IDEA League Summer School 2020 – Online Course
RWTH Achen Summer School

Report Date: 2020/10/09

Your Name	Muhammad Reza D. Bagus		
Affiliation at Tokyo Tech	School of Environment and Society Dept. of Transdisciplinary Science and Engineering		
Student ID#	19D58236	Current academic program year	D2
Program theme	International Graduate Program (IGP) – C		
Program period	2019/09/25 to 2023/09/25		
Posting to the web	This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? **Include**		

Report contents

① **The reason you joined the program**

There are three motivation behind why I interested to attend this summer school courses program and campuses as well. First and foremost, Urban Mobility Concepts course are quite new topic of my background study and it is linear with our laboratory too. Secondly, I believe that the course have implication to well-develop and simulating the supply chain logistics and management. The last, I want to expand my friend and networking with the other professional from another fields too. I believe that the proposed program could help me to enlarge my insight from other perspective on my current research topics, and it can help me to improve my best goal career in the following years. In the future, I am always dreaming to be a professional engineer but still could be a lecturer as well. Being a professional engineer and a lecturer at once, in my view point, it's able to implement my knowledge and experiences about engineering – especially related to logistics management system – as well as can transfer and sharing what the expertise that I'll have got. To be a professional engineer is no always interacting with technical aspect, many fields could bear with engineering field. Thus, this summer school program could be powerful grounding to make me as a professional engineer. Either expertise of engineering and management in this summer school knowledge could help me one step ahead to solve some complex problems more effectively and efficiently in my professional career further.

② **Pre-program preparations**

I collected some information regarding the event before main event was held by virtual meeting software, like Zoom. Speaking frankly, I more like to visit the campus, because I would able to really feel the experience to connect with new friend from around the globe and feel the experience of different study-cultured in the RWTH Achen campus. Furthermore, the organizing committee was reliable and helpfully to provide some information regarding the program.

③ Program contents, activities

Due to the unpredictable of COVID-19, the summer school program was sifted to the online format by using Zoom. The event was held in three days respectively, starting from 15th September (Tuesday) at 07:30 CEST until 17th September at 17:00 CEST. The programs was kicked off with welcoming speech from Rector of RWTH Achen University – Prof. Rudiger; Institute Head of Institute for Automotive Engineering (IKA) of RWTH Achen University – Prof. Eckstein; and Secretary Office of IDEA League – Dr. Zachariah. Moreover, the online summer school program was designed with some lectures from professionals and researchers explaining and highlighted the importance of urban mobility concept, and was doing some group work. In group work, the thirty participants were splitted into six groups to looking for the issues of urban mobility globally, and proposed the novelty concept to deal with the problems. The results of each groups would be presented and evaluated by professionals and researchers in this field. Three promising mini research presentation was granted for the first place, the second place, and the third place respectively as the potential research future in this field. Fortunately, I and my friend, in group six, were nominee as the second place. As regards to our group-six members, we are quite diverse where I came from Tokyo Institute of Technology, Mr. Rohit from Chalmers University of Technology, Mr. Anirudh from Politecnico Di Milano, and Mr. Sandro from ETH Zurich. Together we proposed the new concept of mobility network with integrated electronic pods to solve last-mile connectivity and congestion reduction in large cities. At the end of this event, I and the other participants were exchanging our linkedin to keep in touch in the professional way.

④ Program participants

The online summer school was attended by 30 participants, which were 8 from home university (RWTH Achen), 12 from Politecnico Di Milano, 3 from Chalmers University of Technology, 3 from ETH Zurich, 2 from Tokyo Institue of Technology, 1 from TU Delft, and 1 from Hongkong University of Science and Technology.

⑤ Any difficulties you faced during the online program

During the event, I did not found any problems or troubles as well. It was running smoothly.

⑥ Outcomes of your participation in the program

In my view point, the event was successfully to give and highlight the issues of urban mobility concept into some lectures and collaborative work among the participants. I can say that there are three benefits from this online summer school programs, event it was only three days. Firstly, the lectures explained about the fundamental aspect of urban mobility, such as urban mobility development and mobility provider, and the small aspect in urban mobility concept, like vehicle-specific mobility. Furthermore, we were grouping into some groups in order to get the knowledge more comprehensively. Collaboration thoughts and experiences from different perspective of participant were giving the efficiency way to learning and thinking about the current situation of the urban mobility, where it was finally came up with the novelty presentation that we assume as the best solution toward this matter. Lastly, I think that it is very important to learn from the leaders, and this international summer schools helped me to learn from top academics and professionals who are typically busy and often inaccessible during the academic year.

⑦ Any advice for students who wish to participate in a similar type of online program

To those who are familiar with this program theme, this program was recommended due to its experience with presenting the credible speakers toward their experience and expertise of this theme. And to those are unfamiliar with this program theme, you should give extra effort to do

some mini-research observation as brief information. Ultimately, this event was totally suggestion either to the familiar and unfamiliar ones because it will help you to learn about urban mobility concept from top academics and professionals who are typically busy and often inaccessible during the academic year.

IDEA League Summer School 2020 –Online Course-
<Name of Summer School>

Report Date 2020 YY 10 MM 14 DD

Your Name	**********		
Affiliation at Tokyo Tech	School of ********** Dept. of **********		
Student ID#	**********	Current academic program year	M1
Program theme	Urban Mobility Concepts		
Program period	2020 YY 09 MM 15 DD to 2020 YY 09 MM 17 DD		
Posting to the web	This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include / Exclude		

Report contents

① The reason you joined the program

The topic of this year entitled “Urban Mobility Concepts” itself perfectly matches my interests and field of professional development, which is related to transport development and logistics. Moreover, the supervisor of this program is the Institute for Automotive Engineering (ika) of RWTH Aachen University. They are truly the top-class institute in automotive engineering, who is leading and developing various innovative concepts for next-generation vehicle developments.

My current works correspond to the main aspect of this program such that urbanization, digitalization, and general environmental changes are leading to a rethinking in society regarding mobility. With the advancement of digitalization, transportation technology, and the rapid growth of urbanization, the trend and volume of urban transportation dramatically shift from one scheme to another. Many people nowadays change their behaviors much easier and faster compared to the past. It is necessary to come back and rethink about the future and the possible prominent solutions on how to ensure sustainable mobility. They could be either technological innovations or simply the more effective implementation plan. Therefore, I would like to investigate and combine mobility and vehicle concepts with technology in my current works as possible assumptions and potential constraints.

In conclusion, the program can serve me the ideal platform to discuss the new vehicle concepts and developments in the transportation sector on a high academic level. It can also provide me the opportunity to connect with scholars and students from various academic and cultural backgrounds while testing my limits and capabilities.

② Pre-program preparations

- Collect information

I checked the information about RWTH Aachen University and the recent urban mobility in the European context. I researched the upcoming trends, popular topics, and cutting-edge technologies that are related to transportation fields in Germany and other European countries. It is quite challenging since the background of European countries is vastly different from Eastern countries, especially Japan.

I even need to check and understand the typical components and elements of the European cities.

- Contact and request from program organizer

There were two emails from the RWTH Aachen University. The first one was to inform the date and time, and the basic requirement such as Zoom installation, and the usage of the online visual collaboration platform, Miro. The second was simply to inform the Zoom link, and program reminder.

③ Program contents, activities

- Platform (Zoom, Microsoft TEAMs, Cisco Webex, Google Meet)

We mainly used Zoom as the main communication channel. Daily introduction, lectures, group works, presentations, and even ceremony proceeded within the Zoom environment. The zoom breakout room function was used for the group works. Moreover, they also created the WhatsApp for the informal conversation where all participants can discuss any topics, not limited to lectures and group works. Miro was also recommended to us as a visual online collaboration platform to gather the ideas from all members and develop the project together. Besides, we decided to simply use Google Slide for the final presentation.

- Schedule

It was a 3-days program. It started from 8:00 - 17:00 (CEST), so it was from 15:00 - 24:00 (JST). The first half of the first day was comprised of the opening ceremony, greeting messages from RWTH Aachen, and the IDEA League, and the group work. In the afternoon, we had a lecture from ika RWTH, and MOQO. The second day had two lectures from ika RWTH and McKinsey. Other than that, we had the long group works in both morning and afternoon sessions. On the final day, we had the lecture by Canyon Bicycles, and group work in the morning. The competition (final presentation) was held in the afternoon, and award and closing ceremony.

- Activities (Lecture, workshop, presentation)

Regarding the lecture, there were five lectures from many experts from various fields and backgrounds. Two lectures about cutting-edge technology and advanced research were from ika RWTH. Two interesting lectures from the start-ups specializing in urban mobility were held by MOQO and Canyon Bicycles. Finally, one lecture about the challenges and the future of mobility was provided by McKinsey.

The group work session was the majority in this program. Each session was around three hours, and we had five sessions in total. We started with our interests in urban mobility and figured out the issues that all team members were interested in as the theme of the final presentation. We analyzed the issues, developed the solutions, and discussed the technology and even policy implementation.

- Networking with other participants

It is difficult to have an opportunity to communicate with other participants who were from different teams due to the limitation of Zoom. We mainly just exchanged and talked with the team members during a short break within the group work session. However, we still had WhatsApp as the communication tools, and some lecturers and staff also shared their Linkedin account for further contact.

- Certificate of program completion, any awards

There were awards for the top three presentations. All participants received the certificate of participation.

④ Program participants

There were around 30 participants from seven institutes such as RWTH Aachen (8), PoliMi (12), ETH (3), CHALMERS (3), TU Delft (1), HKUST (1), and Tokyo Tech (2). All participants were divided into groups of 5, a total of 6 groups. In my group, we consisted of 1 from India (TU Delft), 1 from Italy (PoliMi), 1 from Georgia (PoliMi), 1 from Germany (RWTH Aachen), and 1 from Thailand/Japan (Tokyo Tech). It showed the diversity among the program where participants came from all around the

world even though they were from the same institute.

⑤ Any difficulties you faced during the online program

The first difficulty was the difference between the time zones. Central European summer time (CEST) is UTC+2, while Japan standard time is UTC+9. The time difference is seven hours which is still acceptable but to start the session from 15:00 and finish at 24:00 is a bit challenging to focus and effectively collaborate with the team members. It affected my bedtime and wake up time a lot, but since it was only for three days, it was still possible to recover without any painful side effects.

Another difficulty is the limitation of Zoom and the online environment. It is always a problem, and especially for the session that lasted long about three hours. I found out that it is not just me, but all team members were exhaustive from the online discussion.

⑥ Outcomes of your participation in the program

I have learned various things from this program including cutting-edge technology and research from ika RWTH, market insights from both start-ups, and the future mobility trend from McKinsey. All lectures reminded me a lot about the importance of urbanization, digitalization, and general environmental changes in the future of society, especially transportation. It confirmed that the technology is still important to cope with the on-going urban mobility issues, but the necessity of an effective implementation plan and the role of the regulatory agency are also as important.

In the group work sessions, our team had discussed the urban air mobility and the unmanned aerial vehicle in historical European cities. It is quite interesting to find possible future challenges and constraints, and how they will be evolved in the decade. For example, we covered the limitation of building infrastructure in European cities such as rooftop that lead to the landing problem of drone delivery. All these discussions will benefit my works on urban freight mobility in the future a lot.

Lastly, it was a great experience participating in the community that is full of inspiring people who share similar interests. Although it was a short time, I was impressed and motivated through the discussion with other great scholars and students.

⑦ Any advice for students who wish to participate in a similar type of online program

I will recommend that you need to research about the program a lot and confirm that it matches your interests. Unless you are interested in the theme of the online program, participation could be very exhausted and it might drain your energy that will influence your performance, creativity, and even inspiration. However, if you are confident about that, prepare yourself not just the information and knowledge, but also your health and daily habit for the massive difference in the time zone.

IDEA League Summer School 2020 – Online Course

Chalmers University Summer School

Report Date: 2020/10/09

Your Name	Muhammad Reza D. Bagus		
Affiliation at Tokyo Tech	School of Environment and Society Dept. of Transdisciplinary Science and Engineering		
Student ID#	19D58236	Current academic program year	D2
Program theme	International Graduate Program (IGP) – C		
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Report contents

① **The reason you joined the program**

I am enrolling a Doctoral Degree for Supply Chain Logistics and Management as my research topic. I have an eagerness in developing a new insight in engineering field as well as expanding my future career and capabilities essential to the novelty theories about these areas. At least, there are four considerations of mine to choose this summer school course program and campuses as well. First and foremost, analysis and modelling road user behaviour course are linear with one of research theme in our laboratory. I believe that the proposed program could help me to enlarge my insight from other perspective on my current research topics. Moreover, I also believe that the program have implication to develop and simulate the supply chain logistics and management better. Secondly, it can help me to create my memorable international experience and I hope that through this event offer me a unique means of gaining professional experience and discovering new opportunities too. Thirdly, I want to expand my friend and networking with other professional from another fields too. Apple's Steve Jobs has often repeated that "innovation distinguishes between a leader and a follower." In order to become a leader, it is very important to learn from the leaders, and this international summer schools can help me to learn from top academics and professionals who are typically busy and often inaccessible during the academic year. The last, it can gain the new knowledge and transferable credit. Speaking frankly, the topic of this summer school is quite new for me and even I don't have any knowledge about it too. With this program, I believe that it can help to brush up on the subject I'm not confident about.

② **Pre-program preparations**

I collected some information regarding the event before main event was held by virtual meeting software, like Zoom. Speaking frankly, I more like to visit the campus, because I would able to

really feel the experience to connect with new friend from around the globe and feel the experience of different study-cultured in the Chalmers campus. Furthermore, the organizing committee was reliable and helpfully to provide some information regarding the program.

③ Program contents, activities

The program was conducted by Zoom within five days courses and trainings respectively. The courses was provided by professors in Chalmers University and professionals, while the training was running with matlab simuation teaching by associate professors in Chalmers University. he aim is to enhance knowledge on the topic, this course embraces a multidisciplinary approach to provide the theoretical foundations and the experimental methodologies to analyze and modelling road-user behavior. The outcomes from this courses and training was as followed: explain the importance of analyzing and modelling road-user behavior, for improving road safety; illustrate different types of human factors theoretical driver models; compute relevant quantitative and qualitative metrics, to analyze and model road-user behavior; identify the challenges in the analysis of real-traffic data from naturalistic studies; compare the models of road user behaviour and their applications; illustrate the currently available tools for the virtual evaluation of active safety systems.

④ Program participants

The online summer school was attended by 31 participants, which were 12 Master's students and 19 PhD students. Moreover, the participants was coming from different campuses, such as 11 RWTH Aachen, 7 TU Delft, 3 Politecnico di Milano, 2 Chalmers, 2 ETH Zürich, 1 Tokyo Institute of Technology, 1 Tsinghua University, 1 University of Florence, 1 Stellenbosch University, 1 Tsukuba University, 1 University of Queensland

⑤ Any difficulties you faced during the online program

During the event, I always faced unstable network hence it made me disconnected whole the time. Besides that, my laptop was running slowly during the course with matlab simulation due to so many programs were operated, such as Zoom, Matlab, Adobe, and Ms. Word. It resulted my laptop was damaged. Hence, I decided to not follow 2 days the event until the end.

⑥ Outcomes of your participation in the program

In my view point, the event was successfully to give and highlight the issues of road users behaviour into some lectures and collaborative discussion among the participants. I can say that there are three benefits from this online summer school programs, event it was only three days. Firstly, the lectures explained about the fundamental aspect of theoretical framework for modelling driver behavior, and bring in to collaborative simulation model, such as quantitative analysis of driving simulator data, sensors for active safety systems, and assessment of safety benefits associated to the introduction of active safety systems. Furthermore, we were grouping into some groups in order to get the knowledge more comprehensively. Collaboration thoughts and experiences from different perspective of participant were giving the efficiency way to learning and thinking about the current situation of the road user behaviour concept. Lastly, I think that it is very important to learn from the leaders, and this international summer schools helped me to learn from top academics and professionals who are typically busy and often inaccessible during the academic year.

⑦ Any advice for students who wish to participate in a similar type of online program

To those who are familiar with this program theme, this program was recommended due to its experience with presenting the credible speakers toward their experience and expertise of this theme. And to those are unfamiliar with this program theme, you should give extra effort to do

some mini-research observation as brief information. Ultimately, this event was totally suggestion either to the familiar and unfamiliar ones because it will help you to learn about urban mobility concept from top academics and professionals who are typically busy and often inaccessible during the academic year.