

### Overall impression of the research period

Since I arrived in Pittsburgh a week before my official start date of the research period I visited the lab a little bit earlier than my advisor had thought. Since I was early my advisor was still on vacation. So my first time at the lab the PhD student of my advisor showed me a little bit around and explained on what he did in the lab.

On my first official day of the research period I got to meet my advisor which welcomed me very warm and nice. Since I would be working in an ongoing research project we started to discuss about it right away. My advisor explained the current status of the project as well as the history of it. Afterwards we discussed which goals my research project should have. Before coming to the US I had already prepared myself with reading various papers about the project which I would be part of. The Microdynamic Systems Laboratory which I would be part of for the duration of my research period had a lot of plans for me. On the one hand this was interesting, since I had the chance to define which specific parts I wanted to work on. On the other hand it was also a little bit confusing, since some ideas were very wide spread and not really defined at the start of my stay in Pittsburgh.

Since the project was already running for almost 20 years it took me a long time to fully understand the inner workings of the hard- and software. After two months I had a good enough understanding to really start working on my part of the project and to give valuable input to the project. Therefore I really think that a research period of at least 6 months is the shortest amount of time which makes sense in this environment. In the initial phase of the project (getting to know the whole system) I learned a lot which was not covered in the study program which I took at my home university. It really helped that I could sit in different lectures and had some theoretical concepts explained there. The main time (~ 4 months) afterwards I worked in a small group which helped to improve my skills in the robotics field.

The current working group in this project was very small (4 people). Therefore I could make some input on the architecture of the software and thus made some big decisions about the future of the project. In order to make these decision I had to come up with a good representation of the software architecture as it was before, the changes I wanted to implement and the reasons and benefits which this would entails. After presenting it to my supervisor and the rest of the team I could implement it the way I had described it. I think this is only possible if the group is small and it is the right time in the project but this decision making process helped me a lot in structuring my thesis before writing it.

### Quality of the research institution

The quality of research done at Carnegie Mellon University is amazing. There are so many different fields which are part of the School of Computer Science that you can find almost every different branch you want to look for. Especially my department, the Robotics Institute, has a broad variety of robots which are researched, from small snake-like to robots which are designed to land on the moon and everything in between. Through other local and international students I got an insight in other departments as well as their research projects. The quality of these individual projects is as amazing as the quality of the whole Institute.

The Robotics Institute has its own discussion event once every week, the so called Robotic Seminar, where people from around the world are invited to speak about their special field of robotic to the institute. The discussion afterwards is very enlightening and as a research scholar you are invited to join in the discussion.

Questions about specific projects were directly answered if you visited the lab where it is researched. The department had no problem with showing their projects to other students / researchers, which displays the state of mind of the whole university very good in my opinion: An open minded University.

### Integration in the research institution

I was very integrated into the whole research lab from the first day when I arrived at the university. Since it is a very small lab (9 people) the whole atmosphere was more like a big family than a work environment. My advisor was available almost daily for questions and recommendations.

The lab had one international Post Doc which worked in the same project as I did. Since our parts in the projects did not really cross we worked more or less on our own. If I had any questions about the operating system or in general about CMU I was more involved with the PhD student working in the lab. At the time of my stay he was just finishing his PhD thesis so he had already worked almost five years in the lab. This was very helpful since he knew almost everything about CMU which I needed to know.

Through working together we also developed a friendship which resulted in different activities like going to a movie or hanging out on the weekend together. This really helped me to find my way around the city and not feel alone in the US.

Furthermore my advisor took the whole lab to different outings in Pittsburgh which also helped to get to know the whole group better.

### Recommendations for future MPS scholars / fellows

Take into account that it takes a long time for the whole Visa process before your stay. First you need to get the DS2019 letter from your host university and after that you need to visit the US embassy in order to get the J1. Before that you are not allowed to enter the US.

Although you should inform yourself about the housing in advance to your stay. The international office of your university can give you good tips to look for. You should think about the timing of your stay. For the most time you will start in the middle of the American semester, so cheap housing will be hard to get. A good alternative to the international office is [craigslist.org](http://craigslist.org) where you can find housing in private flats outside the university. These are often cheaper and easier to get for short stays (< 1 year).

A good place to get information about your university and the activities offered is the international office. You should meet them as soon as possible after you have arrived in the US. They can help you if you have any questions and tell you about interesting activities designed for foreign students in order to learn your way around the campus and connect to other students.