

Justin Sundaram

German International Engineering Program

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5th Year Senior, German and Mechanical Engineering

FALL 2015: Study Abroad at Technical University of Braunschweig

SPRING 2016: Internship at Skylotec
Neuwied

Development of new climbing products

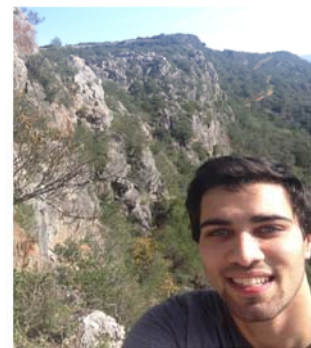
The University Host:

Just after we arrived there was a three week intensive German language course which really knocked off a lot of the rust from the summer. It was a lot more intense than the German classes at URI. During these classes I met most of my friends for the following semester. They were all exchange students who wanted to learn German so speaking only German with them was fun and easy to maintain.

During the semester, the classes weren't so concentrated which gave a lot more time for Sports, meeting up with friends, and most important, TRAVELING!

My favorite course was Technical German Vocabulary because I could learn how various mechanisms and systems work which enhancing my German skills. This was useful during my internship.

Life in Your Country:



At first it took some time to adjust to life in Germany, especially waiting at crosswalks for green before I cross, instead of simply looking both ways before crossing. Once I settled into a rhythm, it was quite nice. I could meet up with friends and partake in activities I enjoy. There was a bouldering gym just up the road from the student housing in which I met up with friends and met new people with similar interests.

Skylotec:



Your Company

I completed my internship at Skylotec, a company that designs and manufactures equipment for Industrial and sport climbing.

For my project, I was tasked with designing a new assisted braking belay device for rock climbing. When finished, this device will be added to Skylotec's product line.

The Project:

This project gave me a first hand experience on the design process. Because my project wasn't a high priority, I was able to have the responsibility of leading my own project without the pressure of due dates, which fosters a great learning environment. I found out what works and what doesn't. After drawing up a concept I thought might work, I would then construct a functional model out of wood to really test and refine the design. Equally as valuable as the successful ideas were the lessons from the ideas that didn't work.

Impact:

Completing the internship at Skylotec was one of the biggest steps for my future. I gained valuable experience in the field that I want to pursue as a career.

In addition to helping me acquire a job in the future, it allowed me to feel sure about my decision for choosing this industry to enter.

Even more importantly I have a greater appreciation for people in the US for whom English is a second language. It was sometimes hard when I couldn't express myself exactly how I wanted to, and I could always switch to English if I needed to. The way I will perceive intercultural experiences in the future will definitely be positively affected.



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THE UNIVERSITY OF RHODE ISLAND INTERNATIONAL ENGINEERING PROGRAM

Global Update

Summer 2016 Volume 19 Issue 1

uri.edu/uriiep

Dear friends,

The summer months featuring our IEP immersion German and Chinese summer schools have come to a conclusion. 46 enthusiastic IEP 5th years returned from their year abroad, and the next generation of 69 excited 4th year IEPers just left for their educational adventures in Europe and Asia. Our IEP Living & Learning Community is filled again with a familiar "buzz" of anticipation for the new school year.

In this global up-date, I would like to share a few selected posters created by our returnees from their sojourns abroad. Hopefully, they will give you a good impression about the vitality, breadth and depth of an IEP experience.

Some IEP students, alums, and company hosts will further exhibit their involvement in the IEP at the 19th Annual Colloquium on International Engineering Education: Preparing the Global Workforce, to be held November 3-4, 2016 in Newport. You are all cordially invited.

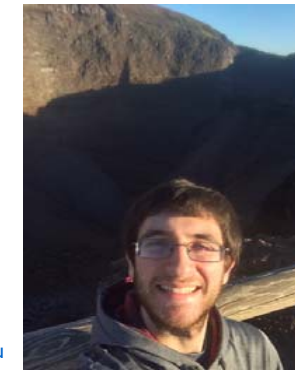
Please also mark your calendar for the IEP's 30th anniversary reunion on June 3rd, 2017 on the Kingston campus. As in its beginning in 1987, the ideas of our founder, John Grandin, are alive and well in the IEP community and central to our mission and continued growth.

Best wishes,
Sigrid Berka

Samuel Karnes

Italian International Engineering Program

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5th Year Senior, Italian and Biomedical Engineering A

FALL 2015: Study Abroad at University of Calabria

SPRING 2016: Research Laboratory of Mechanical and Industrial Engineering University of Calabria

I utilized Matlab software to create 3D models of robotic instruments.

The University Host:

The University of Calabria is the first and one of a small number of residential university campuses in Italy. Its buildings are situated along an amazing suspension bridge that I would walk along daily to get to my classes and the laboratory. Every morning I enjoyed the most beautiful view of the rolling hills below then attended my lectures with friends. The classes were mostly taught using PowerPoint or lecture material. My friends and I would study together and spend our evenings bowling, enjoying local concerts, or visiting the local pubs and ice cream shops. There were sporting and musical events constantly hosted by the university itself for entertainment as well.

Life in Your Country:



Life in Arcavata, Calabria reminded me greatly of Rhode Island. The area is quite rural but this meant there was always an opportunity to enjoy nature and the clear blue waters of the beach. If I was in the mood for something else relaxing, there were freshly brewed coffees at bars all over the city and food no one could ever forget.

The Host Company:



LAMABIO

This laboratory manufactures robotic rehabilitation and surgical devices. My objective was creating a functional model

of their leg and arm rehabilitation device. Using Matlab I designed a model which could rotate or translate along each joint parameter based on the device itself. Should anything be changed on the device the variables could be altered, input into my equations, and then remodeled for analysis.

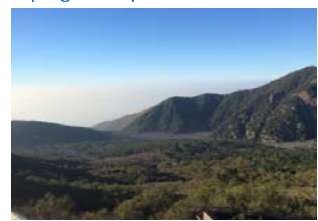
The Project:

My project in the research lab involved the 3D modeling and analysis of a robotic rehabilitation device. In order to understand these concepts I studied kinematics, or a branch of mechanics related to the motion of objects. Specifically, I studied forward and inverse kinematic equations. These equations describe the motion of objects and give a resulting location based on the joint parameters of the instrument. Using Matlab, the measurements of the device, and these equations I was able to model and predict 3D motion of their device.

Impact:

My time abroad was an unforgettable experience. I have not only grown as a student but as person and an engineer as well.

It has given me the opportunity to embrace a new culture and gain lifelong friends. Furthermore, I now have professional experience and improved technical skills related to my field. As a result, I feel much more prepared for a career in biomedical engineering. This program has also inspired me to help future students attain their study abroad goals as the Italian IEP ambassador. I can't wait to assist fellow IEP students and for them to experience everything this life changing opportunity has to offer. I look forward to my future in engineering and the opportunity to help the program expand.



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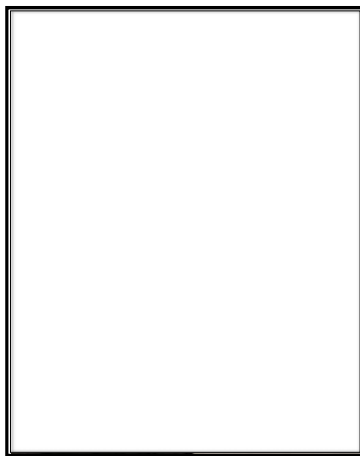


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Samuel Hawkins

German International Engineering Program

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5th Year Senior, German and Civil Engineering A

FLL 05: Study Abroad Technische Universität Braunschweig

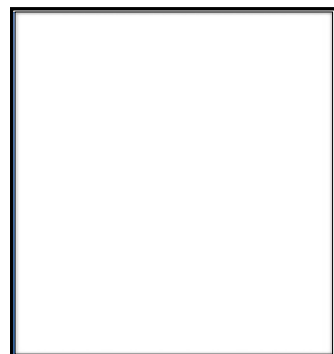
SPRING 2016: Internship at Deutsche Bahn Engineering & Consulting Hannover, Germany

Assisted the DB E&C Northern Division's Construction Planning Department

The TU Braunschweig Host:

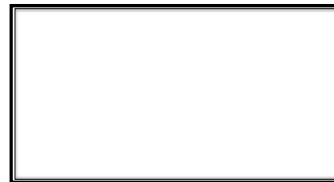
While attending the TU Braunschweig during the Winter 2015 semester, I participated in several German language instruction courses. In these courses we discussed grammar, culture and history, and technical terminology. I also had the ability to sit in on a few engineering courses while at the university, including a geotechnical engineering lecture. The modus operandi of the TU Braunschweig is fundamentally identical to that of an American university. Perhaps the largest difference is the amount of responsibility that students must assume for their own coursework. Homework and exams were never mandatory, but entirely necessary for comprehension of the material. Overall, my experience at the TU Braunschweig was a positive one, and it served as a perfect environment to further improve my engineering and German language skills.

Life in Germany



The city of Braunschweig in Lower Saxony is very interesting in both a historical and recreational sense, offering everything from antiquated churches and buildings to laser-tag, go-carts, and modern shopping malls. Its efficient tram and bus system make it extremely accessible. Bakeries and supermarkets are ubiquitous, and enabled me to easily access reasonably priced food and drinks. Braunschweig is a fantastic city!

The Host Company:



DB Engineering & Consulting GmbH

Deutsche Bahn is Germany's national railroad. It is split into several smaller subsidiaries, one of which being DB E&C, which designs, plans, and maintains the infrastructure.

As an intern at DB E&C, I was assisted my colleagues in the preparation of important planning documents, including overhead wiring plans, track blockage reports. I attended several meetings and observed two construction sites throughout the duration of the internship.

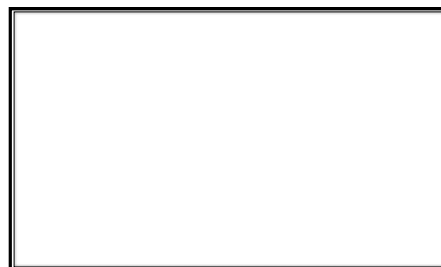
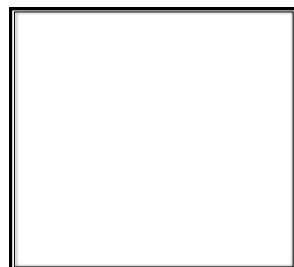
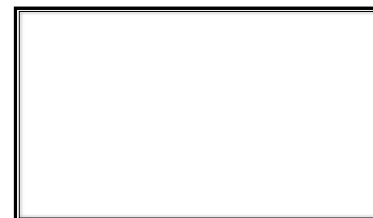
The Project:

This internship was particularly interesting because I never had one specific project. I often had several smaller projects at a time, each taking approximately three weeks to complete. I started by drawing overhead wiring groups (Schaltungsgruppen) on station diagrams. I also assisted in the completion of track blockage reports (Sperrpausenübersichten), and attended several meetings pertaining to the construction process. Several topics were discussed at these meetings, such as the types of machines that needed to be used and what site access infrastructure needed to be built. At the end of the internship, we switched our project management software, and I was in charge of the transferal process for my department.

Impact:

In the age of internet communications, companies on opposite sides of the world are closer than ever before. Commerce is globalizing, and the IEP has prepared me to enter the global marketplace.

Through the IEP Program, I have learned to speak the German language fluently, thus opening doors to jobs in Germany, Austria, and even Switzerland! It has made me a better professional, as I am able to compete in a competitive and global marketplace. I have learned an incredible amount about the construction process and the nature of the industry as a result of my internship at DB E&C, providing me with background knowledge that is absolutely imperative for all civil engineers. Though these are extremely important points, I have also developed personally as a result of the program. I have lived out of my comfort zone for an extended period of time, which has made me responsible, cautious, and adaptable to any environment. I look forward to my bright future, and I have the IEP to thank for it!



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THE UNIVERSITY OF RHODE ISLAND

John Paquet

German International Engineering Program

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5th Year Senior, German and Biomedical Engineering A

FLL 05: Study Abroad Technische Universität Braunschweig

SPRING 2016: Internship at Siemens Healthcare, Erlangen, Germany
Microfluidics and Blood Analysis

TU Braunschweig:

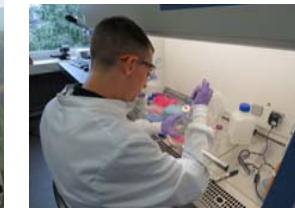
Living in Braunschweig for the first five months of my experience in Germany was awesome! Braunschweig is such a lovely city, and I really felt at home there. Beautiful architecture, wonderful parks, cool bars, and a very charming atmosphere are just a few of the great traits of Braunschweig. The university is full of research opportunities and the campuses are always teeming with student life. I definitely enjoyed the courses at TU Braunschweig, as well – I found the three-week Sommerkurs to be especially beneficial – and it was great to closely connect with and to work with the German students in the IPP course during the semester. The group excursions from the Sommerkurs and with Gauß-Freunde with the other international students were always a blast, too! Such an amazing experience in an amazing city!

Life in Germany:



Full of comfort, surprises, and adventures at every corner – Braunschweig and Erlangen are both wonderful, unique cities that have a lot to offer. Whether relaxing with a coffee, admiring nature, or strolling through the streets, German cities and towns urge to be explored and, most importantly, enjoyed.

Siemens Healthcare:



Siemens has been producing top innovation and ingenuity in medical devices and systems for over a century and continues to do so as one of the foremost technical companies in the world.

Over the six months of assisting in projects, running experiments, and conducting measurements, I was able to contribute to the improvement and better understanding of experimental processes and essential correlations.

The Project:

In one project, I used lithographical procedures to assemble microfluidics for blood analysis with two glass microscope slides, laminating them with epoxy sheets, baking to strengthen adhesion, exposing micrometer-high channels for blood flow onto the sheets, and developing after exposure. In another project, I analyzed the effect of various concentrations of PVP, a long-chain polymer that improves the flow profile of blood, in solution with buffer on the healthiness of erythrocytes to determine the optimal concentration. In addition, I analyzed the flow of magnetic nanoparticles through microfluidic structures that lead to single-file flow of the particles, resulting in improved analysis.



Impact:

This year has been nothing but incredible – the wide range of experiences I received from living, studying, and working in Germany have without a doubt made me a more open-minded, diverse, adventurous, and self-confident individual. I now feel much more prepared for what the future has in store – further studies, a career, and simply life in general. This year has really opened my eyes to the world, and I can't wait to explore and to experience more of it in the years ahead.



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