key to open the treasures of Japanese cultures and I made some nice and wonderful friends from different parts of the world in Nihongo classes.

Soon, I found another unique and wonderful Host-Family program of the Department of Civil Engineering and I am very grateful towards the kindness bestowed upon by my host family of Miyake-san. I even gathered courage to write letters to Misumi-san and Miyake-san in Nihongo after strong encouragement by Akaike and Suzuki Sensei of the Host Family program.

Welcome party in my Lab

Life in the lab is very stimulating as all lab members work as a cohesive unit and brainstorm research aspects thoroughly under the guidance of our Sensei.

My research is focussed on my work domain with a focus on risk assessment of rail infrastructure in India including upcoming High Speed Rail corridors to support the business continuity planning. The objective being to identify critical rail infrastructure to aid in creation of a risk informed decision-making environment under multi-hazard and local compounding vulnerabilities. Risk to railway infrastructure in this study is defined as per UNDRR terminology, which is a function of hazard – the probability and severity of an event; exposure – assets subject to the hazard; and vulnerability – physical, social, and economic susceptibility of assets to suffer loss and damage under hazard of given severity. The study is in line with Sustainable Development Goal 11 and the Sendai Framework for Disaster Risk Reduction which calls for understanding risks through risk assessments towards disaster resilient infrastructure, business continuity and avoiding losses due to disasters.

Besides exploring the research opportunities, I had the opportunity to visit places in this beautiful country before COVID-19 scenario like Nikko, Sumo-match at Ryougoku Kokugikan among others.

(Nikko Trip)

(Sumo Match ceremony)

Life before Corona pandemic

Though, I could not go out much except for lab work during the COVID-19 scenario but my alma-mater Todai (The University of Tokyo) has shown new way of life through integration of technology for ensuring continuity in studies of students through online lab meetings, conferences including online cultural gatherings like IIS International Mixer among others.

(2019-20)

(2020-21)

Life in Corona pandemic

This COVID-19 pandemic has taught us the important adage, "It wasn't raining when Noah built the Ark: Understanding risks in a global networked society is the key to resilience and planning ahead".

Pavement crack ratio estimation using in-vehicle camera by top-view transformation and crack segmentation on successive images

Mr. Geda, Jose Maria Guyamin
Student

I will discuss specifically my research work at UTokyo on this opportunity which is about "Pavement crack ratio estimation using in-vehicle camera by top-view transformation and crack segmentation on successive images". Road assessment has 2 major problems: limited coverage of road assessment and increasing number of aging roads. In Japan, approximately 50% of roads are not being assessed. And from these, only 2% is assessed using a precision profiler which is very expensive, and 48% is manually assessed which has low accuracy. Hence, road management officials need accurate and affordable road assessment solutions.

Pavement evaluation is performed mainly from 3 perspectives, roughness or IRI, crack ratio and rutting. Current inexpensive methods for roughness evaluation are response-based systems, for crack ratio evaluation, computer vision-based evaluation using in-vehicle cameras and for rutting, research on different techniques are being conducted. The main focus of this research is on crack ratio evaluation.

In the Japanese standard from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the crack ratio is calculated in top-view in a 50 by 50cm grid over a 20m span of road.

Profilers with "line cameras" are usually used to obtain this map accurately and evaluate crack ratio. But this option is expensive and cannot be used frequently. Some of the key points that are of concern in this research are 1) Transformation to top view with actual length scales is required. 2) Camera positions and internal parameters are not easily obtained for an in-vehicle camera. 3) Only limited sections of the image have good clarity which is in the near part of the image. 4) Combining successive frames will help provide good clarity for a long segment of road. 5) Classification is required for each grid box.

First, for the top-view transformation, the top-view transformation model is used. Four points on the original image are used to calculate the transformation matrix to transform the whole image.

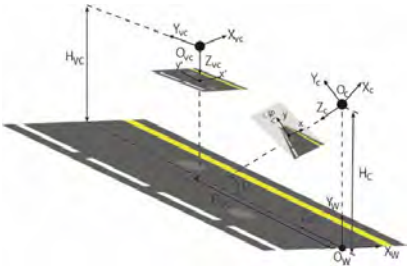
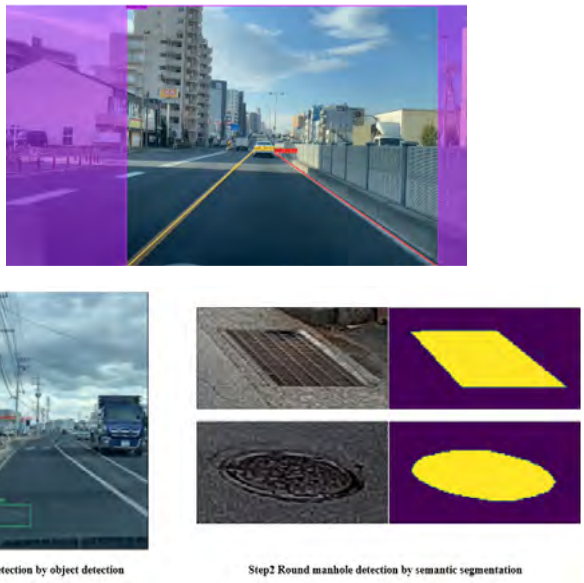


Fig. 1 Top-view transformation model

Second, camera parameters are not easily obtained for a specific drive scene. Therefore, known road information from the scene is used to estimate these parameters. For example, straight lane lines and also circular manholes (Fig. 2) on the road are utilized.



(a) (b)

Fig. 2 (a) Straight lane line detection. (b) Manhole detection and semantic segmentation.

Third, the clear sections of the image in each extracted frame are utilized and then Fourth, image stitching is conducted on these frames. The frames were extracted from the video at 1m interval using GPS information. Image stitching is conducted on the transformed successive frames from the driving scene. the relative position of each frame was then obtained, and the pixel-to-distance can be calculated.

Lastly, on the stitched image, using the calculated pixel-to-distance ratio, the 50x50cm grid will be drawn. (Fig. 3). For each grid, crack ratio will be determined using classification and then the average crack ratio for the surveyed road can be calculated. The calculation of the crack ratio from the in-vehicle camera is the main result for this research.

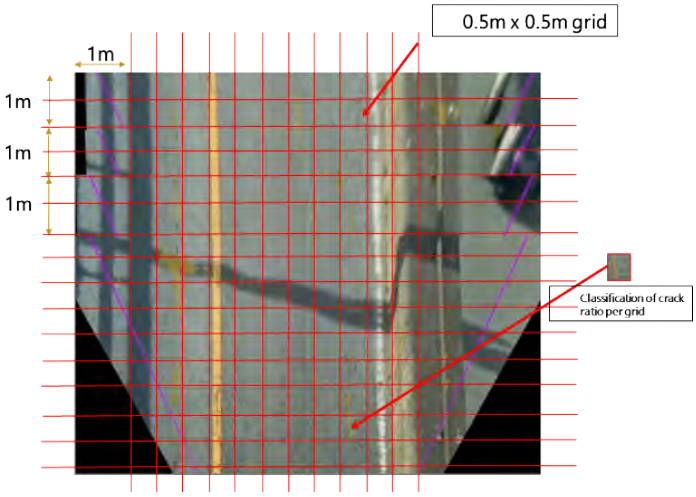


Fig. 3 Grid box splitting and classification

Life during the pandemic for me is a mix of things. Classes as well as lab meetings and research meetings were all conducted via Zoom. The professors were very resourceful, easy to adapt and very considerate. So for me, the difficulties were a bit relieved. Lab welcome parties are not possible for a large group of people and we cannot meet our new friends at the lab.

But some good things also happened for me. I was able to have more time preparing good food for myself and learned to cook many Filipino dishes for the first time. This also helped with my homesickness. Aside from that, I am still able to eat my favorite Japanese food at the restaurants.

Pandemic effect to Utokyo life, arduous but not impossible

Mr. Md. Ibrahim Mostazid
Student

Life in Tokyo is always glamorous. One can easily love Tokyo for its multicultural environment, extreme teenage cultures and styles, beautiful landscapes, and obviously the city life. But the metrical irregularity started after the outbreak of the global pandemic COVID-19. Especially it turned the table by enforcing months-long lockdown. It made some major changes in daily life- remote working, shifting from a semi-digital state to a complete digital state, raised health consciousness, and people started to isolate themselves by staying at home where even the hours seemed to pass unapologetically. The 'cancel culture' got a new meaning during this COVID-19 pandemic. And the travel ban gave it another dimension.

As a research student, it is indeed a tough time. Though the classes are taken online, those who are involved in experimental works suffered the most. An abrupt stop had been imposed on 'field research'. Here, I am doing research in waste concrete recycling which is fully an experimental study, and the first phase of lockdown did a long-time research disruption which was a hard hit in the early year of my master's program. Though it inflicted some changes in the research plan it is a matter of hope that the work pace affixes after the relaxation of lockdown. Nowadays, life becomes normalized. It became possible because of the creative, resilient, and highly adaptive environment of the University of Tokyo. Nowadays, apart from frequent hand sanitizing, wearing a mask, maintaining physical distance, and doing zoom meetings, my other activities remained the same as it was before the COVID-19 hit. Experimentation in the laboratory is going well. I am using a new technique of recycling waste concrete by powder compaction. This technique was developed in 2016 by Associate Professor Dr. Yuya Sakai and his research team. Since then, several researchers gave significant momentum to this research. This technique uses concrete powder obtained by crushing and milling the concrete waste and by manufacturing the recycled compacted concrete, termed as compacts, via high-pressure powder compaction. The entire process does not require new cement and ensures speedy production. This technique is still evolving and needs to reduce the production pressure which is currently 100 MPa and increasing the compact strength which is currently below 20 MPa. My major focus is on these two issues and introducing reinforcement to evaluate its performance. Current research progress is expectant to reveal some fruitful outcomes.

Life after COVID-19 is incoherent with the life before COVID-19. It enlivened some dramatic changes in every aspect of life. Now, this global pandemic stepped to the second year in a more violent form and instead of falling into the hands of depression, we should keep ourselves out from mal-adaptiveness and engage ourselves to transform into more tolerant, and more resourceful people. Hope to have better days soon.

Research Life During CoVID-19 Pandemic

Mr. Mingfei Cai
Student

I am the second-year master course student from Sekimoto Lab and the recipient of the UEDA Memorial Foundation Scholarship. I come from Chengdu, Sichuan, China, a city where you can enjoy delicious food, cultural atmosphere, and relaxing leisure time. My research interest is human mobility simulation as well as urban computing. The details come as follows.

Recently, reconstruction of human trajectories has become a heated discussion. On the one hand, it can help the government with public facilities organization, traffic arrangement, and so on. On the other hand, with the wide use of mobile terminals with positioning modules, it is easier to collect large amounts of data without doing surveys.

However, there are still some problems. First, it is difficult to make a model accurate and easy to transfer to different cities at the same time. Second, high-resolution data is so expensive that local governments cannot afford. Meanwhile, privacy is also an essential issue, which means that individual trajectories data should not be used directly. To deal with problems above, my research topic focuses on using data assimilation techniques to improve existing simulation approaches with low-cost and accessible mesh data as a result.

In all, there are two parts in my research outline, that is, the agent-based model and the particle filter data assimilation part. These two parts communicate with each other with the utility function, whose parameter is what we focus on. First, the particle filter part will generate many different particles with different parameters set. Then, for each particle, the agent-based model will use one set of the parameter to simulate the trajectory of human beings. After that, when it is on the hour, the agent model will calculate mesh population and compare it with the observation to get particle weights. By repeating the process, reasonable final trajectories can be generated successfully.

In the experiment, Nanto city is selected as the suitable target city, and the data source includes open-source census data and aggregated mesh data. When it comes to the result, the difference between the observation and prediction is larger in the afternoon and evening, and the main error source comes from populated areas. The correlation coefficient is high in the early morning and late night while it is low in the middle of the day, which is reasonable. And the absolute value is satisfying. Currently, the agent-based model with particle filters can produce satisfying results considering the correlation coefficient. But more evaluation metrics are needed for the further analysis.

As it is mentioned above, my research mainly focuses on simulation. Thus, it is easier to continue online for me. However, daily life changes drastically due to the Covid-19. In my opinion, even though this period is tough for everyone, it gives us an opportunity to experience a different lifestyle, such as online courses and remote working. During these days, since it is hard to go out as usual, I started taking photos of what I thought was interesting to kill the boring remote-style time. For instance, I picked the picture of the first snow in Tokyo last winter in my dormitory as the red brick standing in the white snow made the photo delicate in my perspective. Other examples are some photos taken in Nagano Prefecture, the photo of Tateishi Park, a good place for meditation and overlooking the SUWA Lake and the spring in Kamisuwa Station, which is rare and very interesting.

In all, it is significant to keep an optimistic attitude in these special periods. Everything will be fine and keep going forward!

FSO UPDATE — Symposium on International Student Education Program at UTOKYO Amidst The COVID-19 Pandemic

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