

JUACEP Internship Report

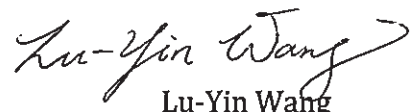
Recognizing Japan as a global leader in science and technology, I am very glad to be a part of this summer scholarship program. As a master's student of Aerospace Engineering at the University of Michigan, Ann Arbor, I am committed to applying my engineering knowledge to the real-world scenario while learning professional and interpersonal skills with the faculty and my fellow students of Mechanical Engineering at Nagoya University, Nagoya, Japan.

Under the instruction of my teaching assistant, we performed several experiments in the regular and fractal square grid turbulence. The velocities of flows and the concentrations of Rhodamine B were measured simultaneously by means of PIV (Particle Image Velocimetry) and PLIF (Planar Laser Induced Fluorescence). Albeit, I took a turbulent flows course before, I was not very familiar with the details of this experimentation. Hence I had to catch up by reading many related papers published by the professors of Nagoya University as well as by the researchers of Imperial College London, and I presented the paper summary at our weekly meetings. In order to fully understand the physics, I reviewed, reviewed and reviewed. Little by little my vague picture of turbulence became clearer. Especially the moments when professor stopped my talk to ask me questions, I learned the most. No doubt the faculty and students of Nagoya University have strong physical understanding and engineering aptitude. My research project in Japan has significantly stimulated my interest in further studying turbulence.

JASSO Scholarship Program not only offered me a great opportunity to learn how to be a good researcher, but also provided me with many valuable lectures and automotive factory visits. Located in Aichi Prefecture, Nagoya being surrounded by automotive industry, like Toyota, Lexus, Mitsubishi, etc. implies how much people can benefit from this prosperous city. Indeed there were many lectures in this program given by the engineers from Toyota and its luxury brand, Lexus. We also visited assembly lines in Toyota and Mitsubishi factory and were all amazed by the robotic workers, especially the robot trumpelist performing *somewhere over the rainbow* in the lobby of Toyota museum! Besides automotive field, the topics of the lectures mainly focus on renewable energy technologies, in the wake of Fukushima disaster, making me become much more aware of this issue. Topics include smart grid framework, electric car overview, fuel cell car development, next-generation batteries exploration, etc. To be more involved in this field, I am also seeking engineering jobs in some green energy companies like Xcel Energy.

Living in Japan is not easy if one doesn't know Japanese. Another highlight of this program was the Japanese course. Our Japanese teachers were so patient, kind and experienced that I learned not only the language but also from their positive attitude. They helped me walk through the tough period every beginner encounters, and now I have grasped the tips to learn Japanese and its deep culture.

After studying in Japan under the aegis of JASSO scholarship, I have become more passionate about research. At this juncture of my life, though the future is uncertain, I am confident that my drive, commitment, and enthusiasm I have gained in this program will lead me to a better life.



Lu-Yin Wang

Aerospace Engineering
University of Michigan, U.S.A.

August 24, 2012



Nagoya university
JUACEP

Japan-US Advanced Collaborative Education Program
Earn Engineering Experience in Nagoya



JUACEP STUDENT EXCHANGE REPORT

*Mudit Rastogi,
MSE, Mechanical Engineering,
University of Michigan, Ann Arbor, USA
Nagoya University, Nagoya, Japan (1 July – 31 Aug, 2012)*

Aug 21, 2012

I am a graduate student at University of Michigan and in July 2012 I had one of my most memorable life experiences. I embarked on a student exchange program called JUACEP to Nagoya, Japan. This is indeed the furthest I had travelled to the east. I was always fascinated with the Japan and wanted to travel here since I was a kid. It offers temples, shrines, beautiful Japanese gardens; kabuki, the treasured form of theater utilizing intricate scenery, costumes, and makeup; sumo wrestling and kendo, the sword fighting of the samurai. And then there is Japanese art, from woodblock printing to tattooing. Sometimes this exchange program seems like a dream and I wish that this dream can last for one year or more instead of only two months so that I can learn more about this wonderful country. On a personal level, this exchange is a milestone of my life chapter, with ample experiences of interacting and making new friends with different cultural backgrounds.

Nagoya University is a renowned university and one of the former nine imperial universities. Though the campus is small as compared to UM but I found it well maintained and beautiful. Nagoya on the other hand is the third largest incorporated city in the Japan with magnificent temples, museums, shrines, markets and nightlife. In addition, on urban planning level, there are well preserved medieval buildings standing along modern architecture, which gives this city its charisma.

I chose Prof Iguchi Lab, Dept. of Quantum Engineering as my research lab. Coming from Mechanical Engineering background everything was very new to me, not to forget the cultural shock, language problem, food etc. But the students and my advisors took great pain to organize activities to let me settle in fast. These include activities like pub mingling evening (welcome party) to weekly seminars / presentations for me to get to know others and their areas of research. The fellow students in my lab were helpful and friendly who helped me in my experiments. However at times I feel they have a very limited scope of knowledge when it comes to world affairs, culture, geography and history. They are less curious in world affairs and hesitate to open up a conversation. I strongly feel they should work on overall intellectual development and not only in their technical field.



During my stay here in Japan for two months I travelled to different places like Kyoto (Gion Festival), Nara, Osaka, Tokyo, Tsukuba, Hakone, Fuji, Takayama and Kamikochi. I see that through all Japan's modernity runs a deep reverence for the past and a fervent belief in tradition that makes travel in this country a very positive and rewarding experience. Although 20th-century technology plays a powerful role in the daily life of the Japanese, most Japanese maintain a centuries-old tradition of hospitality and graciousness. If you can see the Western touch in Japan's urban areas, you can also find many glimpses into Japan's past in the traditional architecture and slower-paced lifestyle of the countryside. Most people when they think of Japan think of things like Mt Fuji, Bullet trains, sumo wrestlers, samurai warriors, tatami mats and sushi. Though I wanted to see all of them, I couldn't experience everything in these two months of my visit to Japan, but I had a good taste of Japanese life and culture by simply getting out on my own. Such everyday experiences like wandering the basement food halls of big department stores, riding the local trains and subways, freeloading with everyone else in the book stores, walking past noisy *pachinko* parlors and dodging the hundreds of bikes and riders on the footpaths - it's all a window onto the way ordinary Japanese go about their lives.



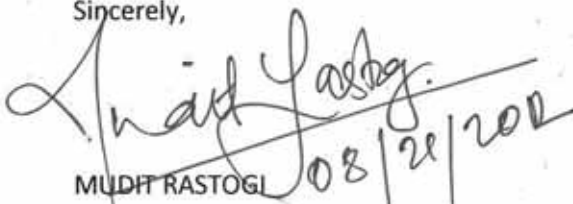
I had this opportunity to attend the Summer School on Radiation Detection at Tsukuba Science City. This was a great experience for me as I met people from different establishments like KEK, AIST, University of Tokyo, Shizuoka University etc. While talking to a senior researcher in AIST on Japanese culture and reason for its technology might, he told me a famous Japanese saying " 継続は力なり。 " meaning "Perseverance is strength", which I think I will take back and remember all my life. I am happy that in those two days at Tsukuba, I learnt something about Japanese work ethics which will make me a better and successful person in future. There is so much to learn from Japan that will influence your life forever.

The beauty of the land, the changing views of Mount Fuji, and the contradictions and complexities of its culture are never forgotten.

It's now time to go back to my University in USA, but I must say I am reluctant to do that. It seems like I have just settled down to life properly in Japan and want to learn so much about this country. I must say that this program has been a memorable experience for me. My perspective of the world has broadened and character has been shaped to be more open minded and friendly. Given a chance I would love to come back to Japan to work, study or just simply to live life.

I would like to thank all of JUACEP team for giving me this opportunity, my lab mates for helping me in my study experiments and for the good time I had in lab. Many thanks and my gratitude to Prof Iguchi and Asstt. Prof H. Tomita for their kind guidance.

Sincerely,


MUDH RASTOGI 08/28/2012

JUACEP Internship Report

When it comes to seeing places and learning cultures around the world, I always thought that I have had good exposure. I expected the JUACEP program to be just another experience. But it turned out to be much more than that. I honestly admit that the Japanese aka 'Nihon' experience has been the best experience of my life. They say two months in not much of a time to transform a person, but I admit that these two months have transformed me and have made me a wiser and a more learned person. It is through the JUACEP program that I learned to strike the right balance between work and fun as opposed to the geek I was before. The most beautiful thing about the program was its structure. It was a harmonious mix of course work, research work and extracurricular activity. While the coursework was encompassing for the automotive freak that I am, the Japanese language classes were rigorous enough to acquaint me with the language which was so helpful in the five day tour of Japan I took all by myself. Thanks to both the Sensei for their effort. My research team was very co-operative and gave me freedom and space to do my work which made my research fun and interesting. The friends I made in the research group are friends for life and I will certainly come back to Japan often to meet and share a drink with them. I hope to return favor by showering hospitality on the Nagoya students who are currently in Michigan as part of the JUACEP program, once I get back there. The program was beautifully studded with field trips and factory visits which helped cut the monotony of the lectures and brought more flavor to the entire program.

Because of the JUACEP program, my enthusiasm towards a study abroad program has skyrocketed. Honestly my main motivation behind applying to the JUACEP program and coming to Nagoya University was academics; to build a good profile; a program like this would stand out on my resume. But, my thinking has changed now. If I were to apply for another study abroad program, it would certainly be for the cultural experience more than anything else! I am so mesmerized by Japanese culture right now that if I were to live here for a couple more months, I am sure to become a 'Nihonjin'. My accent has started to change for one; With all the Japanese conversation, I am starting to forget the English I know; I have started loving raw fish and I have become an anime fanatic. In fact, I think I will face a 'culture shock' scenario when I go back to Michigan. The land of the rising sun has given me new experiences and there is a lot I will take back home. Few of my first timers include my encounters with cars and their manufacturing (Toyota, Mitsubishi and Mazda plant visits); the experience of staying alone and having an entire home for myself; trying out exotic Japanese cuisine including Tacoyaki, Okonamiyaki, Unagi, Momaji Manju, Kobe beef and of course Japanese Sake; the experience of travelling Japan all by myself and managing to communicate with people with the little broken Japanese I know and most of all, getting inspired by the 'never say die' spirit of the Japanese people to rise up like a phoenix from disaster (Hiroshima bombing, Kobe Earthquake and recent Fukushima disaster).

So, in all, I have had the time of my life here and I will be carrying back memories which I can boast about to people for the rest of my life. In future, if any such study abroad opportunity opens up, I would be the first person to grab it with open arms. But, I am not sure if that experience would be as good as this one. I would also like to thank the JUACEP staff for being so amicable and warm in making us feel at home away from home! I just have one request. Please extend my program by another two months.....

Nandagopalan Venkataraman

V. Nandagopalan

JUACEP Internship Report

JUACEP Summer Program 2012 at Nagoya University

I am one of the University of Michigan students participating JUACEP Summer Program at Nagoya University during July and August 2012. I am really impressed with this program that provides such a great opportunity to experience international study life. Before applying to this program, I have a lot of enthusiasm toward studying abroad in order to gain the familiarity of working with multi-cultural colleagues. This program could provide a concrete experience on that. During the 2-month program, there are several different tasks assigned to me. One of them is the intensive Japanese language class coming with 6 hours a week. Even though it seems to be tough and energy-consuming for newcomers like me, the very warm-welcomed environment from everybody at Nagoya University makes life here easier. The language class is very useful for living here because most of local people tend not to speak English. Additionally, it would also be beneficial for communication for international work in the days ahead. Besides, there are also technical lectures related to energy and automotive topics that are currently challenging issues. Those lectures, presented by experts in the related areas, broaden my viewpoint of new cutting-edge technologies very well. Furthermore, this program also gives a good methodology of conducting engineering research including hand-on experience. For my research theme, I am assigned to synthesize the diamond single crystals using high temperature and high pressure. Whereas I have not had the background in this area, I could learn it very fast because all of my lab-mates are very kind to help and explain unclear questions. With all of those, I feel that attending this program is one of the worth things in my life.

In short, this program is my first exchange-study program that really impresses me. I could gain great academic and social experiences and I am also very impressed with Japanese culture and their way of working life. This JUACEP program rises up my interest of studying or working abroad for the next possible opportunity.



Pattarawit Sae-Ong

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Fall in love with JUACEP Program

It was my first time to attend the study-abroad program; it was my first time to come to Japan; it was my first time to get used to live at a foreigner language atmosphere; and it was my first time to get involved in the research field. All these first-times make my days in Japan. I would like to express my gratitude to JUACEP program and Mr. ITO-my supervisor who offer me this precious chance. Everything is new to me here and I did have a unique experience here. We learned Japanese language-ありがとうございました, and the more important thing is that we have our own supervisor to give us his advice on our academic improvement. I also need to mention that we have a one-credit lecture that is given by super professional lecturers who are from different academic



background. Besides studying variety of skills, we also had two expressive factories- visiting trips in Toyota and Mitsubishi that make us feel more about high-technique and engineering pride. I

think I will come back Japan to seek another adventure after the JUACEP program.

At last, thank you for JUACEP program again to offer this adventure to us and I would like to attend more if there is another chance in the future.

Qiongyu Lou
2018.8.22

Experiencing Japan

Japan is a unique country, a different world altogether, thriving on delicious contrasts of modernity and historically traditional. The people are warm, welcoming and incredibly polite. Home to an ancient civilization, a booming economy, a huge population, *Nihon-koku* (日本国) is the land of the rising sun.

Japanese people have always been known for their thoroughness and civility. Their ability to rebuild their country faster than anyone ever expected after the devastation by last year's earthquake and tsunami reflects their culture's highest virtues: *Ganbaru*- to commit oneself fully to a task and to bring that task to an end, working with perseverance and *Gaman*- enduring the seemingly unbearable with patience and dignity.

This spirit and their welcoming nature combined with the scenic beauty bestowed upon Japan by nature, makes it a veritable tourist paradise. Add to that their technological brilliance, and you get a travel sweet spot for an engineering student! So, when I received the Japan Student Services Organization (JASSO) scholarship to study in Japan over the summer, I poised myself to set off on a memorable journey to celebrate Japan and its people, to experience the unique magic of this country!

Japan never fails to surprise you. Travelling in Japan is a remarkable experience. From staying in a capsule inn to the traditional Japanese Ryokan, the very realistic plastic food displays outside Japanese restaurants, soaking naked in an Onsen with strangers, to sitting in a Yukata on Tatami mats eating fried fish and sushi, drinking hot sake with your teachers while enjoying yakitori, is something that you will remember for the rest of your life.

Japan is a good example of how the old and the new can coexist peacefully, side by side, working together. They adopted the western technology but never abandoned their culture. They expanded the horizon of knowledge, pushed the boundaries of science and technology but still preserved their ancient religion. Japan makes you wonder at every instance, how people can be so polite, civil, disciplined, never losing their temper, all the time. The very way they do things makes you awed.

Studying abroad in Japan is one of the most enriching, fulfilling, interesting and educationally stimulating experience of my entire life. This program gave me a chance to further my academic goals in a new country, allowing me to immerse myself in a new culture, a new language, making me aware of a whole new world altogether. This not only provided me with a global network of friends but also gave me a chance to learn more about myself in a new and exciting lifestyle. Globalizing myself helped me understand how me, as an individual, fits into this world.

Studying in Japan made me realize the importance of keeping my own traditions alive while sharing them with others. It made me see how my own homeland fits into this humanity, through the eyes of a different culture, making me able to precisely reflect on my own moral values and beliefs long held. I now see the world through a new set of eyes, more mature, tolerant, and realistic. This study abroad program has given me so much; I have learned so much, I am more than ready for my next opportunity to explore a new culture. I'll return home a wiser individual and ready to face any future challenges head on.

- Sajeev Gulyani, University of Michigan, Ann Arbor, USA



JUACEP Internship Report

Sean Bong
Zies

The whole experience is nurturing, eye-opening, culturally dazzling, breathtaking, and there are many more words to describe my wonderful experience in Nagoya University, Japan. The first step out from the airplane, I was positive that the whole experience was going to be a lovely and exciting one. The weather was hot and humid, much like my hometown in Indonesia, but to me it was the perfect weather and condition for an adventure and exploration.

As I explored Nagoya University for the first time, I was amazed at how the buildings are organized in an orderly fashion. The people in Nagoya University are helpful and friendly, greeting me with a kind of warmth that I would get back at home. I have been away from home for a month now, yet I do not feel much different at all with the kindness and warmth that the people in Nagoya University provide.

The campus was packed with liveliness and the sound of bustling students, walking around and chatting about their research lifts the whole ambience of the university. The professors are also curious about each of the students and carefully select assignments that would match the interest of the students and at the same time greatly benefiting them as well. One of the traits of Nagoya University students that I absolutely respect is the passion and dedication to their research. Most of my lab members would spend half of their day, equivalent to 12 hours of researching, studying and working together in the lab. They are dedicated to the extent of sleeping in the lab at late nights when they are tired from work and resuming once they feel refreshed. Seeing all these great activities surrounding me, I have my absolute respect to the Japanese spirit when it comes to work.

Research and work aside, I have been exposed to the beautiful and astounding places Japan provides. Starting from Nagoya, I have been blessed with the opportunity to explore the Nagoya-ko Minato Matsuri, or the Port Festival. Crowds of people dressed in Yukata (authentic Japanese clothing) patiently waits for fireworks while sitting down with picnic mats covering their ground. The bright lights and echoing blasts from the fireworks still resound in me up to this date, and I would have never forgotten that experience. My group then traveled to Osaka, Nara and Kyoto to experience the modern side of Japan, as well as embracing her traditional aspects. It was a dream come true to be able to experience Japan at its best.

With these experiences, I am further enthusiastic in studying-abroad, experiencing different and unique cultures that satisfy my curiosity. This JUACEP program does not only enlighten me in my research program, but also it broadens my knowledge towards the understanding of the Japanese people. I hope that I would be able to explore other countries in the future, contribute my knowledge and effort to the research community, and at the same time enjoy the different cultures that the world provides. This program would not end my exploration in Japan; I would definitely be back again to enjoy and experience this amazing country all over again.

JASSO Scholarship Essay – JUACEP Summer Program 2012

My 2 months of association with Nagoya University has been an exciting, rich and well-rounded experience. During my stay, I worked on Uncertainty Quantification of Fission Product Inventories in Professor Yamamoto's lab at Nagoya University. Considering my coursework in computational methods at Michigan, I found my work at Nagoya University closely complementing my academic background. The fact that the research finds its direct application in planning the aftermath of Fukushima incident was a source of immense motivation for me.

An area that I initially faced difficulty with was that of nuclear engineering but I was able to learn the preliminary concepts most relevant to my research during the first couple of weeks at the lab. I would like to acknowledge the help extended by Professor Yamamoto, Professor Endo and the entire research team in this regard. In addition to the research project, I found the JUACEP Summer Program curriculum extremely conducive in exposing students to contemporary Japanese culture and latest technological developments in Japan.

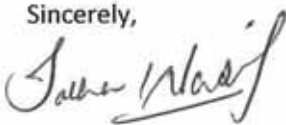
I found the intensive lecture modules particularly helpful to develop a sense of direction in which the Japanese industry is focused. Japan is globally considered to be a hub for technological expertise and I feel myself fortunate to be engaged in valuable exchange of ideas with Japanese industry experts through the JUACEP Summer Program 2012. In addition, the visits to Toyota Motors and Mitsubishi Motors manufacturing facilities were an extra-ordinary opportunity to witness engineering practices in Japan first-hand.

Despite the cutting-edge research and technological environment that I remained a part of, if I were to name the single biggest take-away from my stay in Japan, I would pick my experience of Japanese culture. Within these 2 months I got to visit many major cities in Japan including Tokyo, Osaka, Kyoto & Nara and I witnessed the rich history of the country that has shaped how modern day Japan looks. Basic knowledge of Japanese language that I learnt through Japanese language classes during my stay were instrumental in communicating with local people and experiencing the true spirit of Japan.

I believe this study-abroad program was a substantive and highly rewarding experience for me. It helped me grow on the learning curve by working and studying in an academic environment that is considerably different from the one I experienced in the United States. I have always valued the importance of exposure to cultural diversity in character-building and I believe my brief but rich experience in Japan will add immense value to my personal and professional profile. This was also my first formal experience of a study-abroad program; and it has strengthened my longing to participate in more such programs in different cultural settings. I believe these experiences will set me apart from my peers and give me a distinct competitive advantage in my future endeavors.

I would like to express my deepest gratitude to the entire JUACEP Team and Professor Yamamoto's Lab Group for hosting the program and making my stay in Japan memorable and meaningful. I would also like to thank Professor Kurabayashi at the University of Michigan for facilitating my participation in the program. I highly value the relations that I have developed in Japan through the program and I look forward to having a lasting association with Nagoya University.

Sincerely,



Syed Talha Wasif

JUACEP Internship Report

The reason why I chose to come to Nagoya University in Japan is that I can pick up some basic and authentic Japanese. As everyone knows, Japan came across a big earthquake, which results in the shortage of power in Japan. However, it is this disaster that pushes the development of Japanese EV, PHEV, FCV, etc. And in the near future, Japan will dominate the market of EV, and Japanese cut-edge technique of EV will lead the whole world, possibly even better than that in USA. Moreover, personally, I believe EV currently is becoming more and more significant, since the traditional gasoline is being used up, and it is high time that new energy such as fuel cell, or electricity should be used for vehicles. Then learning some Japanese is helpful for me to further study Japanese EV technique.

Furthermore, the intensive lectures on EV, PHEV, FCV, CFRP, given by the working staff of some famous car companies like Toyota, Honda, Japanese Energy Department, are very excellent and helpful for my next semester study in University of Michigan.

In addition, the visits to Toyota and Mitsubishi vehicle companies are great. During the visit, I learnt some smart ideas of the vehicle assembling line, and I was impressed by the large-scale auto-production by many robots. What's more, I experienced the EV driving in Mitsubishi company. The driving was so quite and the vehicle was as fast as the

traditional gasoline powered vehicle.

The research in the lab on crack healing helped me learn how to use some useful machines, such as SEM, High Electric Machine, Crack Introduction Machine, and so on. Besides, three presentations about my research in front of audience helped me hone my presentation skill.

Additionally, I make many friendly Japanese friends, and learn a lot of Japanese culture. If next summer, we still have such chance to visit Japan, I will definitely choose to come here again. I am interested in Japanese language now, and after I go back to America, I will continue working hard on Japanese. I hope I am able to speak fluent Japanese by my next visit to Japan.

Yue Ning
宇宇