# Report of double degree master on Mechatronics. First Semester at Peter the Great Saint Petersburg Polytechnic University

Saint Petersburg
from 09.2015 to 02.2016
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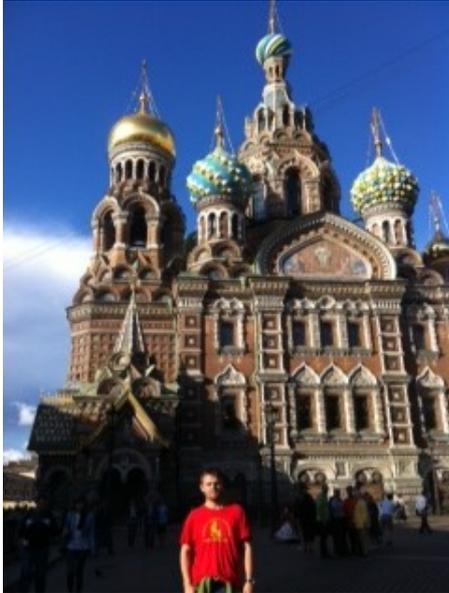
Illustration 1: Church of the Savior on Blood

After 6 months in Saint Petersburg studying in the Polytechnic University of Saint Petersburg and being an exchange student from Leibniz University of Hannover, I can say that the experience of this time have been result positive to me for many reason, the reality is that not every time was great but my final mark is awesome. Like every experience, this one has good and bad things, to explain the program let's divide the experience in 3 different parts. The beginning, the preparation of the experience, the second part is the experience and the third part after the experience.

The beginning, the preparation was a completely disaster, it wasn't possible to know exactly the date of the first day of classes, that's why I came two weeks before the beginning of the master, I couldn't find much information about the residence, if I develop more this point: I spoke with two person about the residence and they are not in charge of it, so they sent to me the website with the information of the residence, in the web you can read that in the residence you have a room in "flat" each room is for 2 student (3 in the case that they are full of students), each flat has two rooms with one kitchen, one bathroom and one toilet, and each flat is a really big corridor with a lot of flats, the reality when you arrive is different, there are 3 students in every room, so a little bit small for 6 students each flat, everything is prepare for 2 students per room, so when the put 3 bed for room the space is not too much.

If I continue talking about the preparation of the travel, the most countries needs an invitation to do the visa, I received it one week before the official day to starts the classes, the 1_{st} of September, that's why I paid extra money to do my visa faster, but do it in the normal time and come late is not a problem because the first week of classes it doesn't real start. A second big point of preparing the travel, focus on the visa, you will receive the invitation for the Visa for 3 months, anyone says anything and is a little bit confuse at the beginning but when you are in Russia they will extend your Visa for the whole year, so you don't need to go outside of the country or something like this, like some friends I had in different countries.

Illustration 2: Peter and Paul Fortress from the frozen Neva river

Illustration 3: IMOP's building

The mid part of this experience is the stay in Saint Petersburg, the beginning was a little bit difficult, you should know that is so different country, different culture so everyone needs some time to adapt, I have some friends in Saint Petersburg that they couldn't adapt making their stay so bad and some friends who could adapt having a really good experience here, but let's begin with the beginning of the stay.

The first day when you arrive, you can't understand anything if you don't speak Russian and is difficult to find someone who speaks English and Russian. I took a taxi from the airport but a lot of them require some extra money only because you are foreigner, it is easy to go directly by bus and metro searching on google how to, but in the case of take a taxi you can do it with the app "Yandex Taxi" you don't have to talk with the taxi driver (the most of them doesn't speak anything of English) in the app you only put the destiny, I went to the IMOP, address Gransdansky Prospekt 28 (Illustration 3), but it can change is better to ask the coordinator of the master) and your localization and it search a taxi and says to you how much it's going to cost. When you arrive the residence you have to speak with the security guard, probably he doesn't speak English too, but he has a list with the names of the students that are going to arrive this day, so you will communicate with him and he will say the number of your floor, then you have to talk with an woman who manage the floor and she will give to you the bed clothes and pillow, this first day is the most impact day, everything is so different and different mentality. I had some free days so I started to discover a little bit the neighbourhood, starting to ask for food in some restaurant, I found some supermarket around here. The most useful is talk with the international student I was living in the IMOP (International Faculty) and in the floor of the Masters (your floor), so the most people speaks English and everyone knows how is Russia and they will help you to find the good places, for me they made a really good stay there.

The next step is the starting of the classes, the first semester we had 6 subjects:

Mathematical modelling and simulation:
This subject is an introduction to control theories, it is interesting to the people who didn't study control theories in his bachelor, because the professor only talks about different models of control, but he don't explain about the mathematical descriptions. To can present the exam you have to do some laboratory reports and one project. The laboratory classes are in Russian style, the professor work with his computer and the projector and you have to replicate the same in your report. The English level of this professor is medium is difficult for him to answer some question but he can impart his class without any problem, the exam consist in 2 question from a list of 30 question the professor gave to the people the last day of class.

Scientific research work:
This subject was more than I expected, as the name says is about do a scientific research work, the theoretical part of the project, the work can be in groups and you make the group as you want, in the first classes the professor will explain the subject and after it the classes are to answer your questions if you have some. In this subject you can do the project as you want, there are no boundary to develop what you want.

Modern problems of computers and information engineering:
This is a maths subject, there are two parts of this subject, the laboratories and the exam. The subject starts with the theory, an introduction of an optimization methods, and continue with the laboratories classes are an application of this methods. After that the exam consist on some questions about this methods.

Neuroinformatics and neurotechnologies:

This is the main subject of the first semester, the professor is the head off of the department, and is about the learning theories and the theories of the artificial neural network, this is a really useful subject and consist on one project of build your own neural network to solve the task you want and an exam of theory, you should present both to the professor after the exam.

Intelligent systems

This subject supposedly should be one of the most interesting subjects, artificial intelligence, but the problem this year is that our professor doesn't speak English, so the professor write his speech in word and translate it (bad translation with some software), and in his classes he use two screens, one with the speech and the other one with the slides, doing the most interesting subject, the worst one, this part is theory, the professor gave to us the theory to study one week before the exam and a list of 30 questions, the exam consist in two random question from that list. The second part of this subject are the laboratory classes, the professor use a really old programs and the most tasks are in Russian so two Russians students helps us to translate the tasks to can do it, but the problem is that some software are in Russian too, so we didn't know exactly what we were doing. For this reasons one of the most interesting subjects change to the most boring subjects.

Software development technologies

This subject is about C# programming, we did a project at the same time of the professor (we were following what the professor was doing in the projector) it was a data base in this language, there are good things and bad things in this subject, the professor require a really high level of programming in this subject, so difficult to the most of us that we didn't programming before in a high level. But it was good to see how it works because if you don't know how to do, the professor only require in the exam to you to understand the code and understand how it works, so as an introduction of a high level programming it was a good subject.

Methods of optimization

This subject is a subject of the second year of the master in Saint Petersburg, because is an exchange program, is the second part of "Modern problems of computers and information engineering". The same professor impart this subject and she goes more deep in the theories of optimization, very useful for the artificial neural network, and the evaluation of this subject consist in one course work about one method of optimization, each student has different method. For me was with "Neuroinformatics and neurotechnologies" the most interesting subject, probably because I really like mathematics but that two were the best subject.
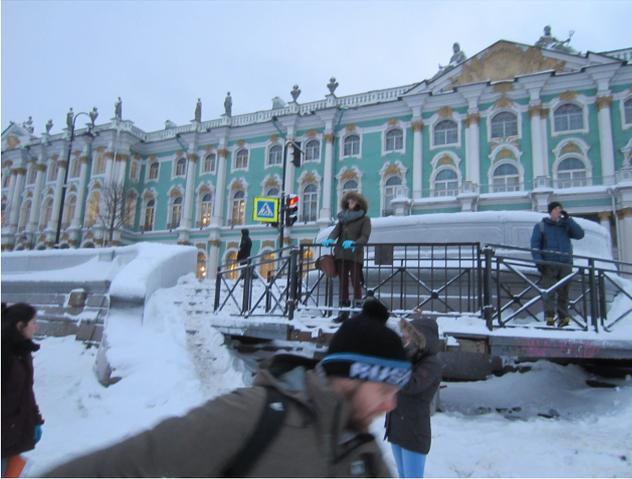
Illustration 4: Hermitage palace from the frozen river Neva

Continue talking about my experience, you will have a lot of time to work on your project so an curious person have enough time to do his projects and discover the city, Saint Petersburg is a the second city in Russia with a lot of things to discover. This two points (projects and discovering Russia) made my experience so exceptional. Because the Russian culture hide a lot of things everywhere, just walking in the street you can find a really amazing places.

Finally, my conclusion is that the beginning is difficult like all new place, and the big change of the culture and the barrier of the language makes the beginning more difficult, I know people who couldn't pass this barrier. But if you can pass this barrier the experience and the things you can learn here are more than the academicals things you can learn in the university. Discovering the hospitality of the Russian people. To finish give thanks to the LUH and DAAD to give me this great oportunity.