

The experience of our students Alumni Network Tsukuba Trans-Pacific Program

SERGIO GALINDO ALBERTO LEON

Master's student in Biomedical Engineering at the Universidad de los Andes, Colombia

Exchange period: October 2019- September 2020

From the engineering area of which I am part, Japan has always been a constant and permanent reference, so when I was offered the possibility of making an exchange to this country, I did not hesitate for a single second and my answer was an immediate yes. I am currently part of the Master's program in Biomedical Engineering at the Universidad de los Andes in Bogotá, Colombia, so the topics of prosthetics and robotic rehabilitation have been topics of constant interest. Tsukuba is a clear reference in this area. It is where the Cyberdyne company, which designs and builds one of the best exoskeletons for rehabilitation (HAL suit) was founded, it is where the research laboratory of this company is located and precisely the University of Tsukuba is the Alma Mater of its founder. It was not a surprise to find one of these exoskeletons at the main entrance to the city hall, but it was a great surprise that they offered me to research for a year in the Cybernetics laboratory where most of the research on engineering topics focused on health is given. and human beings. Furthermore, Tsukuba is recognized as the city of science! On the other hand, to be honest, I did not know the culture of Japan at all and I thought that it would be a country that I would die without knowing. As a Latin American, I considered it a country that I would hardly go to, so for me it represents the opportunity to get to know Japan in depth and, also, learn from one of the best laboratories in my area.



My first month in Japan was somewhat lonely, although I made a couple of friends in the laboratory where I worked, I usually did not go out with other people and was unaware of the number of events and activities that the university organizes for international students. I regret not joining more clubs and activities from the start so please join us from day one. After this I began to share more with other students and especially a group of Latin Americans who ended up being my best friends. I also decided to join the table tennis club and unofficial Japanese classes and this totally changed my life in Japan. I got to know what it is like to be part of a club, train, dine and celebrate together and also

start to learn some Japanese and its culture. Some of the things that I enjoy the most and will remember will be going to a nearby town to a fireworks competition, spending Halloween in Shibuya traveling with my friends to Kyoto, celebrating my birthday in Tokyo, seeing the first sunrise of the new year on Mount Takao, participate in a tea ceremony and taste a lot of Japanese food in the company of many good people.

Academically, my progress after a year has been incredible. My project is about developing a passive foot prosthesis for people with below-knee amputation. When I arrived in Japan my ideas were really bad and in fact not achievable (what a shame). Little by little I was able to learn about mechanics, biomechanics, simulation, manufacturing and after 6 iterations, prototyping and experimentation I was able to develop a functional prototype that fills me with pride. My advisor has been very patient and guided me step by step to develop what I now hope will be the start of my doctoral project. The laboratory is a fantastic place where there is a large amount of human, material and financial resources to achieve any project and that is something that is difficult to achieve in the academy. In addition, it is full of people of different nationalities who are generally very friendly and open to collaborate in the investigation and also to celebrate.

As negative points, the COVID-19 pandemic clearly stalled, modified and limited the amount of experiences of an exchange such as attending summer festivals, traveling a little more and sharing with other people in the traditional way. On the other hand, I must say that I underestimated the cost of living in Japan and at some point I found myself in a tight spot regarding money so, it is necessary to be responsible with finances in Japan. Additionally, outside of my laboratory or the university there are few people who speak English so, for me, arriving without knowing any Japanese, this was a complication day after day. It is recommended, although not absolutely necessary, to know some Japanese before coming (however, it is learned on a day-to-day basis after several months).

Finally, a couple of stories that will be memorable for me for the rest of my life. First is to spend the new year on Mount Takao: we decided to spend the new year on top of this mount and underestimated the cold. We had a difficult night where we were constantly shivering and the only source of heat was ourselves hugging each other, however, we managed to spend the night and were able to observe the first sun of the new year accompanied by a beautiful and unexpected view of Mount Fuji. It was literally the sun of a new dawn and the symbol that we would survive. Second, spend the night watching movies, chatting and sharing food from our countries to realize that hours later it had already dawned and it was a new day. In Japan there are no reasons to stay at home, so the houses are usually small. There is much to know and do, much to share. Japan is one of the safest, most diverse and picturesque countries in the world and that must be taken advantage of.