

Findings through JUACEP

Name: FU-LONG CHANG

Affiliation (Dept & Univ):

Participated program: Short (Summer) 2014

Research theme:

Advisor at Nagoya Univ: Prof. Susumu Hara

Affiliation (Dept.): Mechanical Engineering



In these three months, I spend a lot of time staying in the lab and do some research topic I am not familiar with. At the very beginning, I have a little bit struggle with the programming of my simulation model. Fortunately, I overcame it very quickly and came out with a solution of my research topic later. After first month, I developed almost all of the theory of my algorithm and finish up all the simulations. At the second month, I start to write my research report and I am going to submit part of my paper to a conference, CACS. The rest of it is going to submit to IEEJ.

This is my first time coming to Japan, every thing is very exciting and interesting. I went to a lot of places like Nagoya Castle, or somewhere far from here such as Osaka, Kyoto, or Tokyo. I have tried many new food like Japaness pizza, or Japaness green tea. It is so nice. Beside, I know more about Japaness culture and their working style. Three of my professors are very nice to me, and give me many advices about researching or some fun places. I always hanging out with my labmates, and go to bar having some small beer. I am so surprised about the alcohol Japanese people can drink in one time.

Furthermore, I am an independent travel lover. I believe that Japan is the country that most suitable for self-travel. First of all, Japan is one of the safest countries in the world. I once lost my wallet in my trip to Kobe. Fortunately, I get it back very fast. Second, every Japanese are very kind and very willing to help people who get lost. Like when I get lost at Tokyo, and I ask a pedestrian for help. He is so kind that he help me find the address of my hotel, and he also bring me to the hotel. All of them are so nice.

I really appreciate every people in this program. My professors, my labmates, my TA, and most important the Juacep Office. Mrs Chiharu and Mrs Tomoko really help us a lot, and very kindly help us with many problem we have. Thanks every people in this program and the Nagoya University and University of Michigan to give me such a awesome experience in Japan.

Findings through JUACEP

Name: Taehee Jang

Affiliation (Dept & Univ): Department of Electrical Engineering,
University of Michigan

Participated program: Short (Summer) 2014

Research theme: Design of a Multifunction Probe Used for Microwave AFM

Advisor at Nagoya Univ: Prof. Yang Ju

Affiliation (Dept.): Mechanical Science and Engineering



I joined Prof. Yang Ju's group for 3 months and my research topic was the design of multifunction probe used for microwave AFM. I have studied the basic concepts and applications of M-AFM. In order to improve the performance of previous M-AFM probe tip, I have designed the new M-AFM probe tip by using the Microwave simulation tool and compared with the results of the previous probe tip. In addition, the M-AFM is able to measure the force according to the different materials. Thus, to figure out the kind of forces, I have driven the force equation to calculate electromagnetic force from the probe tip.

During this period, I could enjoy not only researching about M-AFM as well as interacting with many people in Japan. I had many Japanese friends in the Nagoya University and we had good time together. We saw baseball game with other friends in Nagoya Dome. When I joined this program, I felt nervous because I can't speak Japanese well. But, Japanese friends taught Japanese language and have a lunch together. Although my Japanese is improved, it is not enough to discuss with others. Through this program, I am motivated to continue to study Japanese. Besides of the research in Prof. Yang Ju's lab, I traveled with other friends around Nagoya. We have been to Nagoya castle and Osu temple and went to hot spring to take a bath in Nagoya. In addition, there are many activities in this program. We visited the Toyota Company and INAX museum for field trip, and we had BBQ in the sea. Except that, we had hand craft session to assemble the combust engine, and then we tried to start our assembled engine. Moreover, there are many interesting lectures that we could attend.

Finally, I could have a lot of experiences for both research and life in Japan through the JUACEP program. I could know more about Japan and I have gotten very good impressions for Japanese people and company.

Findings through JUACEP

Name: Songyao Jiang

Affiliation (Dept & Univ): EE:S University of Michigan

Participated program: Short (Summer) 2014

Research theme: Load Frequency Control

Advisor at Nagoya Univ: Prof. Suzuki

Affiliation (Dept.): Electrical Engineering and Computer Science



After more than two months research in the lab. The strongest feeling of mine is that Japanese people are all very hard working. Some people in my lab come before 10 am and work until 10 pm every day. All the students and staff in my lab are also very serious to their job.

Japanese people are also very polite. The clerks of convenient shops usually say a lot of Japanese honorific to me. People on the street also say a lot of thank you and sorry to each other. They make themselves a good image to me. In general, I think most Japanese people are very kind and helpful.

The only problem is that Japanese student are not good at speaking English. Professors' proficiency of English are much better than students'. I feel difficult to communicate with some Japanese students. I was wondering why this happens in Japan which is a modern advanced country with high technology. Do they need to read English paper for academic purpose? Do they post English paper in any English Journals?

After these days, as I experienced, I find an answer to these questions. Japan has a complete academic environment. There are many academic journals published in Japan. As Japan is an advanced country, Japanese journals are in very good quality. Therefore, Japanese students are used to read Japanese papers in their studies. In most cases, it is not necessary for them to read English paper for reference. In addition, many important foreign journals are translated into Japanese and published officially. This provides a good way for them to read foreign journals in Japanese. I believe the above lead to the situation that it is not that necessary for Japanese student to learn English. So the average English level of Japanese student is poor.

However, this situation depends on the major area of student. In some area, where academic communication is more frequent, for example biology, the average level of English proficiency is much higher. The number of international students is also a symbol of the frequent communication with foreign countries.

During my study in the lab, I attend some meetings with the lab members. One kind of meeting is held every week. In such meeting, students report their recent progress of researches. After the presentation of students, professors will ask a few questions and discuss with them. All the members will gain knowledge in such meeting. Another kind of meeting is when the master students report their total progress of their final thesis to the professors. This kind of presentation is more formal. For 1st year master, the presentation is about the direction and plan of thesis including some basic concepts. The presentation of 2nd year students are very detailed. The duration of the presentation is also much longer than those by 1st year masters. The presentation is mainly about the part they have already completed including the theories, references, experiments and results. They present their ideas and methodologies to the audience. I think the 1st year master students could benefit a lot from that. Unfortunately, the presentations are all in Japanese. I could only read the Kanji and understand 40% of the presentation.

JUACEP Experience

Name: Charles Lesmana Sie

Affiliation (Dept & Univ): Electrical Engineering, University of Michigan

Participated program: JUACEP 2014

Research theme: Human Activity Sensing and Recognition

Advisor at Nagoya Univ: Prof. Nobuo Kawaguchi

Affiliation (Dept.): Computational Science & Engineering, Nagoya University



This stay is not a brand new experience for me because this was my second time in Japan. Compared to the first one, I definitely had a better look into Japanese daily life and habit due to daily interactions with Japanese students in the university. My short enrolment in the JUACEP program has opened my eyes to different culture and lifestyle, inside and outside of my research lab.

I joined Professor Nobuo Kawaguchi Lab to work on a Human Activity Sensing and Recognition themed research. My research is titled a Correlation Coefficient Method to Count the Number of Human Steps. One of the students in the lab was working on another method to count steps, and he was a major help by providing his method's strengths and weaknesses. My research has been a very enjoyable and fulfilling. The coefficient correlation method is a very robust method to detect one human step over a long period of recording time. It overcome some of the weaknesses that the previous method possessed.

Since the beginning of my stay, the staff and fellow students had given me ample of support and help. They assisted me in learning java programming language, the lab's preferred programming language, and getting familiar to the application that the lab has been developing for the past years. It was good to obtain that information early, so that I would be able to get some background knowledge before I started my summer project. The weekly meeting of the lab was very helpful because I could always present my progress report in to the whole lab and obtain very useful feedback and suggestions from other students and staffs.

The lectures, which were organized by JUACEP, were very helpful to keep current on the technologies that are being developed by Japanese companies. These seminar type classes gave very informative overview about the manufacturing methods developed by industries in Japan. In addition, the handcraft exercise class was a very interesting experience as all the students were able to disassemble and assemble a miniaturized engine. It was very satisfying feeling to hear the roar of my engine at the end of the class.

Outside of my work, I also enjoyed my time doing other activities in Japan. These include sightseeing, visiting temples, and trying Japanese cuisine. My lab mates are also a very welcoming group of people. We enjoyed talking about different cultures, favorite movies, and favorite drinks. I also made many Japanese and other foreign friends outside of my lab. They made my stay in Japan very enjoyable and memorable. This experience of working and living in Japan is definitely one of a kind and I will cherish this memory for a very long time.

Findings through JUACEP

Name: Jin-Gen Wu

Affiliation (Dept & Univ): Mechanical Engineering, Michigan University

Participated program: Short (summer) 2014

Research theme: Automated Steering System for Obstacle Avoidance
based on Potential Field Method

Advisor at Nagoya Univ: Prof. Tatsuya Suzuki

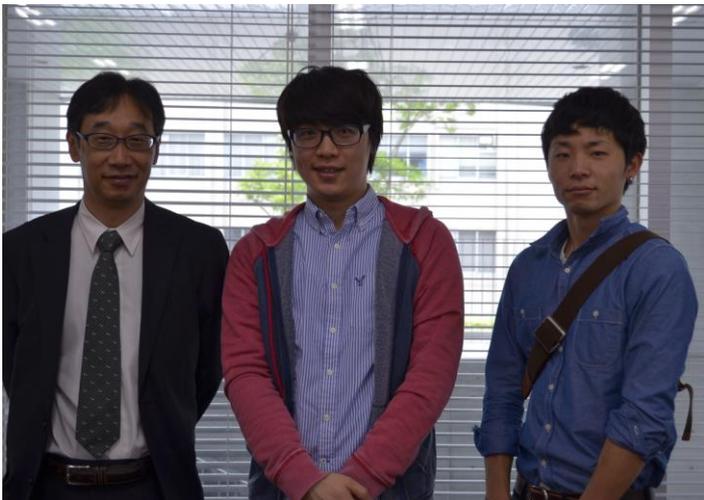
Affiliation (Dept.): Mechanical Engineering



My research topic in Nagoya University is automated steering system for obstacle avoidance based on the potential field method. I gained a lot of valuable experience and learned new skills at Suzuki lab, such as learning C# programming for the controller.

I like the culture of Japan, and I also appreciate the innovative technology in Japan. Travelling in Japan is always what I hope to do. By participating this program, I can not only stay and travel in Japan but also learn the cutting edge of technology in the field of mechanical engineering, especially in the vehicle area.

During these few months, I traveled to many cities in Japan frequently.. The most impressive place is Kyoto. In Kyoto, there are many beautiful temples and castles. I really admire the unique style of those temples and castles. More importantly, I learned a lot of knowledge in the field of vehicle from the research at Suzuki lab, not just constrained in the field of the automated steering system. I also learned the “trajectory planning for automated parking”, “stop movement control with model predictive control”, and so on. I believe all things I learned and all experiences I gained in Japan must have positive impact on my future career.



Life Experience in Japan

Name: Hanyi Xie

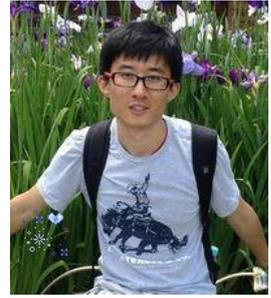
Affiliation (Dept & Univ): Mechanical Engineering, University of Michigan

Participated program: Short (Summer) 2014

Research theme: Friction and Wear of 3D printed materials

Advisor at Nagoya Univ: Prof. Noritsugu Umehara

Affiliation (Dept.): Mechanical Science Engineering



I think I am really lucky to get involved in Prof. Umehara's lab. Not only because this lab is a pioneer in tribology area, I can learn advanced technology here; but my TA as well as anyone in this lab, is always really kind to help me solve problems, answer my concerns, and teach me to use the advanced machines.

During the weekdays, we have Japanese class in the morning, and come back to the lab doing research in the afternoon. Weekend time is used to travel to places out of campus. Kyoto is a beautiful city full of ancient shrines. The ceremony for prayer is very typical. In addition, Shirakawa-go leaves me deep impression since the countryside is so silent and clean. On rainy days, wind is cool and air is fresh. We can see the clean stream everywhere, as well as the big fish in water. The most impressive events are the Haru semi and Natsu Ryoko with my lab members. This is my first time living with local Japanese. We played games, chatted through the night, swam in the sea, enjoyed the hot spring, tasted seafood BBQ, drank a lot.etc. In my opinion, the beautiful scenery is attractive; but more "shiwase" thing is living together with people in my lab. At that moment, I felt I was closest to native Japanese culture.

The JUACEP program also provides us many opportunities to learn not only the technology but culture in Japan. The Toyota Motor Factory visit gives us a sense of view how the car is assembled from every component and what is the related manufacturing flow chart. During the handcraft exercise, the process of disassembling and assembling is really helpful for us to understand the detailed structure of the rotary engine and the theoretical principles. In the INAX museum, we created paintings on the small toilet, visited the history museum of ceramic development. The seaside BBQ is really impressive since we sit along the coast, watched the beautiful scenery and cooked sea foods by ourselves.

Findings through JUACEP

Name: Yang Yong

Affiliation (Dept & Univ): Biomedical Engineering, University of Michigan

Participated program: Short (Summer) 2014

Research theme:

Advisor at Nagoya Univ: Prof. Fumihito Arai

Affiliation (Dept.): Nagoya University, Micro-nano Systems Engineering



First of all, I would like to express my appreciations to everyone who helped me to participate in this program, that includes, but no limited to Professor Kurabayashi, staff from JUACEP office (Nagoya University), staff from the IPE office (UM) and the Graduate Education Committee of the Biomedical Engineering department (UM). My case was very complicated and it was almost impossible for me to come to Nagoya University. However, everyone tried their best to help me and eventually I did make it. I can write a four-page essay by only describing this hard and long process. I am truly honored to be part of this program.

I learned a lot at my host lab. My major is not an exact match to my host lab's research direction. I major in Biomedical Engineering with focus on biotechnology and my host lab is mainly working on micro-nano system. I was very worried at first while my tutor was very nice to help me with my project. I built my confidence in working in an unfamiliar area and translate my knowledge to real solutions. One most important thing I learned from my lab mates is their hard-working and enthusiasm towards their work. People usually come at around 10am and most of them stay till 11pm or later, even on weekends and holidays. Not only the students, the professors also come to lab on weekends. I think this could be one reason why Arai Lab is one of the best in this area.

One big pity for me is that I only know little Japanese from the Japanese classes. My lab's discussion meetings and research meetings are all in Japanese and really hard for me to fully understand, though their PPT slides are in English. Even though, I am really impressed with their delicate designs of biorobotics and strategies in solving problems. Most of my Japanese lab mates are very shy and some of them are not very confident in speaking English. To be honest, I felt lonely in the first two weeks. Then I tried to talk to them and found out they are very kind and willing to help as long as I ask. We talked about Japanese comics and differences between Japanese and American course/degree system and campus life.

I really enjoy the series of lectures in production engineering in automobile industry and the field trip to Toyota Motor Factory. I learned the concept of "Jidoka" and "Muda" from the lectures by an engineer from Toyota and saw how "Jidoka" is applied and how "Muda" is avoided during manufacturing process at the factory. Japan is famous and respected for its engineering. JUACEP offered us great opportunity to learn from that.

Not only from the lectures or the field trip, but also from the ordinary life, I noticed the unique characteristics of Japanese engineering, that is, Japanese engineers pay lots of attention to details and quality. For example, even the toilet brush here has a better design than the ones I saw in China and America.

The JUACEP mentioned a term, "academic culture". I think this program is a perfect one for us to experience the academic cultural differences between America and Japan. I will demonstrate a few observations based on my lab.

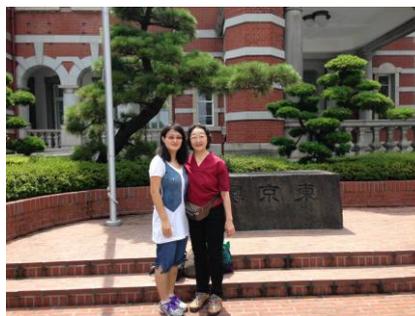
The Japanese society is strictly hierarchical, even including the academy. Each lab has one professor and several associate and assistant professors. In the lab, people call each other family name only with a suffix ("sensee" for professors, "san" for same or higher "levels", "kun" for male lower "levels") for respect.

Female researchers/engineers are rare in Japan. There are only a handful females in our lab building that there is only one female bathroom in the building. Among all 9 labs which host UM students, my lab has the max number of girls (5, 3 of them are Japanese) and we have not yet heard of any female Japanese professors here. I think one reason is that we are all engineering majors and most Japanese girls do not prefer studying engineering. My tutor is also a girl and I think she is no worse than other male students.

We also visited several places, such as Kyoto, Tokyo and Osaka on weekends. We enjoyed the sights, Japanese food and Japanese culture and history, moreover, nice Japanese people. Last weekend, we went to Tokyo and we tried to buy bus tickets to Fuji Mount using the Loppi at a Lawson store. The instructions on Loppi is in Japanese and we had to ask the staff for help. The staff could not speak English, while a customer heard us and he came to help us. He said he just started to learn English and we wrote down the Kanji and numbers to communicate in addition to English. In order to help us, he called the bus service center and reserved tickets for us. He then wrote down the detailed information for picking up the tickets and explained three times to us to make sure we understand. The whole process took half an hour and he was just a stranger. This is just one instance of nice Japanese people. Thanks to these people, they made our trip not only great but also warm like home.



世界遺産・白川郷合掌造り集落



My "Japanese grandma" 美子姑姑 and me

There are a lot to talk about regard to this program. I will share my experience and my thoughts with all my friends. I enjoy my time here and really appreciate this opportunity. I hope I can come back to Japan again after this program and I will keep learning Japanese.

AMAZING RESEARCH LIFE IN JAPAN

Name: Yingrui Zhan

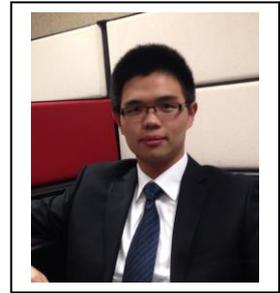
Affiliation (Dept & Univ): Dept of Mechanical Engineering, University of Michigan

Participated program: Short (Summer) 2014

Research theme: Cold forge spot bonding of Aluminum and Copper Sheets

Advisor at Nagoya Univ: Prof. Takashi Ishikawa

Affiliation (Dept.): Dept of Materials Science and Engineering



On May 12th, 2014, my research life in Nagoya University began. Filled with curiosity and tension, I arrived at Chubu Centrair International Airport. The pouring rain couldn't alleviate my excitement. The warmth from Japanese students and dormitory staff also made me feel the amity of Japanese people. In addition, I would like to thank JUACEP for providing me with round-trip flight and accommodation at Nagoya University, especially considering high living expenses in Japan.

On the second day, my research work officially started. I am working in Professor Takashi Ishikawa's Material Forming and Processing Lab. Professor Ishikawa has long been famed for his research in metal deformation field and he used to be the chairman of The Japan Society for Technology of Plasticity. With such high prestige and rigorous attitude towards research, Professor Ishikawa is very kind and humble in personal though. The atmosphere and working environment of lab are fantastic. Every Japanese student shows a lot of politeness and amity. And the lab has a lot of simple fitness equipment and a sofa bed for students to relax themselves. To my surprise, there is even a public iPad for everyone to play games. Unlike the stereotypical impression of Japanese people that they are all workaholic, my lab shows a well balance between work and relaxation.

After getting myself familiar with the office, I had chance to work on those advanced materials processing machines affiliated with my lab. My research theme is about cold forge process and needs to use Press machines, Servopulser and Scanning Electron Microscope. Professor Ishikawa's lab provided me with everything I need and I had a great time working with my Teaching Assistant. Her meticulousness and proficiency, just like the impression Japanese people have left on me for a long time, were fundamental for achieving our research goal. In fact, Japanese companies and research facilities have an extremely high level in research of metal materials deformation and processing, which is partly resulted from the shortage of natural resources in Japan. In contrast to the United States, Japanese scientist and engineers are still paying a lot of attention on traditional engineering areas and trying to make every use of them. And this is one prominent characteristic of Japan- use less to achieve more. Probably this idea better fits our earth.

Three months of life in Japan is not very long, but long enough for me to experience Japanese culture and history. In all, Japan and America seem like on the two opposite ends, not only for exterior differences like skin colors, language systems, driving on the left or right, but interior aspects including thinking mode, attitude towards other people. However, as long as I am from China, it is not a big problem for me to be adjusted to Japanese lifestyle. In addition, Japanese people always show huge tolerance and kindness to foreign people. This advantage, I think, is the inevitable result of high civilization. Therefore, during my stay in Tokyo, Osaka and Kyoto, I always had a great time wandering streets and visiting gorgeous scenery spots.

Finally, I would like to thank JUACEP again for giving me this precious opportunity to closely look at Japan and its culture. Gaining a deeper understanding of Japan, I may choose to work for a Japanese company in the future. And this experience is my lifelong treasure.

Findings through JUACEP

Name: Chiyang Zhong

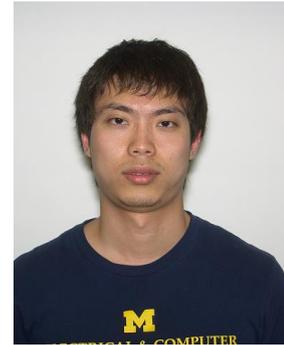
Affiliation (Dept & Univ): EECS University of Michigan

Participated program: Short (Summer) 2014

Research theme: Development of Current Suppression Equipment in Low Voltage DC Distribution System

Advisor at Nagoya Univ: Prof. Matsumura

Affiliation (Dept.): Electrical Engineering



Before attending the JUACEP program, I had always wanted to come to Japan. I believe like me, many people learn about Japan from its animations. Everything seems so interesting on screens and they just keep drawing us to this mysterious country in the east. Finally one day I saw this opportunity and grasped it. So here I am, in Japan, a magical place.

As this is a summer research program and I did not come here as a tourist, most of the time is spent in the laboratory doing research. However when I have time during weekends, I would travel to nearby places. So far I have been to some major cities in Japan, such as Kyoto, Osaka, and Tokyo. They are all very nice places to visit. Kyoto is famous for its existence as an old-time capital city. Its Matcha products are very tasty and I have grown quite fond of them. Osaka is a place for people to indulge themselves in Japanese food. When it comes to food, most Japanese people would recommend Osaka. It has several blocks of restaurants, full of traditional Japanese food, such as Okonomiyaki, Takoyaki, Sushi, and Ramen. I even tried some balloonfish at Osaka, which was a once-in-a-lifetime experience. As for Tokyo, it is the modern capital of Japan. Shopping and experiencing the culture of Japanese animation are recommended. Some other towns or villages are also worth seeing, like Nara and Shirakawa.

The downside of Japan is that English is not very popular here. Places lacking English signs and people only speaking Japanese are the major problems for travels. However Japanese people are very nice and polite. Although they cannot speak or understand English, they would still try their best to help. After arriving in Japan, I took a short Japanese class which only had ten lectures. It was helpful, but too short to make any difference in communicating with locals. Unlike mechanical engineering labs, which are full of international students, the electrical engineering lab I am in only has Japanese students. I think this is the main reason why the students in those labs can speak English quite well, while I can hardly communicate with my labmates. In this sense, my lab experience is not as good as others. Nevertheless, my professors and labmates are very nice and they offer help whenever I have questions. I have learned a lot through research because of them.

Finally I would like to talk a little about the culture. It is pretty much the same as what is presented in Japanese animations. I'm glad that I had the opportunity to attend one of the festivals held in Nagoya. To attend traditional events, people always dress in Kimonos, which are so pretty, especially for ladies. Some of the activities are also very cultural and fun. I really have had a great time participating in those events.

Generally speaking, this summer research program has not only helped me learn more in research, but also let me experience this wonderful culture. Three months seem to have gone so fast and it is sad that I need to leave so soon. I really hope I could come back sometime in the future.

Findings through JUACEP

Name: Dong, Song

Affiliation (Dept & Univ): Mechanical Engineering, UCLA

Participated program: Short (Summer) 2014

Research theme: Vehicle Crash Safety

Advisor at Nagoya Univ: Prof. Mizuno Koji

Affiliation (Dept.): Mechanical Science and Engineering



This short summer program provides a great opportunity to me. In terms of my major, mechanical engineering, Japan is a well-developed country in this industry. Many famous companies such as Toyota are well known all over the world. Thus, participating to the JUACEP Summer Program 2014 gave me a precious opportunity to accumulate professional practical experience.

My research in Prof. Mizuno's lab is the great and helpful experience to my career. I can feel the comfortable and harmonious Japanese lab's condition. The tutor and lab mates are friendly and full of passion. They are always glad to help me whenever I met questions during my research. Their work-life balance also impressed me. After the long-time work, they will share experience with each other during a coffee break, including the questions they met in the research and other funny stories. This is also a kind of collaboration, which promotes the research progress and lets people refresh.

Although I do not know Japanese, I still did a lot of excursions during the two-month study. The colorful life in Nagoya makes me full of energy. During these trips, I am attracted by the Japanese culture. Nagoya is a city that famous for its history. The classic places, such as Nagoya Castle and Atsuta Shrine, are really impressive. My lab mates gave me many suggestions to explore the beautiful city. The harmonious lab environment and wonderful city are the reason why I enjoy my every day in Japan. During the holidays and weekends, I went to many other cities, such as Osaka, Nara, Kyoto and so on. I found different Japan through these trips, which is a well-preserved traditional and high-tech modern country. I can feel the traditional culture and Japanese history through the numerous temples. Meanwhile, the smart buildings and other high-tech devices on the streets are amazing.

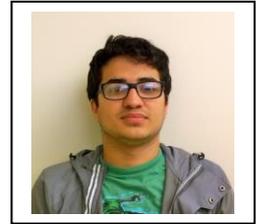
All these fantastic experiences are came from JUACEP program offered by Nagoya University. I can gain academic knowledge through the research in the lab. The guidance of Prof. Mizuno helps me improve myself, which is of great important to my future career. On the other hand, the daily life in Japan makes me feel different culture and life style. Participating the JUACEP program is a valuable treasure to my life.

Findings through JUACEP

Name: Jose Eduardo Gaviria

Affiliation (Dept & Univ): Material Science and Engineering at UCLA

Participated program: Short (Summer) 2014



Research theme: Manufacture and Characterization of Boron Oxide Solid Lubricant using RF Magnetron Sputtering at Low-Vacuum Pressure

Advisor at Nagoya Univ: Prof. Noritsugu Umehara

Affiliation (Dept.): Mechanical Engineering



I didn't know what to expect when coming to Japan initially for the JUACEP program. I had no idea if the time that I would be there in Japan would be mostly spent in the guest laboratory working or just trying to overcome the language barrier while doing everyday activities. However, once I arrived in Japan, it became quite clear that this would be an unforgettable experience. I have travelled quite a bit beforehand and quite enjoy it, but never before had it been such a perfect balance of work, cultural exchange, and discovery. During my time in Japan, I worked on a project that I had very little background in. I learned a new set of skills, while being mentored by very capable individuals. I also was welcomed by my mentors with open arms and learned more about Japanese culture. The lectures and learning opportunities arranged by the JUACEP office were insightful and easy to follow. The rest of the time that I was not in the laboratory or attending lectures, I was spending with other students from my program, or just myself, travelling and seeing all that Japan had to offer. The culture, the food, and the typical Japanese way of thinking. Thought there are a lot of differing cultural norms, everyone, even strangers, were very courteous even when I committed a faux-pas. They would even teach me and explain what I had done so I could better present myself in the future and not commit the same mistake twice. All and all, I knew before I started the program that I wanted to come to Japan at one point in my life either to improve my career or just to travel; however, after spending the time I did in Nagoya and all the interactions with the people I met in that time, I can't wait to get another excuse to come back once more and do it all over again.

Findings through JUACEP

Name: Zihe He

Affiliation (Dept & Univ): Mechanical Engineering and Science

Participated program: Short (Summer) 2014

Research theme: Bonding in Chip Fabrication for Cell Measurement

Advisor at Nagoya Univ: Prof. Fumihito Arai

Affiliation (Dept.): Mechanical Engineering and Science



When I heard about JUACEP program, I contacted our UCLA professor immediately for detail of this program. Fortunately, my application was approved and I could finally see the real Japan with my own eyes. In the past, I could only know about Japan through media and stories of other people, which may have been dyed with bias. This trip gave me an objective image of Japan, which is very important for understanding of a country. I met many helpful Japanese people, did research with Japanese students, visited places of interests and etc. These two and half months in Japan are exciting and must be the best summer vacation I have ever had.

After I settled down, the first thing that impressed me was how much effort Japanese people made to improve quality of life. Since population density is high in Japan, limited space is another restriction factor that engineers need to keep in mind in products design. For example, those powerful toilets can show that Japanese people care a lot about others. I believe the standard toilets in Japan with washing system can be rarely seen in other countries. Besides, changing cover of the water tank into a tub is a very cool idea to save space and water. Sensors are used very often to save water and energy. In the dormitory we lived in, lights in public rooms are all automatic, so we would not forget to turn off the lights. These are small facts of saving water and energy, but can show the consciousness of environment protection.

Sanitation is another indicator of quality of life. We can tell whether a city is advanced or not if we pay attention to how clean the streets and restrooms are. The garbage sorting rules in Japan may be the most complex in the world. After we moved into the dorm, we were really shocked by the garbage sorting things. However, as time goes by, we are used to them now. If we think deep into those rules, someone needs to do garbage sorting anyway. When everyone in this country is devoted to reducing burden on the sanitation system, this country can definitely be clean and beautiful.

Good environment and clean streets can obviously benefit the tourism. On the weekends, we had time to visit other cities and enjoy the beauty of Japanese culture. We saw many pretty shrines and temples in Kyoto. They had been there for hundreds of years but still looked magnificent. We had delicious takoyaki and okonomiyaki in Osaka, and fed deer in Nara. We went to Gifu and watched the best firework I had ever seen. At this moment, we are planning to visit Tokyo during Obon Holiday and I'm looking forward to it.



Though we can't see sakura blossom or momiji in summer, various festivals in different cities made this trip to Japan completely worthwhile. Of course, I learned a lot about MEMS by doing research in Nagoya University, which might affect my career path in the future. I'm glad I joined JUACEP program and I really had a great time in Japan.

Findings through JUACEP

Name: Yue Huang

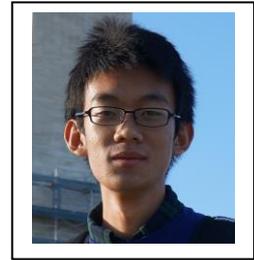
Affiliation (Dept & Univ): Department of Mechanical Engineering,
University of California, Los Angeles

Participated program: Short (Summer) 2014

Research theme: Slip control for contact motion reproduction

Advisor at Nagoya Univ: Prof. Yoji YAMADA

Affiliation (Dept.): Mechanical Science and Engineering,
Nagoya University



The experience at Nagoya University as a member of JUACEP was really amazing. Three-month is too short for me cause I enjoyed both the research and life here.

For the research, I conducted a project related to the wearable robot in Prof. YAMADA's lab. This project is a combination of material science, control system, manipulator control, 3D printing and C language programming. Since I focused on the MEMS field when I was at UCLA, most knowledge and skills related to my research here are new to me. At the beginning, I felt kind of difficult to deal with some tasks such as using Linux system and modeling the friction state of dummy skin. However, Prof. Yamada is very kind and helpful. He was always very patient to give me some instructions and advice. Besides, my TA and labmates also taught me a lot. Thanks to their kind help, I could get familiar with my research more quickly than I expected. In addition, the lectures of Production Engineering and Toyota Motor Factory trip made me impressed by the advanced manufacturing techniques in Japan. The handicraft exercise was also very interesting as well as meaningful.

I also enjoyed my spare time here with my friends and labmates. Japanese people are very polite and hospitable. I joined the activities of lab such as barbecue and drinking in TV tower beer garden, and I enjoyed the time with them a lot. I was also fortunate to visit many places with my friends. We watched sumo games in Nagoya, experienced the traditional Japanese culture in Kyoto, played with deer in Nara, enjoyed delicious food in Osaka, and saw the gorgeous fireworks in Gifu. We relaxed ourselves during the trip, and at the same time, we experienced the Japanese culture and Japanese people's kindness.

Generally, the entire experience here was very impressive and unforgettable. I made a lot of Japanese friends here, and they made me feel home. I hope to express my gratitude to JUACEP for providing me with this great opportunity. I believe this experience will be very useful for my future study and career.

Findings through JUACEP

Name: Yingxia Liu

Affiliation (Dept & Univ): MSE, UCLA

Participated program: Short (Summer) 2014

Research theme: Thermal Stress and Strain analyses of TSV and microbumps in 3D IC using Abaqus

Advisor at Nagoya Univ: Prof. Nobutada Ohno

Affiliation (Dept.): Department of mechanical science and engineering



I had a really wonderful experience during my stay in Nagoya University. I'm sure this period will be my precious memory and even when I am old I will still remember all those good days in this period with smile on my face.

First I am really grateful for Prof. Ohno's patient guidance to me. I don't have a background in mechanics. Prof. Ohno always explains some basic knowledge to me patiently. TA Mr. Banno helped me a lot in getting familiar with software Abaqus. Without their help, it would be really difficult for me to get into the field of mechanical simulation which is totally new for me but important to my future research.

The field trip to Toyota and the workshop impressed me a lot. I have never thought about how a car is made and was astonished when went to Toyota factory. The scene I saw was really like a Hollywood movie. There were robot arms, solder sparks and the assembly line. The robots acted at a high accuracy. Standing in the factory made me think that it was really fancy to study engineering and I became more respect to those products of human scientific and technological developments. The workshop of painting toilet is even more interesting. At first I thought it was so funny to paint a toilet. Then I found it interesting and especially interesting because we painted together with friends. They all have some amazing ideas. One student from UM even painted Van Gogh's sunflower, making the toilet like a masterpiece.

In the weekends some friends from UCLA always went to explore the city of Nagoya together. We have also been to some other cities like Nara, Osaka and Kyoto. We also enjoyed sumo tournament in Nagoya. I am impressed that Japan has so many trees. There are trees almost everywhere. The scenery is very beautiful. There many stories in our trip, like we were starving to death but have to walk along the street of Kyoto to find a restaurant. Those stories seem funny when I thought up again. The following is a photo to show our happy stay at Nagoya.



お疲れ様です!

Name: Yuan Hung Lo

Affiliation: UCLA Bioengineering

Participated program: Short (Summer) 2014

Research theme: Bacterial Adhesion and Quorum Sensing

Advisor at Nagoya Univ: Prof. Katsutoshi Hori

Affiliation (Dept.): Biotechnology



My tutor and good friend and I on top of Gifu-cho.

Coming into Japan I had no idea what to expect. I knew less Japanese than a 2-year-old, I was hardly prepared for my research project, and Nagoya was a faraway place I had only seen on Google maps. Honestly, I wasn't feeling too hot about venturing into a world that was so different from home. But as I type this and reflect on these past few weeks, those worries have become only a faint reminder of how much has changed this summer. Japan is strange in the most wonderful way possible. Simply put, there is no place quite like Japan.

Everything in Japan feels distinctively Japanese. The people, the streets, the food, and even their appliances have a recognizable "Made in Japan" feel to them. Their versions of Subway sandwich somehow tastes better than the original, and their water sprouting, odor eliminating toilets are second to none in functionality. And if Japanese things feel different than those in the US, then Japanese people are in an even starker contrast to Americans. The politeness and hospitality displayed by the Japanese people everywhere (and I mean everywhere) never failed to amaze me. Coming from LA, initially I could not believe what I was experiencing. However, it wasn't long before I started to enjoy and appreciate this harmonious culture.

Another quality of Japanese people I admired was their attention to detail. Everything in my apartment was well designed and made with clear intentions. Nothing was wasted, and nothing was superfluous. In lab, my lab mates took incredibly detailed notes, laying out clear goals for each experiment and presenting data in a clear and organized manner that could be understood by someone just picking up the notebook. Furthermore, when I was getting a hair cut, the haircutter executed every cut with precision and purpose, as if he was performing an important ritual. These may be mundane and insignificant examples, but they exemplified just how deeply precision and meticulousness are entwined within the Japanese culture.

Their attention to detail carried over to the way they cared for the environment, which really resonated with the environmentalist in me. The way Japanese cared for their community changed not just my ideas about sustainability; they changed my conception of what it meant to live harmoniously with my surroundings. Everywhere I went I saw people diligently recycle their trash, even down to the plastic packaging. When I went to watch hanabi along the Nagara-gawa River in Gifu, I read that the local communities would volunteer their time to clean up the river after every event. Unsurprisingly, as I learned over the course of this summer, this collective environmentally conscious mentality was also present in the way Japanese people approach biotechnology and bioengineering.

My research at Nagoya University concerned bacterial adhesion proteins and quorum sensing with applications in environmental biotechnology. It utilized the metabolism of microorganisms for non-toxic industrial production, and is an important technology for sustainable development. The engineered microorganisms can be used in biodegradation of toxic chemicals, wastewater treatment, and bioremediation. Furthermore, biofuels, such as bioethanol and methane, can be produced via metabolism of organic wastes. My time in Hori lab was a great opportunity for me to see how Japanese labs conduct research. I also learned many useful molecular and cellular biology lab techniques for studying bacteria. I believe the experience will help me professionally after I return to the US as I try to set up collaborations between Hori lab and labs in UCLA.

My experience with JUACEP far exceeded my initial expectation. Despite the short amount of time, I have learned so much and had so much fun. Words cannot describe how grateful I am for this opportunity. Finally, after an adventurous two and a half months here in Nagoya filled with immense professional and personal enrichment, I am happy to say, without any reservation, お疲れ様です!

Findings Through JUACEP 2014

Name: Tait McLouth

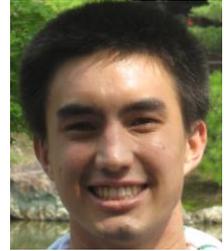
Affiliation (Dept & Univ): Materials Engineering, UCLA

Participated program: Short (Summer) 2014

Research theme: Microwave Analysis of CFRP for Carbon Fiber Content

Advisor at Nagoya Univ: Professor Ju

Affiliation (Dept.): Mechanical Engineering



I was initially hesitant about staying at Nagoya University for the summer of 2014, as I wanted to build my engineering skills as much as possible in preparation for graduate school and I thought the best way to do this would be through a summer internship. However, now that I have participated in the JUACEP program I can confidently say that I made the right choice. Not only was my stay here good for my engineering ability, but the complete immersion in a new culture helped me grow in more ways than one. I learned [part of] a new language, ate delicious Japanese food, made new friends, and learned more than I could have at any internship in California.

The culture of Japan was one of my favorite parts of the program. During the weekdays the other UCLA students and I would focus on our research efforts, and sometimes eat out for dinner. However, once the weekend came around we would go on 2-3 day long excursions around Japan to places like Kyoto, Nara, Takayama, and many others. These trips were so interesting because once we left Nagoya, we were on our own. It was up to us to decide where we wanted to go and what we wanted to do in all of these foreign cities, and that is what made it so exciting. The language barrier initially posed some problems, however with the basic Japanese we learned in class, and also the ability to read both Hiragana and Katakana (with the added Kanji knowledge of the Chinese students from UCLA), we were able to travel around fairly well. Going to local bars in Osaka, feeding the deer in Nara, and biking around Kyoto gave us some great memories we will not soon forget.

As I mentioned earlier, the weekdays were when we worked, but that did not mean we didn't enjoy ourselves. The food in the school cafeteria was fantastic, and my lab mates were extremely friendly. Going out to play baseball, soccer, and basketball were just a couple of the ways we were able to bond, but also eating together, playing otokogi janken, and talking in lab were very enjoyable. After working in the lab, it was not uncommon for some of us to go to an Izakaya in Motoyama. Similar to an American bar, except with better food, Izakayas were a great opportunity to get to know each other on a more personal level. The work week became just as enjoyable as the weekends did as we got further along in the program and more accustomed to the Japanese lifestyle.

The research itself may have been the most difficult part of the program. I felt that ten weeks was not enough time to adequately start and finish a brand new research project. However, this was not necessarily a bad thing, as the limited time frame pushed us to work harder and think more critically. The language barrier on equipment's software and communication with other members of the lab also posed additional problems, however as an engineer it is our job to be able to work around problems like these and make the best of the situation. I think that these additional problems only motivated us more to work on our research.

I think that participation in the JUACEP program has really taught me a lot about Japanese culture and also improved my problem solving abilities. This will have a positive impact on the research I do down the road, and will hopefully put me in a better position for finding a job in the coming years. I am glad that I chose to come to Japan, and I will wholeheartedly recommend the program to anyone who is looking for something productive and exciting to do during the summer.

Findings through JUACEP

Name: Mark Seal

Affiliation (Dept & Univ): Materials Science, UCLA

Participated program: Short (Summer) 2014

Research theme: SiC Solution Growth

Advisor at Nagoya Univ: Prof. Ujihara

Affiliation (Dept.): Materials Science



It's hard to believe it's already almost been ten weeks. I sit puzzled, sifting through lists of potential words to describe this summer in Japan but perhaps what's most telling are the words that are absent from my search: boring, tedious, and redundant.

I don't mean to say that it was a walk in the park, lab work always has its ups and downs. But these past weeks have flown by faster than any in recent memory and I have so much to be thankful for.

First, to the Nagoya University staff and students for making me feel instantly welcome. From the first day in lab, I was able to participate in research with my mentor. My background is from a slightly different field, but both my student mentor and advising professor were patient while I adapted to the rhythm and culture of their lab group. Although ten weeks is a laughably short amount of time to perform a complete research project, I feel I was able to contribute and work semi-independently, even if the language barrier made things slow going at times.

I'd be lying if I said that weekend trips weren't the highlight of my summer. The temples in Kyoto, the food in Osaka, the fireworks in Gifu, the list goes on and on, but the one constant at every location was the patience and helpfulness of complete strangers. One hundred percent of the times where I was lost or confused, someone would stop and go out of their way to help.

The cultural differences between American and Japanese people are most apparent here. At least where I come from in Los Angeles, relying on the kindness of strangers can be a risky move, but in Japan I was never led astray or taken advantage of (at least that I know of). Combined with working everyday with my Japanese lab members and taking a language class, I have an entirely different and fuller understanding of Japanese culture, and am eager to continue learning. While the Japanese are typically a reserved people, their actions have spoken loudly as a testament to their hospitality.

I could write at length about the history of my trip, but its' most interesting impact will be on my future. I'm no longer hesitant to apply for employment positions that involve travel to Japan, or for that matter even applying to Japanese engineering companies. I hope that potential employers will see this trip for what it was; a learning experience on literally every level, from science, to culture, to eating with chopsticks.

Findings through JUACEP

Name: Elvia Cortes

Affiliation (Dept & Univ): UCLA

Participated program: Medium term (Summer and Fall) 2014



Research theme: Effect of Anode Geometry on Steady-State Magnetoplasmadynamics Thruster

Advisor at Nagoya Univ: Prof. SASOH

Affiliation (Dept.): Aerospace Engineering

Japan is well known for its brilliant innovative technology, while the graduate school of Engineering at Nagoya University has outstanding research facilities. Having the opportunity to be part of this society through the JUACEP program has helped me grow as an engineer and researcher. During my six month stay in Nagoya University I have learned a lot about electric propulsion under the guidance of professor Sasoh, my teaching assistant and lab mates. I learned about how the magnetoplasmadynamic(MPD) thruster works, its acceleration methods, and using this knowledge as well as previous research I designed an optimized MPD thruster. This was then manufactured, and I learned to set up the lab equipment necessary to run tests on the MPD thruster. It was a great experience to finish this project, from the preliminary trade studies, designing, manufacturing and finally experimenting.

Through this internship I was able to experience everyday life and work ethics here in Japan. Every Tuesday morning we had a seminar in Prof. SASOH's lab where each student showed their current progress in research. This was very educational because it helped broaden my knowledge of my own study by learning about other student's research. I have also seen how enthusiastic and hardworking Japanese students are about their work. It is part of this culture to work hard and at the same time relax once in a while. I went to several Izakayas with my lab mates and had a great time socializing and building strong relationships with colleagues. Outside of lab, something that amazed me about Japan is how polite, humble and kind everyone I had the opportunity to interact with was.

The JUACEP program contained many great activities: I learned a lot about production engineering through the seminars that were provided, enjoyed the assembly of the internal combustion engine and finally had an amazing experience in our field trip to see the Toyota plant and the sea side BBQ. The Japanese class helped re-enforce previous knowledge I had of the Japanese language and I learned many useful common every day phrases.

In terms of my career, this program has helped me in many ways. When I first came to Japan I was very shy and scared of public speaking, some qualities that are detrimental to my future engineering career. After presenting my research every week to the entire lab I no longer have a fear of public speaking. Interacting with students from a different culture helped me grow as a person and improved my communication skills. I have also learned a great deal about myself: I really enjoy international collaboration and learning about other cultures. This has motivated me to find a job in an international company in the future.

Traveling around Japan has also been an important part of my experience here. I have been to Kyoto, Nara, Hiroshima, Shirakawago, and Tokyo, truly stunning locations. I also experienced the beautiful Japanese natural environment by seeing autumn leaves at Koorankei and winter sakura at Obara village. Finally, I took part in this culture by wearing a Yukata to the fireworks festivals and visiting the beautiful onsen in Takayama. Through the JUACEP program I have grown as an individual, gained an immense amount of knowledge about research, the Japanese culture and language, and seen many beautiful and historic places that Japan has to offer.

Findings through JUACEP

Name: Antonio Martinez

Affiliation (Dept & Univ): Electrical Engineering, UCLA

Participated program: Short (Summer) 2014

Research theme: Human Activity Recognition using Smartphone

Advisor at Nagoya Univ: Prof. Nobuo Kawaguchi

Affiliation (Dept.): Department of Computer Science and Engineering



One of the things I most enjoyed from the JUACEP program has been the research lectures. Researchers from well-known companies and institutions come to the Nagoya University campus to offer a research lecture about the work they are currently engaged on. For instance, I enjoyed the research lecture of Professor Toshio Hirota, a visiting professor from Waseda University, who talked about technological innovations for sustainable mobility. Another part of the program that I truly appreciate was the engine assembly/disassembly. This hands-on activity was not only fun, but also very interesting as we were able to closely learn the basic engineering principles seen on an engine.

I found my lab to be unexpectedly big. It has about fifteen members and three professors. Most of my lab mates are undergraduate students, but there are also master's and PhD students. The lab has a good feeling of camaraderie, which is one of the aspects I like the most because this has a positive effect on teamwork, especially in a research setting like this.

I was glad to find that Nagoya University has a beautiful and large campus, the Higashiyama campus that is, where the graduate school of engineering is located at. There are many facilities to serve the students, like cafeterias, convenience stores, coffee shops, etc. Also, there is a gym, which I've been using regularly. In general, the campus area is in a nice and quiet location of Nagoya.

Life in Nagoya has been enjoyable in many aspects, with the exception of the summer weather. It was really hot and humid, but the good thing was that there was always air conditioning on most places, including my lab, and my room. Nagoya is centrally located in Japan. That made it easy to travel not far distances to visit interesting places like Kyoto, Osaka, Tokyo, among others. Even within Nagoya there are many places to visit, like the Nagoya castle, several temples, and even the Nagoya zoo.

I believe having participated in the JUACEP program will not only have an impact on my future career as a researcher, but also, on my life. I have been able to observe the differences and similarities on how a research lab functions here in Japan compared to a lab back home in the US. This definitely will improve my own research practices in the future. Similarly, the cultural differences I have experienced in Japan will enrich the way I see life and will help me appreciate contributions of other cultures to my own.