

My Canada-EU Student Mobility Initiative Personal Experience Report

By Daniel Naaykens

I first learned about the Student Mobility Initiative in November 2008, when an email sent by the Co-operative Education office advertised for two research positions in Hungary and Romania on hockey playing robots. Having worked on a similar project before in ENSC 230 (Introduction to Mechanical Design), I jumped at the opportunity to continue the work in another country. Thus began my 6 month adventure in Hungary and the many other countries I would visit during my time there.



Budapest Műszaki Egyetem, with the Statue of Liberty atop Gellért Hegy in the background

I boarded my plane for Budapest on January 16th, at 6:15 p.m., where after a 2.5 hour delay we departed to Schiphol Airport in Amsterdam, where I then boarded a connecting flight to Budapest. Practicing the broken Hungarian I had learned before I left, I managed to catch a(n illegal) taxi to the flat I had found through Facebook. Over the

next few days I found my way through the city using the BKV transit system of trams and buses, began orienting myself to my new surroundings in the city. I found many places to shop, including megastores like Auchan and Tesco, and began exploring the historical districts and sights of Budapest. Budapest is a very cosmopolitan city, full of beautiful vistas and panoramas to explore. The River Duna (Danube) flows peacefully between the two sides of the city, Buda and Pest, and beautifully reflects the lights of the city at night, when it is at its most breathtaking.



My flatmates and I in the park near our flat

Adjusting to living and working in Hungary was difficult at first, mainly due to the language and cultural barriers. The street layouts and markings are completely different from here in Canada, as the street signs are placed on each group of buildings and not the street. This can make navigating difficult as these signs are often illegible, or have been removed during the massive amounts of renovations and repairs underway in Budapest. I relied mainly on pointing to things and using simple English and facial expressions, until I learned the appropriate Hungarian phrase “Hol van ...,” meaning “Where’s the ...” Starting work and school was the best way to start finding my way around, as once I had some good advice on where to go, it became much easier to navigate. Taking the “Intro to Hungarian Language” course offered at BME made it much easier to understand people and engage in conversation.



The Advanced Robotics Laboratory

The Canada-EU Student Mobility Initiative moves students to work outside of their own country, promoting an international sense of scale to a project and enabling both teamwork and competition between participating universities. Each school is working towards creating a common hardware platform for the Hockey Robots and at the same time, creating individual software solutions. Each student is thus able to work with both the hardware and software aspects of the multi-faceted research of robotics, and develop many practical skills in robotics. The student's research is built upon previous students work and thesis projects, allowing new students to experience the insights of their mentors in the field of mobile robotics.



The modified Robot Soccer Tank, with custom micro-controller board

I worked mainly on Robot Soccer software development with Professor Istvan Harmati, which was focused on accurately controlling the robots when moving them from one position to another. As there were already controls in place for controlling the robots by computer, two methods were devised: storing a calibration value for each tank on the computer, or calibrating each tank with the positional feedback. We decided to create a new control scheme that works by telling the tanks where they are and where to go. The tank then calculates the distance and time necessary to drive there. This is done accurately using a calibration routine that determines turning speed, driving speed, and the offset in speed difference between the wheels.

The Robot Hockey development involved constructing a hockey robot from designs prepared by the Romanian University. One of the problems with hardware construction in Hungary, although not limited by the number of small electronic stores selling common circuit elements, were the “more complicated” circuit elements such as antennae and receivers/transmitters. Although most companies have international divisions, shipping to Hungary could only be completed through the U.S. division, and the U.S. Postal Service.



Integrating into the local culture in Split, Croatia, while attending a cultural festival with my girlfriend Tessa

To communicate with my family in Canada, I relied heavily on free internet based communication services, such as Skype™ for international calling, Facebook© for social messaging, and LiveJournal™ for blogging. I also started to upload my photos online using Picasa™ and Flickr®, which are Google™ and Yahoo® services. I also took to sending postcards to my older relatives that do not use computers or email.



Sunsets of Budapest, Clockwise from Top: Overlooking Pest from Castle Hill, The Statue of Liberty atop Gellért Hegy, Parliament, and Buda from Szabadság Hill

I traveled in the nearby countries of Slovakia and the Czech Republic during the term with new friends I had made, and to many cities in Croatia when my girlfriend Tessa came to visit me. After my position with Professor Harmati ended, my brother and best friend flew out for an amazing month's travel around eastern and central Europe. Although during my stay in Hungary I learned a new language, I found it is wise to know some of each language spoken in the countries we visited, as once you leave a country, you leave their language. Even knowing a supposed "general" language such

as English does not always help. While it is often said that young people speak the best English I found this to be untrue, as older people are most skilled in English as often their children have moved to an English speaking country and they have had to learn the language in order to speak to their grandchildren.



Vienna with my best friend Ryan (top left), myself (middle right), and my younger brother Andrew, (center)

The Canada-EU Student Mobility Initiative allowed me to accomplish my dream of traveling through Europe, and opened up a lot of doors for my future. I met many interesting new people, and made a great deal of friends and contacts, all of whom have been invited to visit me in Canada. It has also afforded me a wider view of the world and allowed me to see and appreciate my own country in a new light. While I am very happy to be home in my own country, there are a few European commonalities I would like to see implemented in Canada, such as the fantastic public transport systems. I will also miss buying bottles of pop with 200 forint notes! My experience in Hungary has been invaluable and I am glad for the opportunity I had to live, work and integrate into a very different society and culture.