





cesip



Chalmers Engineering Student
Internship Program

2020

Internship Report

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What is CESIP?

CESIP, short for Chalmers Engineering Student Internship Program, is a student organization at Chalmers University of Technology in Sweden. It is the merger of CETAC and AMCIP which both were founded over 50 years ago. Since our founding, our mission has been to bring highly educated students and high-tech American companies together. Over the years our program has made it possible for thousands of students to gain practical experience with companies such as Google, Microsoft, NASA, just to name a few.

One of our goals is to foster international business cooperation. Therefore, we make sure to only bring highly motivated and technically skilled employees to the participating companies. With a different perspective, fresh ideas, and burning interest we are sure to make solid and unique contributions. We also believe the cultural exchange to be of great benefit to both parties.

Who can apply to CESIP?

Students at any of the five-year programs at Chalmers University of Technology who will have at least 120 credits and have completed their bachelor project before beginning their internship can apply. Please visit our website at cesip.se or contact us at contact@cesip.se for more information.

Letter from the editor

At the time of writing the final votes regarding the US election are being counted. There is a lot at stake for the country, but the election outcome may also affect me personally. On June 22nd President Trump suspended and limited entry to the United States of any seeking entry through a visa until December 31, 2020. The board including me, and our members were of course devastated but the suspension was an understandable decision due to the rapid spread of COVID-19 all over



the world. Luckily for me, the company I'm in contact with, are still interested and would like me to start my internship as soon as possible. There's a lot of uncertainty at the moment, how the COVID-situation develops will affect the visa situation for sure, but the chance to experience American culture, business, and lifestyle is something I won't give up easily.

When I joined the AMCIP 2020 board in the beginning of 2019 I was excited about the possibility of working in America together with great people from all over Chalmers. After the election of board members, we got to know each other and started planning for this adventure. We recruited 10 members and held a kick-off before finishing our studies prior to the summer. During the summer I took the opportunity to read the previous internship reports which was an exciting read, to say the least. Members have had great experiences and jobs where they feel essential and can really contribute to the company parallel to getting invaluable work experience in their area of expertise. This is really a testament to the great education we receive here at Chalmers.

AMCIP has been providing internships in the US and Canada for a range of engineering programs at Chalmers University

of Technology since 1956 and has now come to the decision to merge with CETAC, who has done the same for the other programs at Chalmers. Together we elected the board of CESIP – Chalmers Engineering Student Internship Program who will continue the work of AMCIP and CETAC by bringing together students from Chalmers with host companies in North America. I'm very proud to present to you the very first CESIP catalog! Here you can read about the two previous associations, their history, previous internships, and amazing experiences in North America.

I would like to thank everyone who gave me this opportunity. Even though the internship didn't pan out as expected I've met fantastic people and made new friends. Thank you to our hard-working members for making this report possible. Thank you to my fellow board members for proofreading and helping me with the report. Thank you to Stefan Bengtsson, the principal of Chalmers, for supporting our endeavors. Lastly, thank you to our host companies for providing us with this fantastic opportunity.

Enjoy your read!

Sincerely,

ANTON STJERNHOLM BÖRJESON
EDITOR, AMCIP 2020



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Internship Report | I



CETAC 2020

Apply to CESIP!

An internship in North America does not only offer students valuable work experience, but also an insight into a different culture. Experience and understanding of different cultures is a highly demanded skill in our ever more global work environment. Good English communication skills are also highly sought after since most engineers nowadays need to be able to convey ideas in a world where the English language is the main language used by most businesses. CESIP welcomes motivated students who wish to get a little extra out of their studies.

The duration of internships stretches from eight weeks to a year. The hosting companies vary greatly in size and area of business and the work assignments also vary depending on the intern's field of study. Our organization, which has existed for more than 50 years, this year

consists of 23 students at Chalmers University of Technology, of which 14 are members and 9 are board members. The board is responsible for the overall management of the organization in addition to the specific tasks for each position.

If you are interested in applying for an internship starting the summer of 2022, the application period for this will be in 2021. Before going on your internship you will be active within the organization for one year, helping CESIP in both finding and funding the internships you will later apply to. This is an exciting year where you will get to know other students from all over Chalmers as well as prepare you for an upcoming internship.

If you are eager to learn more about previous students and their internship

experiences in North America, read the reports in this magazine. Due to the current pandemic and travel restrictions most internships for AMCIP and CETAC 2020 have been canceled or postponed, so this year we've added a selection of reports from previous years.

We hope that this Internship Report will inspire and encourage you to aim for internships abroad and that you also want to become a part of our team and take this once in a lifetime chance for an amazing experience!

If you have any questions, do not hesitate to contact us through our website or social media!

CESIP.SE

FACEBOOK.COM/CESIP.CHALMERS

INSTAGRAM.COM/CESIP.CTH

CONTACT@CESIP.SE



AMCIP 2020

The Presidents Speak

Going into our year as Presidents of CETAC and AMCIP 2020 we already knew it was going to be an odd year for our committees. From the very first time we were introduced to each other by the previous presidents, the plan was to join forces and create a mutual organization, or at least try. In the past, both committees had served the same purpose, but operated differently and independently. During the creation of the committees in the 60s, they came to an agreement to work towards different university programs, and therefore different markets and fields. Today students aren't as limited to or constrained by their field of study, but their interests are usually what qualifies them for an internship. By having a wider range of host companies as well as qualified students from several fields, we were hoping to get better matches and achieve even better outcomes from this program. Besides, it seemed strange to have two different committees from the same university working towards the

same goal. Maybe it was the naive talk of two newly elected boards and some great help from our precursors that made us so determined, but once we had reached a mutual understanding of our goal, it was time to get down to business.

The fall semester consisted of a lot of evening meetings with long discussions and fortunately also compromises to build the foundation of our merge. We wanted to take the best of both committees, while simultaneously trying to make it even better and still leaving room for the new board to shape the committee. It was not the easiest task, and our board members and members still had to keep working hard to find internships and keep up our regular work at the same time.

When 2020 started, we had a plan for how this new organization CESIP, Chalmers Engineering Student Internship Program, should be implemented. It was really fun working together with the application

process, and we were able to find a very well put together board. Right after the new board was elected, everything was put on hold due to the COVID-19 pandemic. At first we all hoped that our members would still be able to go on their internships, but as the spring went on it became more and more clear that things would not work as we planned. As of writing this, we still don't know how everything is going to plan out, and when our members will be able to travel to the US. Even though we have not been able to go on an internship, it has been a wonderful experience to be a part of CETAC and AMCIP 2020. Making friends from other programs, traveling to Stockholm together, celebrating Thanksgiving together and everything else, has been a blast. It has been a year of challenges, but also a great lot of fun and learning and we are both happy that we took the chance, now almost two years ago and applied to CETAC and AMCIP 2020.

Seeing how the new board has managed the challenges that have been thrown at them so far, gives us confidence for the future of CESIP and we are excited to see what it grows into.

Sincerely,

**ERIKA NYSTRÖM &
UGNÉ MINIOTAITÉ**





Greetings from the board of CESIP 2021

The first year as a coalition of AMCIP and CETAC is in full swing, and what an interesting start it has been! Not only are we now one organization that covers all of Chalmers but we stepped in as a new board in the middle of a pandemic. It has been challenging, but we choose to be optimistic and are looking forward to an educational and rewarding year as CESIP 2021.

Due to the circumstances, last year's members had to face alternative solutions. Some of them are interning from home here in Sweden and some internships got postponed until next year. As CESIP 2021 we will continue the work of AMCIP and CETAC. We have an exciting year of unique challenges ahead of us and we make a team of outstanding members from different educational backgrounds.

Like so many other associations, we endeavor to maintain the performance within the framework of restrictions from both the university and the public health authority. This has been tricky since we are an organization with many social events but we are doing our best to make it work. We hope to become a close and strong team of members despite the fact that most of our work is done remotely.

Despite the uncertainty about the future, our visions of internships in North America have not faded. We are enthusiastic and would like to express our greatest gratitude towards all the people and companies that support our work and make sure it will continue. We would like to thank the board of AMCIP and CETAC 2020 for their guidance and the North American companies for welcoming us and for

BOARD OF CESIP 2021

From left to right

EMANUEL ENBERG

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ALFRED VIDÉN

Sales Manager

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MÅNS LUNDQVIST

Internship Coordinator

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Chairman

ANTHON ODENGARD

Treasurer

RASMUS DURGÉ

Internship Coordinator

making these internships possible throughout the years. We are excited for the first year together as CESIP!

CESIP 2021

CREATIVITY

FOCUS

DEDICATION

*"Where Drying and Pyrolysis is the game
- Torkapparater is the name!"*

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THERMAL PROCESSING EQUIPMENT

www.torkapparater.se



If you want to advertise here or support our
organization, email us at contact@cesip.se

**BOHLINS
MASKINER**

SÄTTER DU
DRIFTSÄKERHETEN
I CENTRUM?



Simulering med digitala tvillingar ger förbättrad kvalitet

Ett femårigt projekt inom Wingquistlaboratoriet vid Chalmers tekniska högskola i Göteborg fokuserar på simulering med digitala tvillingar vilket ger förutsättningar för den självkompenserande fabriken.

Wingquistlaboratoriet på Chalmers tekniska högskola i Göteborg har sedan 2001 fokuserat på forskning inom området digital produktframtagning. Ett centralt område inom Wingquistlaboratoriet är geometrisäkring med målet att minimera effekten av geometrisk variation i den slutliga sammansatta produkten.

– Området är centralt för industrin och specifikt när det gäller massproduktion där man vill att alla detaljer ska passa till varandra och vara utbytbara, säger professor Rikard Söderberg, föreståndare för Wingquistlaboratoriet, och fortsätter:

– Traditionellt sett hanterar man inom industrin variation genom att specificera toleranser, det vill säga hur mycket variation som är tillåten. Snäva toleranser innebär ofta dyr produktion då det kräver hög noggrannhet i tillverkningsprocessen. Programvaran för geometrisäkring, RD&T, som delvis utvecklats på Chalmers används av Volvo sedan 1998 samt ett större antal företag globalt.

– RD&T utvecklas nu vidare för att kunna användas som en digital tvilling av det produktionssystem vi önskar att styra. Vi kan då se RD&T som en digital kopia av det verkliga systemet, med möjlighet till optimering och styrning i realtid, säger Rikard. För cirka ett år sedan fick man inom centret ett större forskningsprojekt, Smart Assembly 4.0, från Stiftelsen för strategisk forskning, SSF. Det femåriga projektet fokuserar på geometrisäkringsprocessen och har visionen om den självkompenserande fabriken.

– Genom att utnyttja simulering i RD&T, tillsammans med nya möjligheter att snabbt kunna scanna ingående komponenter, kan man i framtiden ta hänsyn till geometrisk variation och justera monteringsprocessen så att man kompenserar för denna, säger Rikard och fortsätter:

– Det kan handla om att matcha rätt bitar mot varandra, att justera fixturer och utrustning och att välja rätt sekvens vid exempelvis punktsvetsning. Genom att mata en simuleringsmodell med data i

realtid kan den användas som en digital tvilling som i praktiken kommer att användas för att styra processen.

Rikard Söderberg som har forskat på simuleringsstöd för geometrisäkring i över 20 år ser med tillförsikt på den digitaliseringsväg som nu sköljer över industrin.

Foto: Anna-Lena Lundqvist



– Med digitaliseringsvågen kommer tillgången på data att öka. Med mer indata kommer vi få bättre simuleringslösningar. Alla bolag är konkurrensutsatta och vill vinna på smarta arbetssätt, säger Rikard och fortsätter:

– Hela industrin blir alltmer sammanflätad, de företag som vi jobbar med har ett antal underleverantörer som tillverkar komponenter. I framtiden får vi kanske mätdata på komponenterna till en Volvo från leverantörerna och kan bereda oss på informationen redan innan de sätts ihop. I de komplexa nätverken som leder fram till affären finns väldigt mycket data som gör att man kan få ut det bästa av slutprodukten. Kan man kommunicera digitalt och optimera produktionen och produktionssystemet utan fysiska möten och manuell hantering av data sparar vi mycket tid. ■

◀ *Rikard Söderberg, professor i produkt- och produktionsutveckling, prefekt för Institutionen för industri- och materialvetenskap samt föreståndare för Wingquist Laboratory.*

OM WINGQUISTLABORATORIET

Wingquistlaboratoriet är ett nationellt forskningscentrum för digital produktframtagning där komplexa och mekaniska produkter och deras produktionssystem utvecklas och verifieras tillsammans, helt digitalt.

4 forskargrupper: Geometrisäkring & robust konstruktion, Geometri & banplanering, Systems Engineering Design och Automation.

9 industripartners: GKN Aerospace Sweden, IKEA, IPS, RD&T Technology, SAAB, Sandvik Coromant, Scania CV, Volvo Car Group och Volvo Group Trucks Technology

Läs mer på: www.chalmers.se/wingquist



wingquist
LABORATORY



Institutionen för industri- och materialvetenskap stärker framtidens industri i ett hållbart samhälle med kunskap och tekniska lösningar.

Genom excellent forskning, innovation och utbildning skapar vi framtida industriella värdekedjor.

Institutionen består av sex avdelningar som tillsammans täcker forskning från användarbehov till färdig produkt inom den industriella processen:

Design & Human Factors

Produktutveckling

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Konstruktionsmaterial

Material och tillverkning

Produktionssystem

Labmiljöer

Virtual Development Laboratory

Productions Systems Laboratory

Materials Processing Laboratory

Stena Industry Innovation Lab

Usability Lab

Rock Processing Lab

Laboratory for Composites and Manufacturing

Centrum

Wingquist Laboratory

Centre for Additive Manufacturing Metal, CAM²

MCR, Metall Cutting and Research Centre

SCeNDT, Scientific Centre of Non-Destructive Testing

Squeak & Rattle Competence Arena



Läs mer om oss på
www.chalmers.se/ims

CHALMERS
UNIVERSITY OF TECHNOLOGY

Department of
INDUSTRIAL AND
MATERIALS SCIENCE



North American Zoom Agency

In the middle of February of this year, having a late night studying session, we received the email saying that we had been offered an internship at NVI at Goddard Space center in Washington DC USA. NVI inc is a contractor to NASA that specializes in geodesy using a technique called very-long-baseline interferometry (VLBI). In an instance, two dreams had come true. Not only would we be traveling to the United States for an internship, but we would be doing so to work for NASA. Thus began the

process of VISA application, apartment hunting and planning. We had great help from the NVI team, and when things seemed to be falling into place, everything was put on hold because of the COVID-19 pandemic. At first we all hoped we would still be able to travel to the US, but as the spring went on it became more and more clear that it would not be possible.

After a long spring of waiting and speculations came the decision that all NASA internships would be virtual, and we received the fortunate news that NVI could still offer us an internship albeit from a distance. The summer was no longer cancelled, and despite the sadness of not being able to meet our colleagues in the US, we were overjoyed with the opportunity to work with NVI. Even though we could not meet everyone in person, sitting in a Zoom call with NASA employees is still quite a surreal experience.

Both of us got our own assignments to work on, which was both a bit of a challenge, but it was also fun to be solely responsible for your own project. Ugnė's project was about helping to develop a tool that reads data files of the system temperature from different radio telescopes and automatically analyses that data and to present it in a graphical way. The point is to quickly

be able to get an overlook of the data, and be able to notice if something is wrong. Cody's project involved the validation and ingestion of files being submitted to IVS data centers. Each incoming file was matched with several data logs, control files and file naming schemes before having its contents validated and finally being moved to the correct file location. The purpose of the assignment was to move away from hard-coding file information, and instead store such instructions in external data description files.

NVI INC.

Founded 1989

LOCATION

Greenbelt, Maryland

WEBSITE

nviinc.com



UGNĖ MINIOTAITĖ

Born 1997 in Kaunas, Lithuania

EDUCATION

B.Sc. Engineering Physics

FUTURE PLANS

Enjoy my exchange in Austria and then come back to finish up my master's at Chalmers



CODY HESSE

Born 1997 in Örebro, Sweden

EDUCATION

B.Sc. Engineering Physics

FUTURE PLANS

Enjoy my masters studies at Chalmers and look forward to an exchange semester in Milan.



For both of our projects we worked a lot in the programming language Python, which we had very little previous experience of. Though challenging, it gave us both a good head start for our masters studies where we now mostly program in Python.

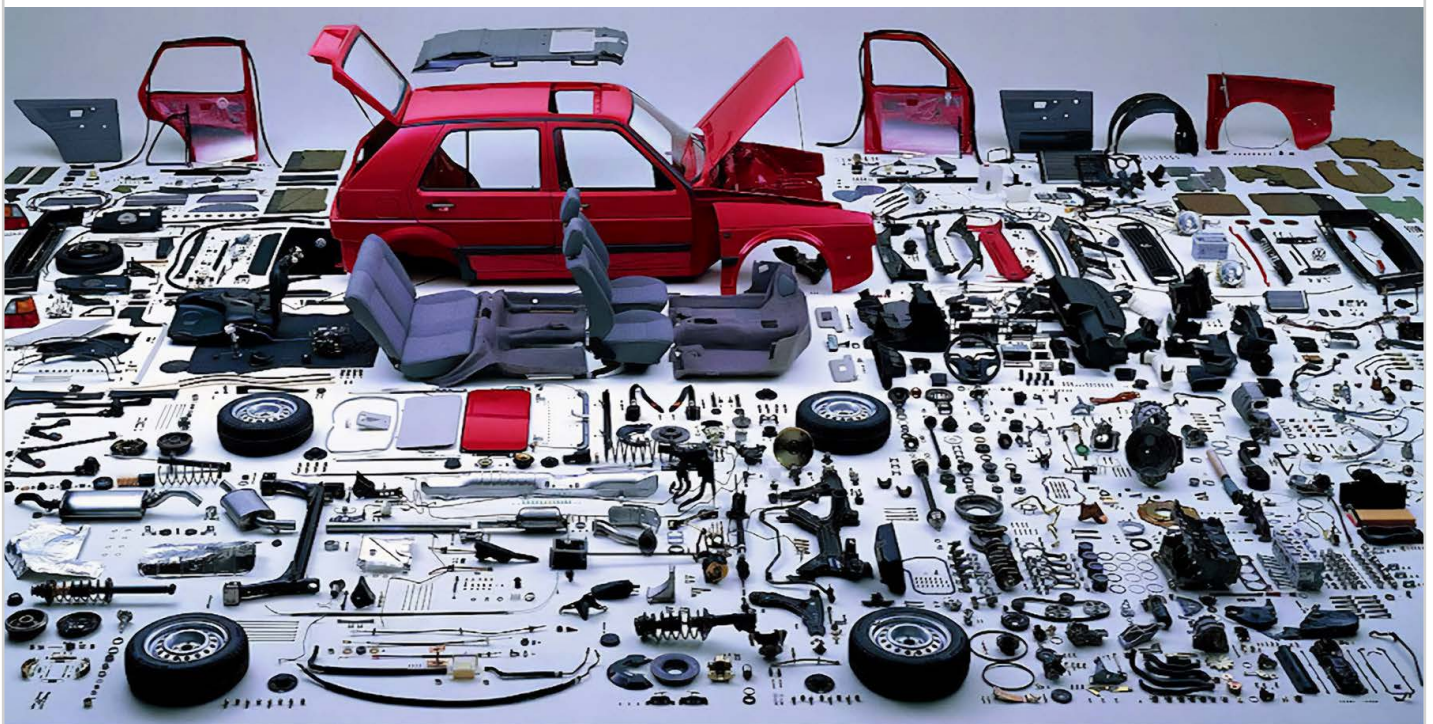
Something you quickly notice, even from an online point of view, is how close knit everyone at NVI is. The team often meets outside of work in a variety of social settings. For instance, once every month the entire office would

gather at a restaurant and enjoy a meal together. Due to the pandemic, with restaurants no longer being an option, they still gather for dinner, but now over Zoom. We recently participated in the October edition of this dinner and had a wonderful evening (even though it was at 11 pm for us). The atmosphere was very relaxed and we felt welcome and comfortable, even when talking to the original founders of NVI. It gave a sample of the great working culture they have in the office.

The spread of Covid-19 has had major consequences for most people, and although it would have been an incredible experience to travel to the US, we are very grateful for the opportunity to have experienced our digital internship. We are happy to have gotten to know and learn from some of the great engineers working at NVI and as soon as either of us are in the DC area they can expect a visit from us.

UGNÉ MINIOTAITE
CODY HESSE

**Efter studier hos oss förstår du både helheten och detaljerna
– du blir både en hett eftertraktad generalist och specialist.**



Bli en duktig problemlösare, sök Teknisk fysik på Chalmers.



GOOGLE

Founded 1998
120 000 employees

LOCATION

New York

WEBSITE

google.com



Programmes at Chalmers University of Technology

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- Computer Systems and Networks
- Data Science
- Embedded Electronic System Design
- High-Performance Computer Systems
- Interaction Design and Technologies
- Software Engineering and Technology

Programmes at University of Gothenburg

- Applied Data Science
- Computer Science
- Game Design & Technology
- Software Engineering and Management

chalmers.se/cse



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UNIVERSITY OF TECHNOLOGY



UNIVERSITY OF GOTHENBURG

The Big Apple vs. Silicon Valley

I was actually lucky enough to land two internships in the US, at two different companies in two different cities. One at Google in New York, and one at Yelp in San Francisco. I got to experience the best of both worlds — the beautiful views of the high-rises of The Big Apple and the vibrant startup culture of Silicon Valley.

Right before Christmas, two highly anticipated emails showed up in my inbox. The emails were from the recruiters I had been in touch with at Google and Yelp, and they both wanted to offer me internships for the upcoming summer. This was of course a dream come true. Not only one, but two large and well-known tech companies wanted me as an intern. Luckily enough Yelp was very flexible and let me move my start date to the fall, and they also let me extend my internship to be 7 months

long. This meant that I could do both internships back to back and get to spend almost a full year in the US. Since I was pretty fed up with studying and was longing for a break, I accepted both offers without hesitation.

Getting to the point of receiving these two offers had not been that easy though. I spent months writing covers letters and sending my resume to companies in the US, often getting rejected without even getting an initial interview. I spent countless hours preparing for coding interviews, I read *Cracking the Coding Interview* from cover to cover and did various coding exercises on sites like LeetCode and HackerRank. In the end, all the hard work paid off, and here I am, having completed 12 intense weeks as an intern at Google's New York office, and being one month into my new internship at Yelp in San Francisco.

Google's New York office is situated smack dab in the middle of Manhattan, in an area called the Meatpacking District. I was lucky enough to find an apartment near Union Square, which was about 10 minutes away from the office on foot. This meant that I could walk to work in the morning, and I never had to experience the extreme heat, humidness, and crowdedness of the New York subway during peak hours.



The Google office had all you could wish for and more. The 16-story building took up an entire city block and was fully equipped with a gym, massage rooms (interns were given 60 minutes worth of massage credits that could be used during the summer), and two game rooms where you could play ping pong, foosball, pool, or just hang out and play video games. There were dozens of micro kitchens -- small kitchens that are fully stocked with energy bars, fruit, chips, coffee, ice tea, soda, coconut water, you name it -- and multiple cafes where breakfast, lunch, and dinner were served every weekday, all for free. I'm almost embarrassed to admit it, but I actually only cooked one single meal at home during the entire summer. All my other meals were eaten either at the office or at one of the many restaurants that Manhattan had to offer.

As for work, my project for the summer was to extend an internal web application used by the legal compliance team with some new features. I got to learn all about Angular 2, TypeScript, and modern Java web development, along with all the incredible internal tools, frameworks, and libraries that Google has developed over the years. While it would have been cooler to work on a public-facing product like YouTube or Google Maps, one nice aspect of my project was that my features were expected to roll out to new users a couple of weeks after I left. This is actually not that common for intern projects at Google, and many projects on larger products never get to see the light of the day.

Google hosts a couple of hundred interns in New York each summer, and I got to meet a lot of interesting people from all over the world. Google really takes good care of their interns, and they have a small team of recruiters whose sole job is to make sure that the interns have things to do when not working. Some events during the summer included dinner parties, trips to baseball games, and one of my summer highlights: a cruise around Manhattan on a three-deck yacht with an open bar. Apart from the intern events, there

were just tons of stuff to do in Manhattan, including visiting rooftop bars, hanging out in Central Park, going to free Today Show concerts in the morning, and walking the High Line -- an elevated former railroad track that has been transformed into a public park that runs for 23 blocks above the Manhattan traffic.

Doing an internship at Google is definitely an experience that I will never forget. I got to spend an entire summer in New York, I learned a ton of stuff about software development, and I also made a lot of new friends. It is hard to describe the feeling I felt when I left New York at the end of the summer. I was sad to leave all my newly made friends, but I was happy for having completed a successful internship and I was looking forward to moving to San Francisco, to move in with my girlfriend and to start my second internship at Yelp.

YELP

Founded 2004
6000 employees

LOCATION

San Francisco

WEBSITE

yelp.com

Having just completed my first month at Yelp, I can definitely say that Google and Yelp are two very different companies. Compared to Google, Yelp still feels a lot like an early-stage startup, even though they have been around for over 10 years and have grown into quite a large corporation. At Yelp I work on the messaging team. We develop a feature on the Yelp platform for allowing users to send messages directly to businesses in order to request quotes for various services. This is a fairly new feature for Yelp, but it has been getting a lot of traction with users and the team is expanding rapidly. Things are moving fast and it is very exciting to be a part of it.

As for New York and San Francisco, they are two very different cities as



well. While New York is the home for a great variety of people, San Francisco is pretty much dominated by the tech industry. Everywhere you go you see offices of tech companies, and just on my way to work, I walk past the offices of companies like GitHub, Stripe, Docker, Cloudflare, TaskRabbit, and LinkedIn. People are riding electric skateboards to work, the cafes are crowded by people hunkering over their laptops, and the billboards show advertisements for companies like Twilio, Salesforce, and Uber. It is a different world for sure, and if you're into tech you'll love it.

Living and working in the US has been a very fun experience so far, and I would highly recommend people to go look for internships here while still in school. If you're like me and can't stand the idea of being in school for 5 years straight, doing an internship abroad is the perfect opportunity to get a well-deserved break from studying and to experience the culture of a new country, all while getting some valuable real-life work experience. What are you waiting for? Go apply now!

MATS HÖGBERG

*Originally published as
"2PAC vs. The Notorious B.I.G." in
CETAC Trainee Report 2017*

MATS HÖGBERG

Born 1993

EDUCATION

BSc. Software Engineering

BEST US MEMORY

Going to a (free!) Ed Sheeran concert at 5 in the morning

A full-page photograph of Stefan Bengtsson, President and CEO of Chalmers University of Technology, walking on a paved path in a park. He is wearing a grey suit jacket over a light blue shirt and dark trousers. The path is lined with trees that have young, yellow-green leaves, suggesting spring. The sun is low in the sky on the left, creating a warm, golden light and long shadows. Other people are visible in the background, walking further down the path.

Stefan Bengtsson

President and CEO at Chalmers University of Technology

At Chalmers our vision, Chalmers for a sustainable future, permeates all our activities. This requires us to be both locally and globally connected and engaged. As a consequence, international networking, collaboration and exchange are key priorities in education, research and innovation.

Chalmers alumni will have their future careers in diverse and internationally

connected companies and organizations. Hence, developing and supporting activities providing Chalmers students with international outlook and experience as an integrated part of their Chalmers education is essential.

CESIP is a student led and organized activity providing Chalmers students with the possibility to gain international and industrial experience through an internship period at a company in the

US or Canada.

The organization committee needs support from companies and other organizations to make the program a continued success. The program is an important factor in providing opportunities for international experience to Chalmers Students and I fully support the Chalmers Engineering Student Internship Program.

STEFAN BENGTSSON

GKN Aerospace is the world's leading technology partner to the aerospace industry, with 17,000 dedicated employees around the world. GKN AeroSpace develops, builds and supplies an extensive range of advanced aerospace systems, components and technologies — for use in aircraft ranging from business jets, helicopters and military aircraft to the most used and the largest passenger planes in the world.

Our technology is on-board 100,000

flights every day, covering all major aircraft and engine growth platforms. Lightweight composites, additive manufacturing technology, innovative engine structures, wiring systems to drive electrification and smart transparencies all help our customers to reduce aircraft weight, fuel burn and emissions enhancing aircraft performance and shaping the aviation industry of the future.

Whether we are designing and engineering new solutions for our

customers or manufacturing and delivering finished products on time and to the highest quality, we succeed because of the skills, knowledge and talent of everyone who works here. Combined with passion and strong international experience, we have the key factors to be successful in our industry. Therefore we proudly support the Chalmers Engineering Student Internship Program

JOAKIM ANDERSSON



Katarina Ageborg
CEO of AstraZeneca

Joakim Andersson
CEO of
GKN Aerospace Engines



AstraZeneca (LSE/STO/NYSE: AZN) is a global, science-led biopharmaceutical company that focuses on the discovery, development and commercialisation of prescription medicines, primarily for the treatment of diseases in three therapy areas - Oncology, Cardiovascular, Renal & Metabolism, and Respiratory & Immunology. AstraZeneca operates in over 100 countries and its innova-

tive medicines are used by millions of patients worldwide. Research is the key to the success of AstraZeneca and in 2019 the company spent 6,1 billion USD on research and development. AstraZeneca has sales in more than 100 countries, manufactures in 18 countries and employ 70 600 people worldwide, of which 9 200 work in R&D.

AstraZeneca aspires to become one of the best and most respected companies in the world. Skilled and enthusiastic

employees with international experience are essential to achieve this and therefore we fully support the Chalmers Engineering Student Internship Program.

Please visit astrazeneca.com and follow the Company on Twitter @AstraZeneca.

KATARINA AGEBORG



Bland gäss och murmeldjur

Min sommar tillbringade jag i Rochester, som ligger i västra delen av staten New York, någon mil från Ontariosjön. Rochester är en ganska stor stad, om man räknar med förorterna, med en miljon invånare. Här finns Kodak och Xerox, en alldeles ny fotbolls- och baseballsplan och här finns även företaget jag arbetade hos under 12 veckor, Astra Arcus USA, Inc.

På Astra Arcus USA, Inc. arbetar 120 personer. Astra Arcus AB i Södertälje tog under våren 1995 över verksamheten från engelska Fison Corporation och gjorde Södertälje och Sverige kända för amerikanarna.

Verksamheten på Astra Arcus USA är inriktad på forskning inom det centrala nervsystemet. Mina arbetsuppgifter bestod av att analysera substanser,

innan de blir läkemedel, med hjälp av olika separationstekniker såsom vätskekromatografi och kapillärelektrofores. De flesta proverna som jag fick var kirala, dvs de finns i två olika former (isomerer) såsom vänster och höger hand. De flesta känner väl till det tråkiga som hände på 60-talet med blivande mammor som tog det lugnande medlet Neurosedyn. De födde barn med missbildade armar eller ben. Att det hände berodde på att man hade använt fel isomer av det aktiva ämnet i läkemedlet.

Oftast syntetiserades en av isomererna och jag skulle kontrollera att inte för mycket av den andra formen fanns med. Det fanns inga skrivna metoder att följa utan jag fick titta i gamla laborationsjournaler eller leta i litteraturen. Ibland kunde man få fram resultat på

några timmar, ibland kunde det ta flera veckor. Till handledare hade jag Bruce Shepardson. Av honom lärde jag mig mycket om kapillärelektrofores, som jag aldrig arbetat med innan. En mycket intressant teknik, som bygger på att molekyler har olika laddningar och man därigenom kan separera dem.

Efter tre veckors upplärning åkte Bruce på välbehövlig semester i drygt tre veckor till Skottland, där hans familj kom ifrån. Nog kände jag mig lite nervös i början av Bruces semester. Nu skulle jag vara ensam och ta hand om proverna från de organiska kemisterna, hitta bra metoder att analysera dem med. Många prover kom givetvis in under denna tid, men de flesta kunde jag analysera utan problem. Några sparade jag tills Bruce kom tillbaka.

Många på avdelningen spelade golf,

så en dag hade vi en golfturnering. Vi delades in i grupper om fyra. Jag hade aldrig spelat golf innan, så min lagkapten tog mig till en driving range för att visa mig hur man slår. Vi kallade vårt lag för Ingen Chans på svenska, eftersom vi inte trodde att vi skulle ha någon chans i turneringen. Fastän vi var en man mindre på turneringen gick det riktigt bra för oss. Det slutade med att vi vann.

Jag bodde hos Adrienne Smith, som har en tvårumslägenhet fem minuter från arbetet. Adrienne arbetade också på Astra Arcus USA. Hon var fullt sysselsatt med att ta sina sista kurser på kvällstid under sommaren för att få en MBA-examen. Ändå hade hon tid för mig. Vi gick på bio, konserter, shoppade, besökte Washington DC och gick på hennes kusins bröllop i Pittsburgh i Pennsylvania.

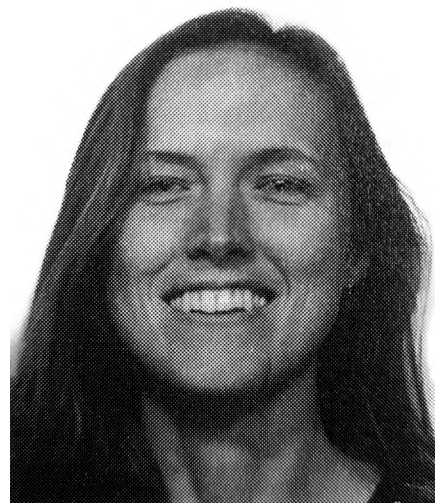
Adrienne ringde mig några gånger under våren från sitt arbete för att vi skulle lära känna varandra. En gång lät hon riktigt allvarlig. Hon hade en viktig fråga. Hon undrade om jag tyckte om ishockey. Adrienne hade nämligen ordnat biljetter till NHL-slutspel, om det gick bra för hennes favoritlag Pittsburgh Penguins. De skulle möta Peter

Forsbergs Colorado Avalanche. Tyvärr blev de utslagna i semifinalen mot Florida Panthers. Lite ishockey fick vi se i alla fall. Rochesters eget ishockeylag vann nämligen AHL, motsvarande vår allsvenska.

Helgerna tillbringade jag mest med min pojkvän Henrik, som arbetade i Ohio. Han kunde låna en bil från sitt företag. Med den åkte vi runt i Ohio, New York och Kanada. Vi tog även en vecka ledigt då vi campade i en stor nationalpark, Adirondack Park, som ligger i nordöstra New York. Det var skönt att få se lite vildmark när man mestadels befinner sig i en stad, fast myggen hade jag gärna sluppit. Många myggmedel gjorde vi slut på.

En veckas segling i Brittiska Jungfruöarna hann jag också med tillsammans med 18 andra chalmester från kommittén. I år hade vi tur med vädret. Ingen orkan dök upp som det hade gjort för förra årets kommitté när de seglade i Bahamas.

Avslutningsvis vill jag tacka alla som gjort den här USA-vistelsen möjlig. Det är en mycket nyttig erfarenhet att få arbeta och bo i ett annat land, samtidigt som man förbättrar sina språkkunskaper. Jag vill också tacka alla på Astra



MELINA VAN MEER

EDUCATION

Chemical Engineering

Arcus USA för en mycket trevlig sommar. Jag blev verkligen väl omhändertagen, arbetet var mycket intressant och gav mig idéer om vad jag vill arbeta med i framtiden. Till USA-97 önskar jag lycka till och kämpa på. Det är värt allt arbete!

MELINA VAN MEER

*First published in
USA-96 Summer Trainee Program*

USA-96 Summer Trainee Program





No more corn left to see

Som skåning i Göteborg får man ofta höra att Skåne är platt som en pannkaka. Det enda jag kan säga är, de har aldrig varit i Iowa...

Att komma till lantliga och lugna Iowa efter några hektiska och stökiga dagar i New York innebar en viss omställning för kroppen: bondgårdar och ändliga stora majsält istället för skysrapor och enorma folkmassor!!

På flygplatsen blev jag hämtad av Sue som jobbar på Iowa Waste Reduction Center (IWRC) och som jag skulle komma att tillbringa mycket tid tillsammans med under mina åtta veckor i Cedar Falls. Vi fann varandra direkt, vet inte om det kan ha något att göra med att hon redan första kvällen visade prov på sina roliga infall och tog mig med till ett kasino. Tillsammans skrattade vi åt pensionärerna som stal varandras enarmade banditer eller försökte spela

på två maskiner samtidigt!

Cedar Falls är en ganska liten (inte ett höghus så långt ögat når) och trygg stad, där mycket kretsar kring universitetet, University of Northern Iowa. Mitt hem för sommaren, ett mycket nytt och fräscht studenthem, låg på campus. Jag fick ett eget rum men delade kök med åtta andra tjejer. Det var intressant att få inblick i det amerikanska studentlivet både då det gäller studier och nöjen. En hel del bus hanns med...

Iowa Waste Reduction Center är ett ungt (grundades 1988) och litet företag med ungefär 20 anställda. Förutom dessa finns där många studenter som, liksom jag, gör sin praktik. Dock var jag nog den mest exotiska...

IWRC sysslar med att hjälpa företag, som har mindre än 100 anställda, att minska utsläpp och avfall, undervisa

om miljövänliga alternativ, tolka miljölagar och regler etc. De hjälper även andra stater att starta upp en liknande verksamhet. Ofta gör en eller flera av IWRC:s experter besök på företaget och tittar på processer, avfallshantering, emissionspunkter och andra intressanta ställen i fabriken. Därefter skrivs en rapport som beskriver vad företaget gör och vad det borde göra, vilka regler och lagar som gäller samt diverser beräkningar som utförs för att se hur mycket emissioner som släpps ut. Om det behövs tillstånd för att släppa ut dessa, hjälper IWRC till att skriva ansökningar.

Det speciella med Iowa Waste Reduction Center, och som många amerikaner har svårt att tro, är att hjälpen är både gratis och konfidentiell. Verksamheten finansieras huvudsakligen genom statliga medel.

Mina arbetsuppgifter var inom Iowa Air Emissions Assistance Program (IAEAP) och innebar bland annat besök på företag inom så skilda brancher som cementföretag, kretskortstillverkare och kryddindustrier. Den gemensamma nämnaren är att de alla släpper ut mer eller mindre stora emissioner till luften. Den största delen av mitt arbete utfördes vid datorn. Rapporter skulle skrivas, verkliga och potentiella emissioner beräknas och nya emissionsfaktorer hittas på internet. Department of Natural Resources (DNR) hade precis gett ut ett antal nya lagar som klargjorde att även spannmålsföretag behöver tillstånd för utsläpp och diverse nya och gamla konstruktioner. Då dessa företag var ganska många (över 1200 stycken) hann vi ej göra personliga besök, utan de fick istället besvara ett frågeformulär. Det visade sig ganska snabbt att de nya lagarna inte var speciellt övertänkta från DNR:s sida sett, många företag skulle nämligen behöva mer än hundra olika tillstånd...

Allt var inte arbete, utan där fanns även något som hette fritid! Tillsammans med grannar och jobbkompisar spenderades den på bland annat kanotturer, bröllop, färde julifirande hos en grannes

familj, barbesök, rollerblade-åkning och en hel del bilturer i båda Iowa och staterna runtomkring.

Med risk för att låta lite klichéartad får jag nog ändå säga att veckorna i Cedar Falls bara rusade iväg. Helt plötsligt var det dags att säga hej då till alla trevliga människor man träffat och dra vidare till nya spännande platser!

Först på den fyra veckor långa semesterlistan stod en veckas segling vid Jungruöarna tillsammans med arton andra från föreningen — en enorm upplevelse för landkrabban Sofie, som aldrig seglat förut och som än mindre förstod märkliga uttryck som skota hem och häng ut fendrarna!

Veckan därpå tillbringade jag och min pojkvän hos en kompis i Florida. Behöver jag säga mer än solnedgång i Key West, alligatorer i Everglades och mangofrukter i träden?

Sista anhalten var Arizona och Kalifornien där vi bilade runt i två veckor. Lika säkert som att Grand Canyon är den mäktigaste platsen på jorden, är Las Vegas den glittrigaste! Stora upplevelser båda två, men på aningen olika sätt...



SOFIE HOLGERSSON

EDUCATION

Chemical Engineering

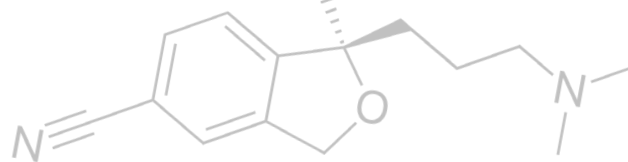
Till sist vill jag tacka alla som hjälpt till att göra denna underbara resa möjlig. Utan att tveka en sekund kan jag säga att det varit den bästa och mest lärorika sommaren i mitt liv — TACK!!!

SOFIE HOLGERSSON

*First published in
USA-96 Summer Trainee Program*

American-Scandinavian Foundation





Intervju med Ulla Nyman på IKEM

Vilka är ni på IKEM?

Vi är en bransch- och arbetsgivarorganisation som samlar över 1400 företag och 70 000 anställda som är verksamma inom exempelvis life science, kemi, plast och raffinaderi.

Varför ska man jobba i kemiindustrin?

I kemiindustrin är du med och gör världen bättre och mer hållbar, men det finns också många andra anledningar till att jobba inom kemiindustrin. Vi har tagit fram sidan Kemikarriär och vill med det låta dig inspireras att välja en utbildning och karriär där dina intressen och talanger kan få blomma ut. Där kan du ta del av flera olika personers berättelser om sitt arbete, allt ifrån processoperatörer och säljare till produktutvecklare och forskare. Kolla in Kemikarriär och få reda på lite mer om vad människorna inom kemiindustrin arbetar med, och varför de trivs med sina jobb.

Hur ser kemiindustrin ut i Sverige?

I Sverige sysselsätter kemiindustrin ungefär 70 000 personer, vilket kan jämföras med cirka 80 000 i fordonsindustrin och cirka 40 000 i skogsindustrin.

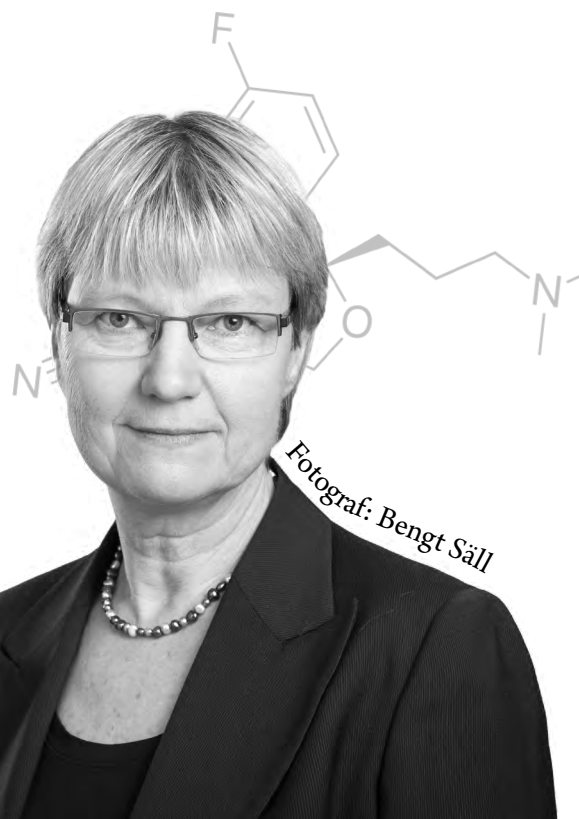
Av de kemikalier, plaster, läkemedel och bränslen som produceras av kemiindustrin går det mesta på export till utlandet. Kemiindustrin utgör ungefär 20 procent av Sveriges varuexport. Det kan jämföras med fordonsindustrins 12 procent, metallindustrins 10 procent och skogsindustrins 2 procent.

Den stora andel av varuexporten som kemiindustrin står för gör den viktig för svensk ekonomi, men kemiindustrin spelar också en central roll för annan svensk tillverkningsindustri. Genom satsningar på forskning och utveckling ligger den i framkant när det gäller nya innovativa material som gör att annan industri kan utveckla nya smarta produkter för konsumenter och företag.

Hur kan kemikunskaper och kemiteknik bidra till utvecklingen av ett mer hållbart samhälle?

Genom att ta fram nya läkemedel, effektivare vattenrening, lättviktsmaterial som gör fordon mer bränslesnåla, biobaserade bränslen och material till solceller och vindkraftverk bidrar kemikunskaper och kemiteknik till utvecklingen av ett mer hållbart samhälle. Listan kan göras lång.

Just nu är framförallt cirkulära lösningar i fokus. Det vill säga hur industrin kan konstruera produkter och material så att de blir lätta att återvinna, eller metoder för att återvinna både material och koldioxid. Exempel på nya cirkulära tekniker är koldioxidavskiljning, vilket innebär att koldioxiden antingen lagras i berggrunden eller används i nya produkter, samt kemisk återvinning av plast.



Gör karriär av ditt kemiintresse!



Amir Hamzavi
UNIVAR SOLUTIONS

– Det är väldigt ofta kunder frågar efter grönare kemi och vi vill ju alltid och vara i framkant vi har en hel avdelning som är väldigt duktiga som jobbar med det här.

Amir Hamzavi, säljare på Univar Solutions i Göteborg.

– Jag brinner för hållbarhet. En så enkel sak som att inte värma upp våra hus och sen så läcker värmen ut, när vi faktiskt har ett material som kan inkorporeras i en färg eller i en väggisolering.

Sara Wengström, kontoansvarig på Svenska Aerogel i Gävle.



Sara Wengström
SVENSKA AEROGEL

– För att skapa framtidens material så tänker jag att mycket handlar om miljömedvetenhet, till exempel att skapa material som är väldigt lätta men ändå väldigt hårda.

Hans Paajanen, projektledare på Flintgroup i Trelleborg.



Hans Paajanen
FLINTGROUP



Kemikarriär

kemikarriar.se

Serving Canada's Tire Repair Shops From Coast to Coast

Selling tire and wheel service supplies all across the second largest country in the world is no small task. Neither is managing a product catalog of over twelve thousand items. At the shoreline of Lake Ontario, we were made part of this challenge and given the opportunity to test ourselves.

After a long trip across the Atlantic, we finally arrived in New York. We were excited about the week we had planned out and started by getting out of bed early every day to check out as many tourist attractions as possible. But as the week went on and our legs grew more and more tired from all the walking, our focus shifted slightly from tourist attractions to exploring the nightlife. That was probably the best decision of the week and we ended up having a blast.

After that amazing week, we took another flight to Toronto and got picked up by Erik, the previous intern from USA SIP. He had stayed for two years now and Prema Canada had broadened his responsibilities significantly compared to when he first arrived at the company. This felt good to keep in mind, that we were going to work for an organization that takes their interns seriously

and challenges them with the responsibilities that are necessary to develop. After Erik picked us up at the airport we had some chicken wings and later drove to the apartment.

To get to know the company we were going to work for from the roots we started out working in the warehouse. We picked items for orders that came in during the days and familiarized ourselves with the products and the layout of the warehouse. We were surprised that, despite the vast amount of items located in the warehouse, the employees could identify items and their locations just by seeing the product number.

Later on, we were introduced to the main project that we will be working on for the duration of our internship. A few years back Prema replaced their accounting system but it was not sufficient to meet all their needs so they continued using an older system that handled the product information. Because of this, redundant information is stored and a lot of extra work goes to keeping both the product database and the accounting system synced. Our part here is to try and find a way to bring the accounting system and a new IT-system together in the hopes

of eliminating the time and energy wasted on keeping two incompatible systems updated.

Another thing that surprised us was how nice everybody was, not just at the office but Canadians generally. At one time I, Niklas, was out and walked by a car that was standing at a crossing trying to squeeze out in the busy traffic. As I passed in front of it I heard someone shouting from inside the car and a door opening. Hesitantly I looked back, afraid of an angry Canadian, and saw a guy sticking out his head screaming "I said I'm sorry!". That's Canada for you.

Prema Canada is one of the largest tire and wheel service suppliers in Canada and continues to grow. Prema's independent distributors buy their

PREMA CANADA

Founded 1954
30 employees

LOCATION

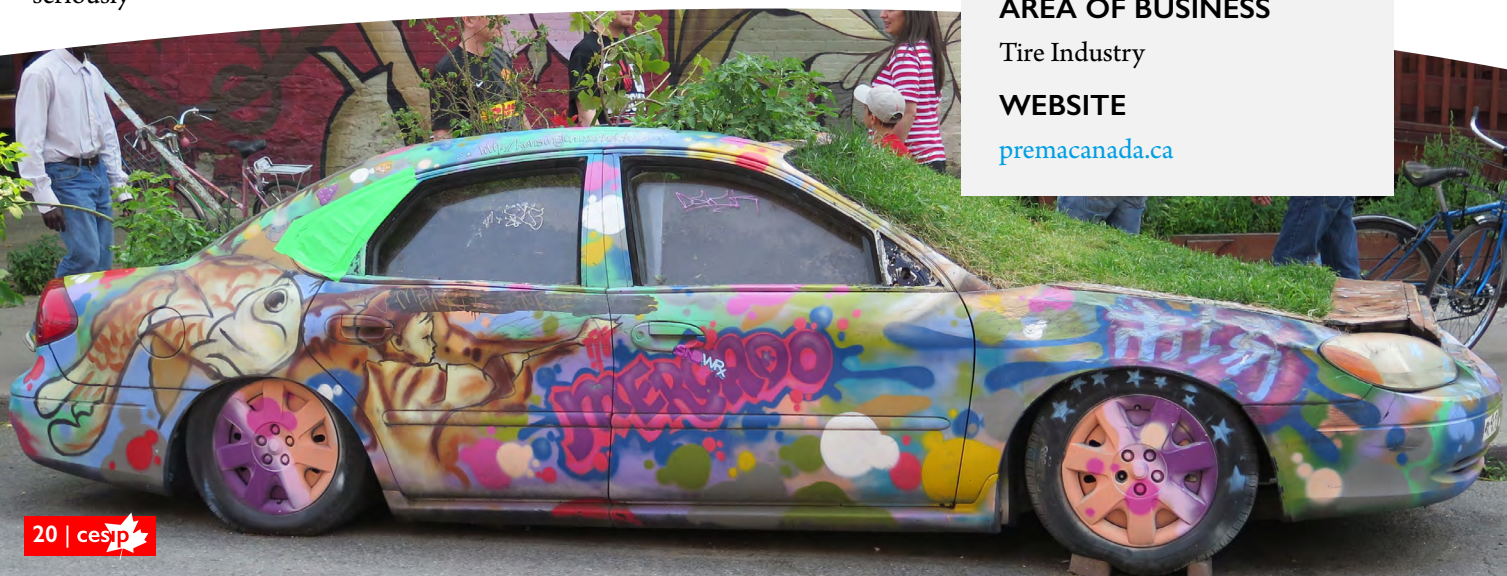
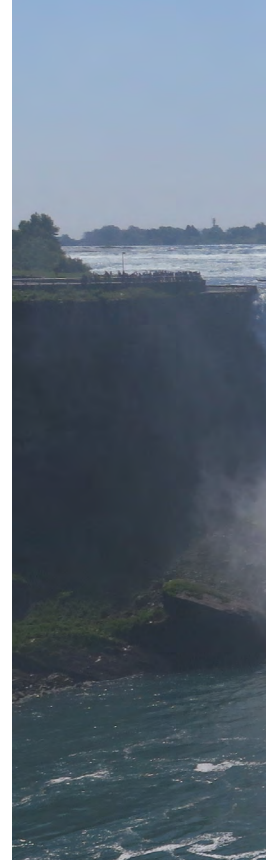
Burlington

AREA OF BUSINESS

Tire Industry

WEBSITE

premacanada.ca





NIKLAS RICHARDSSON

Born 1993 on Tjörn, Sweden

EDUCATION

B.Sc. Industrial Engineering and
Management

FUTURE PLANS

Finish my internship and then
continue with my studies.

BEST US MEMORY

Seeing The Rolling Stones in
Buffalo.

WORST MEMORY

Realizing that Brooklyn
Lager is nowhere to be
found.

inventory from the warehouse located
at the head office in Burlington and
later sell it to their customers all over
Canada. The former head office burned
down a few years ago but Prema made
a remarkable recovery and quickly got
back in business.

We would like to thank all involved in
making this internship possible and
all the people we have met during our

time here. An extra large thanks goes
out to our coworkers at Prema Canada
that have been so friendly and welcom-
ing towards us which made our days
much more enjoyable.

NIKLAS RICHARDSSON
GUSTAF SWEDBERG

*First published in
USA-SIP Internship Report 2015*

GUSTAV SWEDBERG

Born 1991 in Uppsala, Sweden

EDUCATION

B.Sc. Industrial Engineering and
Management

FUTURE PLANS

Finish my internship and then
continue with my studies.

BEST US MEMORY

Finding Kensington, the jewel of
Toronto!

WORST MEMORY

Being unable to sleep because of
the heat (yes, still talking about
Canada).



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Lake Tahoe, where paradise is engineered

Located at a high altitude on the state line where northern California meets Nevada is the city of South Lake Tahoe, a place where the activities never seem to run dry. A day in Tahoe during summer is best spent mountain biking in the mountains surrounding the lake, or with lake activities such as stand-up paddleboarding, jet skiing, or kayaking. In winter however, the mountain is the real playground with some of the United States' most famous ski resorts, including Squaw Valley, home of the 1960 winter Olympics.

Much of my time here has revolved around water so far, but not only because of Lake Tahoe, water is also the area of expertise at Avalex Inc., the company I am interning at. Avalex was founded 27 years ago by its current vice president, civil engineer Craig Morgan and is today operated by him and

Michaela Morgan, a civil engineer from Chalmers University of Technology. Since drought is a common and important issue in California, expert knowledge in issues regarding water is highly demanded. Avalex offers their services and knowledge mainly to the surrounding counties in northern California but also to the southern part of California and Nevada. Projects are typically related to any concern regarding water, such as landfill engineering and design, water quality monitoring, water rights, and engineering, erosion control and design, and AutoCAD design and drafting.

During my time at Avalex I have experienced all of the tasks mentioned above. Work at the office, situated at 6,000 feet just at the foot of the big mountains, has consisted of writing reports for various counties, drafting in AutoCAD, and doing research for different water rights lawsuits. This

has been complemented by more “hands-on” engineering and project management tasks at a landfill closure project in northern California. The state of California has implemented tough environmental regulations and requires both regular reports regarding water quality at their landfills and thorough closing construction proce-

AVALEX INC.

Founded 1991
4 employees

LOCATION

South Lake Tahoe

AREA OF BUSINESS

Civil engineering and
environmental services

WEBSITE

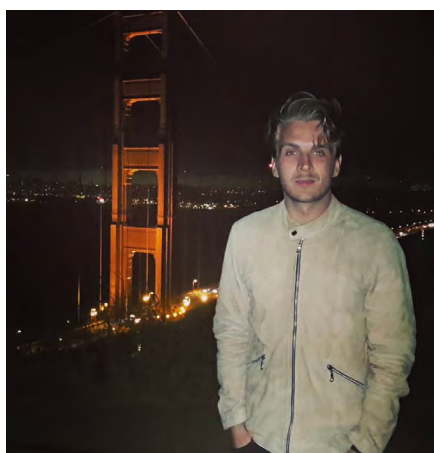
avaxel.info

dures. Avalex is working as a consultant agency and is responsible for making sure that the requirements are met. While digging deeper into the different projects performed by Avalex, I realized how the American legal system had a huge impact on our projects. It was very interesting to get an insight into how fights over water occur and are managed in the US. I am truly grateful that my supervisor Craig Morgan took the time to explain the history behind the different projects we were working on. Little did I know before about how politics, laws, and money affects who gets to exploit the water resources in western USA.

As previously mentioned, Lake Tahoe is known for its outdoor activities and is often called “America’s playground”, a nickname I can easily vouch for. I was lucky to find housing with two American roommates, Josh and Justin, who not only showed me around but also introduced me to all the activities that Lake Tahoe is all about. During the summer I have experienced jet skiing and boating the lake, climbing,

running, mountain biking, and much more. In the unlikely event that you do get bored in Lake Tahoe, the fact that Avalex provides each intern with a car makes exploring the US so much easier. So far I have visited San Francisco Bay Area multiple times, Sacramento, Reno, Carson City, and finally a weekend in Las Vegas with most of AMCIP 2018. Right now I am looking forward to the next holiday, when a roadtrip down the coastline to San Diego is planned.

To sum everything up, I want to extend my gratitude to my supervisors Craig and Michaela Morgan for offering me



the internship at Avalex. My time at Avalex has been a great experience and I have learned a lot, not only about engineering but also about the American culture and social life. Thank You!

JOHANNES HENRIKSSON

*First published in
AMCIP Internship Report 2018*

JOHANNES HENRIKSSON

Born 1994

EDUCATION

B.Sc. Civil Engineering

FUTURE PLANS

Continue to my internship at Avalex until December.

BEST US MEMORY

Las Vegas with part of the AMCIP crew.

WORST MEMORY

Getting a flat tire in San Francisco.



MICRO SKIMMERS · MINI SKIMMERS · TDS SKIMMERS · TDS PUMPS
HYD. POWERPACKS · HOSE PACKAGES · OIL BOOMS

A photograph showing a yellow Foilex oil skimmer and pump system floating on water. The skimmer has a long metal arm with a pump at the end, and a yellow buoy with the Foilex logo is attached.

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The logo for Foilex Oil Skimmers & Pumps, featuring the word "FOiLEX" in a bold, sans-serif font, with "OIL SKIMMERS & PUMPS" in a smaller font below it. The "i" in "FOiLEX" is stylized with a yellow circle around it.

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A Summer in the Golden State

“San Francisco is a city where people are never more abroad than when they are at home.”
– Benjamin F. Taylor. The diversity of the city really gives this quote justification. Just like us, people here come from all corners of the world. We felt like at home from day one.

We arrived to a rainy San Francisco. As it turns out, that may be the only

rain falling this summer. The lack of rainfall during recent times has brought California into the worst drought in decades. Even though the water supply is limited, it is wonderful to wake up with a sunny sky every day.

Before departing to work in the heart of Silicon Valley, we eat breakfast in the sun overlooking the fogbank that greets and sweeps over San Francisco in the early morning. The geographical features of the San Francisco Bay Area make the weather diverse depending on where you are. Dressing appropriately can be difficult and bringing a sweatshirt along is usually a good idea especially if considering going downtown.

Our weekdays are spent in the premises of DNA 2.0. The office is just a few blocks from the corporate headquarters of Facebook. Here, the theory from our textbooks became reality. Within the walls of this office and factory we take our theory and knowledge and actually produce DNA.

The production starts with synthesizing short DNA fragments, which are later put together to form a complete gene inserted in a vector of choice. The genes undergo a diligent quality process before being shipped to the customers. Sequencing of the gene insures the gene shipped correctly

fills the order and meets the customer expectation. Our customers range from large and small pharmaceutical companies to small independent research groups. The common thread between all customers is their need for a specific gene, delivered when and as expected. Errors in production, review, or delivery are simply not acceptable. To stay in the forefront above other the biotech companies in Silicon Valley, DNA 2.0 is not only committed to error free customer satisfaction, but also constantly reinvests in research and development.

LINNEA JOHANSSON

Born 1991 in Uppsala, Sweden

EDUCATION

B.Sc. Bioengineering

FUTURE PLANS

Continue my studies at Chalmers University of Technology.

BEST US MEMORY

To experience the biggest of all pride parades in the world.

WORST MEMORY

All the stop signs intervening the traffic.



MARCUS HANAEUS

Born 1992 in Gothenburg, Sweden

EDUCATION

B.Sc. Bioengineering

FUTURE PLANS

Continue my studies at Chalmers University of Technology.

BEST US MEMORY

All days spent at various beaches, swimming in the invigorating Pacific Ocean.

WORST MEMORY

Driving on the highway, where turn signals seize to exist.

Development and optimization of vectors and proteins are important to keep customers satisfied to beat competition from other biotech companies in the valley. During the weekends we explore the beautiful coastline of California along US-1. The outdoor life has much to offer in this part of the country. Besides the coastline, there are several

national parks to explore and cities to visit. There are mountains, interior large lakes, desserts, and forests all within an easy drive.

Spending time in downtown San Francisco is very easily done. Although the downtown area is not large, there is a significant amount of diversity within its various areas or districts. The Mission district is where lots of people working in Silicon Valley live. This district offers lots of nice restaurants, cool bars and night-life. The Castro district is a place for open-minded people. At nighttime all the bars and clubs give rise to a unique breathtaking atmosphere. If one would like to experience the true San Francisco, Haight-Ashbury is the go-to place. This area of San Francisco became famous during the 1960's and was the cultural center of the "Free Love/Hippie" culture that the youth of that time adopted. Across the Golden Gate Bridge, the picturesque town of Sausalito sits above the bay. The ferry connects this area to downtown, passing by the famous prison island Alcatraz. This is just another example of the ease of exploration of the area.

DNA 2.0

Founded 2003
70 employees

LOCATION

San Francisco

AREA OF BUSINESS

Gene synthesis and bioengineering solutions

WEBSITE

dna20.com

The summer spent together with our colleagues at DNA 2.0 gave us invaluable knowledge and experience in our field of studies, biotechnology. We felt at home in the family-like atmosphere, and no questions were left unanswered. We are very grateful for this opportunity and for this experience, giving us a glimpse of what our future could be, in The Golden State.

LINNEA JOHANSSON

MARCUS HANAEUS

*First published in
USA-SIP Internship Report 2015*





Rugged product design in North Carolina

Uncertain of how our nearest future would turn out, we landed in North Carolina. Starting over in a new country without a car, accommodations or friends can be a great challenge. However, it soon became clear that the southern part of the US was a great place to do so.

Thanks to the flexibility of American ways, things worked out very smoothly. After getting our apartment lease settled it took us only three hours, after arriving at the Dept. of Motor Vehicles, to get our driver's licenses. Another couple of hours later, we'd bought a car. And as "Southern hospitality" proved to be more than just an expression, it didn't take long to find people to hang out with either.

Montie Design is a small product development firm doing both mechanical engineering and industrial design, making it a perfect fit for Industrial Design Engineering students. The company has only two full-time employees and a couple of part-timers. But despite the size, they have a wide range of product categories in their portfolio. They mainly do consulting and bring in projects from established companies as well

as start-ups. For the majority of our internship, however, the job was to develop new products for the company's own product line, mainly consisting of camping, shooting, and outdoor gear.

From the very start, we were allowed to run our own projects. For us that meant going through the entire product development process, all the way from idea generation to market ready prototypes. As the internship proceeded, we also took part in the design process for several client projects. Examples of our everyday tasks would be user studies, sketching, CAD-modelling, drafting, testing prototypes, communicating with vendors, and ordering parts. We were also given the opportunity to visit many of our vendors to learn about their manufacturing processes and also see some of our own prototypes being produced.

By the time we're done we are going to have several market-ready products to put in our portfolios. Slingshotting gear, high tech cameras, and yoga equipment are a few examples of products we have worked with this summer that should be available for purchase in the near future.

Even though we gladly spent some late

nights prototyping at the office, we also had plenty of time for other things. We made several visits to cities in other states, but also enjoyed the pleasures of North Carolina. Spending the evenings downtown with the friendly residents of Raleigh quickly became one of our favorite spare-time occupations. But we also went outside the city to enjoy the

RICHARD BODÉN

Born 1988 in Stockholm, Sweden

EDUCATION

B.Sc.

FUTURE PLANS

Road trip through the US and then begin my master's studies

BEST MEMORY

Having "Burgushi" at the Cowfish restaurant for my birthday.

WORST MEMORY

Finding a broken rear light on the car one minute before the driving test.



less urban areas of the state. The entire coast is covered with sandy beaches, and they offered a much-needed break from the southern heat. Another way to cool off was a much enjoyable camping trip to the Blue Ridge Mountains in the western part of the state, where the word “countryside” found it’s true meaning.

Although the hospitality was the same no matter where we went, political opinions varied widely. This led to many interesting discussions in matters such as gun control, government influence, and overseas conflicts. Even though we didn’t always agree, it gave us lots of new perspectives, food for

thought, and valuable insight into the American mindset and culture, which we are very glad to have gained.

Finally, we would like to give a special thanks to Montie Roland for receiving us, and tutoring us through what has been an incredibly rewarding internship. We would also like to thank the rest of the guys at Montie Design, the members of USA-SIP 2013, and all of our new American friends for a fantastic and unforgettable summer.

RICHARD BODÉN
ROBIN EVALDSSON

*First published in
USA-SIP Internship Report 2013*

MONTIE DESIGN

Founded 2006
4 employees

LOCATION

Morrisville, North Carolina

AREA OF BUSINESS

Product development

WEBSITE

montie.com

ROBIN EVALDSSON

Born 1989 in Ale, Sweden

EDUCATION

B.Sc. Industrial Design
Engineering

FUTURE PLANS

Road trip and then preparing for studies abroad

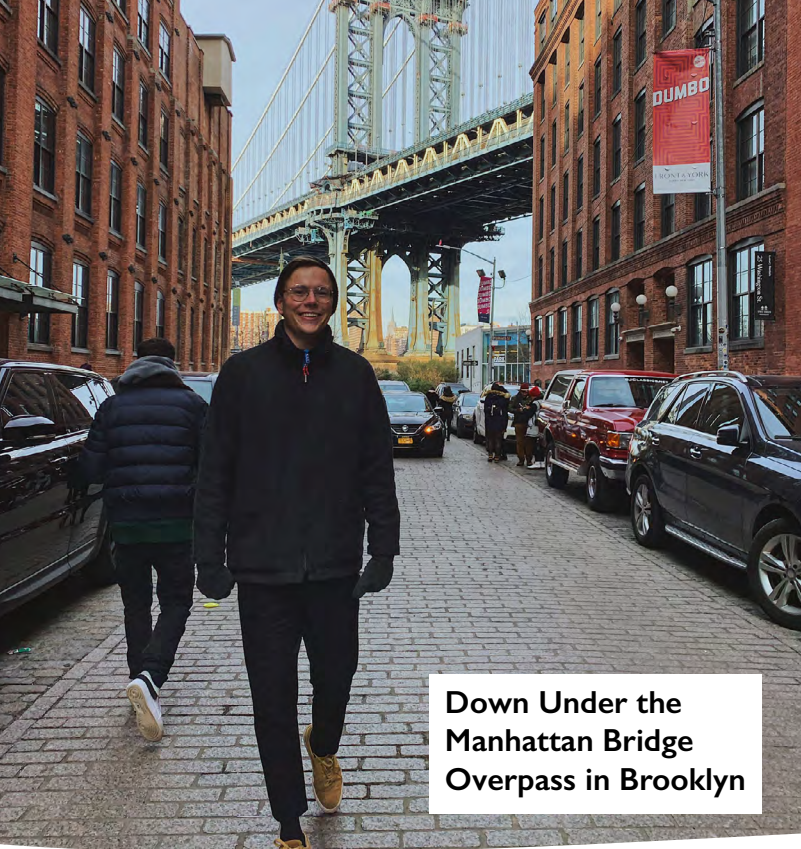
BEST MEMORY

Driving across the Florida Keys.

WORST MEMORY

Ordering the “medium” Coke at the cinema.





Down Under the Manhattan Bridge Overpass in Brooklyn



OSKAR OLSSON

Born 1996

EDUCATION

B.Sc. Civil Engineering

FUTURE PLANS

Enjoy my year in California in all ways possible before starting my M.Sc. in Structural Engineering, which I also hope will be abroad.

BEST MEMORY

When the whole office were invited to a pool party up in Sonoma (really fancy).

WORST MEMORY

When I got home a late Sunday night and my roommates had brought home some random Australians who were doing all kind of crazy stuff in our apartment.

that there is always something to do, you never get bored.

But if you in some way do manage to get bored of San Francisco, there is always an adventure near the city. Which brings me to my second goal, to explore the US and experience the American culture. Living in the wonderful state of California there are a lot of places to visit. Santa Cruz, Yosemite, Muir Woods, wine tasting in Sonoma, Sacramento are all good places for a

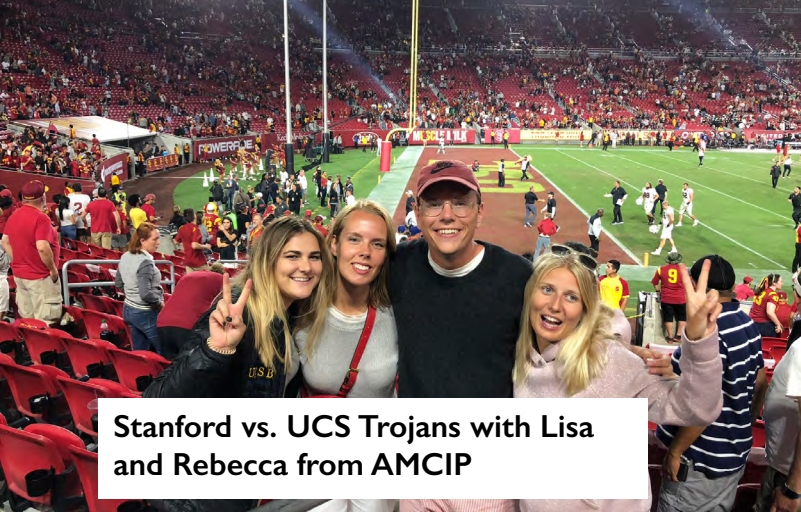
West Coast, best coast! Living my best life in San Francisco

When I was 13 years old I cried when I hugged my sister goodbye at the airport. I was happy for her, envious of her and I knew I would miss her a lot when she was gone. She was going to the magical country USA and would spend a year on the East Coast in the wonderful city of Boston as an Au Pair. Ten years later I am the one saying goodbye as I am leaving to live in the US for a year. And in order to not be a total copycat, I ended up on the West Coast in the most magical, loving, and vibrant city that will always have a special place in my heart, San Francisco.

When I arrived at the San Francisco airport I had some anxiety. This was the first time I was completely alone, in a completely new city and a somewhat completely new country. I was excited, scared, and nervous about how I would manage all of this loneliness.

I was not even alone in my mother's womb for crying out loud, thanks to my wonderful twin. But it did not take long until I had set up different friend dates, real dates, and other various activities for my extroverted heart to calm down. During my first weeks here in San Francisco I met a lot of new interesting people, explored a lot of the awesome places in the Bay Area, and rather quickly I had gained friends that I enjoy spending time with. Why was I worried in the first place!?

With my year in the US, I mainly have three goals. The first goal is to treat myself more and do stuff that I did not have time or money to do as a student in Sweden. I have, together with my newly found friends, explored various museums, gone on hour-long hikes, watched dance shows, movie Tuesdays at the cinema, shopping sprees, various trips... The list goes on and on. One of the best things about San Francisco is



Stanford vs. UCS Trojans with Lisa and Rebecca from AMCIP



Yosemite

a weekend trip there are places like LA, Seattle, and San Diego not far away. I am also planning to visit the East Coast during my year here for holiday.

My third and last goal was to gain experience working as a Civil Engineer, and that is something that I am doing at a company called Monte Stotts & Associates. It is a small and familiar company that you quickly get the feeling of belonging to, thanks to the most amazing people working there and the very spoiled dog that usually hangs around in the office.

consulting but has its main focus on seismic engineering, retrofitting, and strengthening of both new and existing buildings. A typical workday consists of working with drawings in AutoCAD, calculating lateral loads, or helping my boss stay organized through answering calls and checking emails. But my favorite thing to do at work is to go on site visits! These site visits can be everything from checking rebars at an existing project, taking measurements, or joining my boss during a consultation that could be about literally anything.

for always being a champ at work and an amazing friend. I would also like to thank my boss Monte for his amazing guidance, for being a perfect example on how to act as a boss and engineer and for his impeccable humor. I sincerely hope our paths cross before I hand him the keys for his new apartment in Gamla Stan, keys to his Saab convertible, and a Nokia phone.

OSKAR OLSSON

*First published in
AMCIP Internship Report 2019*

MONTE STOTT & ASSOCIATES, INC.

5 employees

LOCATION

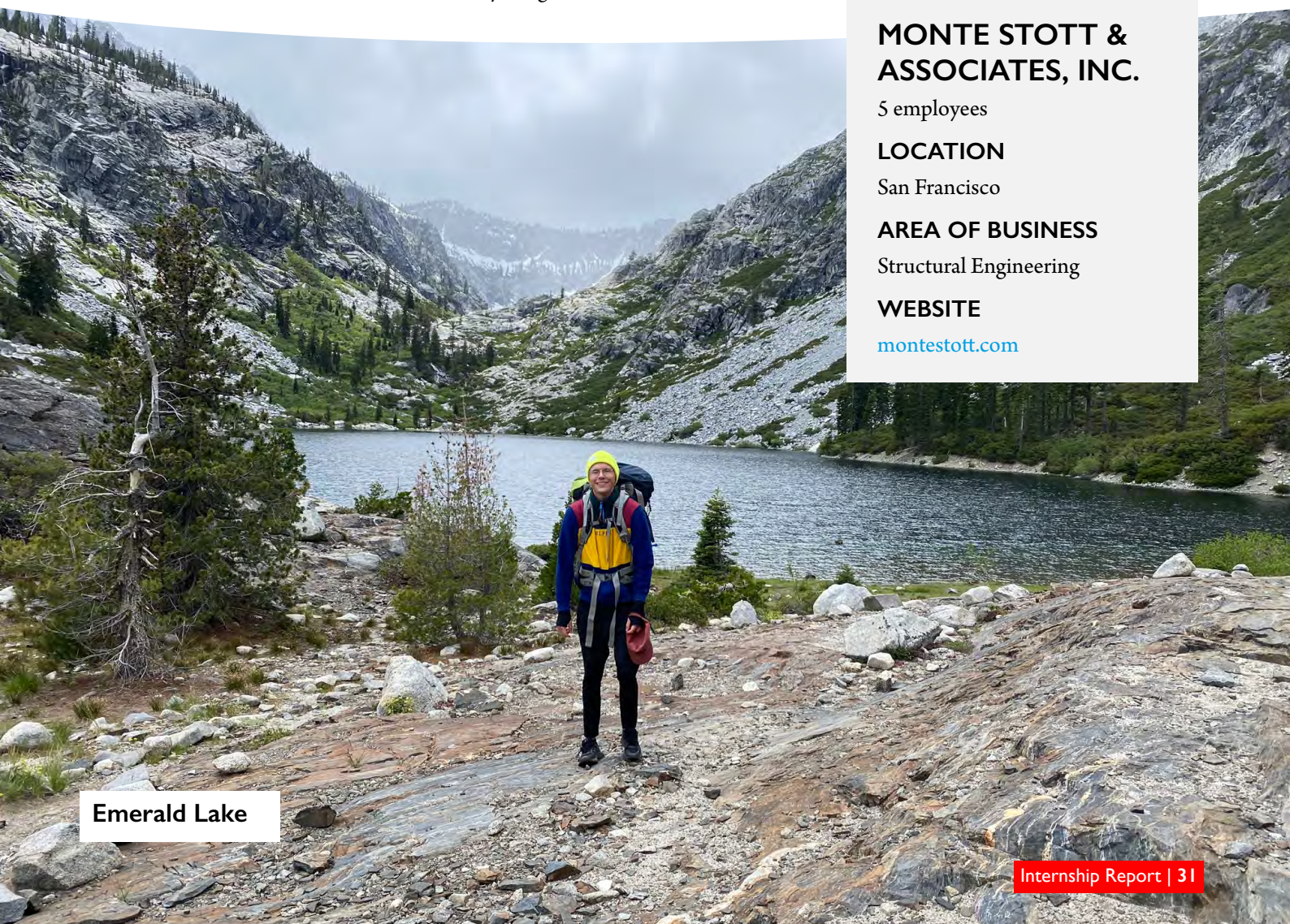
San Francisco

AREA OF BUSINESS

Structural Engineering

WEBSITE

montestott.com



Emerald Lake

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MECHANICAL ENGINEERING

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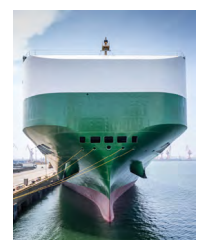
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WWW.HAVD-GROUP.SE



LOTTA BERGBOM

Born 1992

EDUCATION

B.Sc. Engineering Physics

BEST US MEMORY

Biking down the hills to Muir Woods.

Sunny days in Sunnyvale

For me, studying engineering physics at Chalmers was supposed to be a five year long session without interruptions. But when getting the opportunity to leave school for a one year internship in the United States it was too tempting to miss out on. Being able to test my abilities that I have learned in school while exploring the sunny coast in California could not be a better combination.

After spending a year with preparation for my year in the United States it was really exciting when the due date finally arrived. After packing up the apartment in Gothenburg there was not much room for relaxing after the exams before the flight to California took off. Traveling along with the time change it became a really long day but since I could stay with some other Swedes at first, there was nothing to worry about.

My internship is at a company called Rapiscan Laboratories, and their mother company, Rapiscan Systems, have their headquarters in Torrance, but they also have offices all over the world. I am working at their Sunnyvale

office where they are researching and developing new solutions for security screening and radiation detection. At my first day at work I was really nervous, but only shortly after I noticed that there was nothing to be nervous about and that everyone was really nice and helpful and wants me to have a good time while I am here. Before I could start working there was a huge pile of papers that had to be signed and drugs tests to be made, of course I passed and could stay at the company. In the beginning everything was about adapting to being at work and actually realizing what we were doing. Now almost three months later it starts to feel like I know what I am doing.

Since I got here I have been assigned a few different projects. I have been spending most of the time working on a project called EuroSky, developing better solutions for airport security screening. There I have both been spending time in the lab, testing things on their different X-ray machines, but also some time in my cubicle, which is very American in my opinion, researching for different tasks or writing

some Python code. When I got here I knew nothing about Python but since everyone else here was doing that I just had to learn to use that instead of MATLAB, something that I have really enjoyed doing. They do not use Latex here when writing reports either, which hurts my soul just a little bit, but on the bright side I will be really good at Word when I leave this place. My favorite days at work are Tuesdays since that is the day when we have a yoga teacher coming having a class with us, right in the middle of the office.

Of course there is more to do than working here, the weekends have been fully booked with trips to places

RAPISCAN LABORATORIES

Founded 1993

LOCATION

Sunnyvale, California

WEBSITE

rapiscansystems.com



around the San Francisco Bay area and even one weekend to Washington DC. When getting here I was a little afraid that I would become the typical American and just driving my car everywhere

and eating fast food. Instead I might actually have become more fit since I got here. Usually I ride my bike to and from work every day and for one of our weekend trips we took a longer

bike trip to Muir Woods. My common mistake is to think "How hard could that be?" when someone asks me to do something and then realizing afterwards that it was ridiculously hard. That was exactly what happened this time. Read my blog and you can also hear about the next time I was having the same thought.

Apart from it being the longest and also the steepest uphill I have ever been biking it was a nice trip

with good company. On our trip we passed the Golden Gate Bridge which was visible and not cloudy that day, a perfect day for biking so to speak. After having lunch in the cute small seaside town called Sausalito there was almost straight uphill for the next hour. The only good thing about going uphill is that you can go downhill afterwards. Going down was amazing, we did not have to paddle at all and the view was extraordinary. Our destination, Muir Woods, is famous for its large Redwoods trees and it felt like we were all tiny compared to the surroundings. The day after I checked what distance we had travelled, instead of the 30 km I thought we were supposed to bike it was around 70 km.

Now, almost three months after packing up my apartment in Gothenburg, I have had more experiences than I could ever dream of. From work and traveling but also I have been getting quite a few life skills. Those include being hit by a car, moving by myself and eating a bagel for the first time in my life. I am looking forward to see what more experiences I will meet during this year that has only started.

LOTTA BERGBOM

*First published in
CETAC Trainee Report 2015*



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LUDVIG VIKSTRÖM

EDUCATION

B.Sc. Engineering Mathematics

BRACKET
COMPUTING

LOCATION

Sunnyvale, California

WEBSITE

brkt.com

The Silicon Valley Startup Dream

I have been working twelve hours a day for five weeks and I think I am finally starting to grasp what the Bracket product is all about. “Bracket is currently in stealth mode”, is basically all you can read on the homepage when I am writing this. But in September we are scheduled to release our product publicly, so visit BRKT.com and have a look!

Bracket is working with enterprise computing in the public cloud. When I got that description of the company during the application process it didn't mean anything to me, but now it does. We're developing an advanced and really interesting product that eventually will be able to change how large corporations use data centers.

I'm working solo on a COGS optimization project for Bracket. It's a large

project that involves many different pieces of software that have to be designed, built, and integrated with each other. I've spent some weeks designing and building a database that I'm now filling with large amounts of data about how we use our product. The next phase is to build tools that query and analyze the data, which I'm currently working on. We want to use this tool to make decisions about how we should hedge our hardware usage. Basically, this adds up to something of a portfolio optimization problem where we can trade and hedge for different scenarios. It really has some nice and interesting mathematical tweaks to it, and since I'm the only person in the company working on this project it gives me a lot of freedom to try out whichever ideas I believe in. It was interesting and fun in the beginning, and it only keeps getting better and better.

When I think about what I have done during my Engineering Mathematics education at Chalmers University of Technology, I realize that the courses I liked best back then are also the courses that I find most useful now. I guess that is an indication that I have a job that I like. I have now been in the U.S. for about two months. I have stopped keeping track of all the miles that I have traveled, but it is a lot. My girlfriend, Rebecka, whom you can read about on another page in this magazine, is doing her internship down in Los Angeles so I have already taken that trip quite a few times, and I expect that there will be many more trips to come.

We started our journey with the yearly CETAC meet-up in New York. We had a great time and after an intense period in school, it was a break that we all needed. NYC is a great place to be, but also really intense so after that

me and Rebecka headed to Boston to meet some of her relatives for a couple of days. It was great, and I can really recommend Boston. It is definitely one of the most European cities in the US, and that is something I already miss. We left Boston and headed over to the west coast where we got picked up by a previous year's CETAC member. Two hours later we had bought his car, which was part of the plan. A few days later, we drove down to Los Angeles to spend a week there looking for an apartment for Rebecka. Los Angeles is a really nice city. I was really skeptical when we first got there since I had been there before and did not become that impressed, but now I really like it. It has a good city vibe and great beaches, something you don't get that much of here in the Bay Area. Bay Area implies the area around the San Francisco bay, check it out on the map if you haven't already. If you're a CETAC member of 2014 you have a high chance of ending up here. I live in Mountain View, near the Google headquarters. This is 40 minutes south of San Francisco and

pretty close to the north is San Jose. I guess that Mountain View is a city, but it does not really have a city vibe, the same goes for Sunnyvale, where I work which is just south of Mountain View. North of here is Palo Alto, which is more fun since Stanford is there, hence a lot of students, bars, and restaurants.

One day last week, when I woke up it was actually cloudy outside. I was really surprised and so disappointed. That wasn't what I expected from California weather. In a few hours, however, it was all gone, and we were back to steady sunshine and our regular 28 degrees Celsius. I think the predictability of the weather here is one of the largest differences compared to Gothenburg.

Today is a Friday, and I am about to leave work a little early but still late enough to enjoy some of our weekly Friday beer bash. I'm taking the five-hour drive down to Santa Barbara today to meet up with some other CETAC members and spend the weekend there. Last weekend was the same story but then I visited our members in San Diego. We had a great time with

surfing, good food, and good company. Life here in California is not bad at all.

LUDVIG VIKSTRÖM

*First published in
CETAC Trainee Report 2014*



Programmes at Chalmers University of Technology

- Computer Science – algorithms, languages and logic
- Computer Systems and Networks
- Data Science
- Embedded Electronic System Design
- High-Performance Computer Systems
- Interaction Design and Technologies
- Software Engineering and Technology

chalmers.se/cse

Programmes at University of Gothenburg

- Applied Data Science
- Computer Science
- Game Design & Technology
- Software Engineering and Management



UNIVERSITY OF GOTHENBURG



Summer at the Edge in Ohio

When I first came to the campus in the Midwest where my summer was going to take place I feared that I had ended up in the middle of nowhere, especially after just spending one crazy week in the eventful New York City. I had no idea that the best summer ever was about to begin. The adventure that developed me on both a professional and personal level was a mixture of intense problem solving, road trips, and night swimming. Let me tell you about a life-changing experience.

Spending one week in the high city beat of New York was a great start to my new American life. A visit to the Apple Store, followed by coffee in Harlem and an afternoon Mojito in trendy

Little Italy; there is no end to the diversity of the city! We managed to get last-minute Broadway tickets to the musical Hair, which was really impressive. After the show, the audience was invited to get up on stage to dance with the world-class performers. I stayed at my friends' house in New Jersey and it was nice to get a break from the intense Manhattan in the calm neighborhood. We had a great time at one of the world's largest amusement parks Six Flags, where I developed an addiction to the delicious Dippin' Dots ice cream. I find it interesting that any trouble with a rollercoaster in Sweden creates front-page headlines, while at Six Flags it seems to happen all the time. We actually got stuck in the Superman rollercoaster, hanging in "the Superman position" for about twenty minutes


before we eventually got down!

The contrast between New York and the campus in Dayton Ohio where I was going to live and work could not be stronger. It would not be long though before the warmhearted people made it a great place to be. The first day at work, Dr. Petkie invited me to breakfast before we headed to the Terahertz laboratory where I got introduced to the impressive setups and ongoing experiments. I was mostly involved with a project for the Wright Brothers Institute called "Summer at the Edge", where creative students from all over the US were put together to solve complex problems through intense collaboration. My team consisted of a couple

THE TERAHERTZ RESEARCH LAB OF WRIGHT STATE UNIVERSITY


LOCATION

Dayton, Ohio



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of physics and engineering students and together we worked on detecting vehicle signatures with various sensors. With an unbreakable team spirit, we also had a lot of fun outside work going to baseball games, and singing karaoke. Our project leaders were the best you can imagine. Not only were they extremely supportive, but they also made sure that all of us had a great experience and learned as much as possible. The work was very independent and a day of work could consist of doing experiments, analyzing data with MATLAB, or holding presentations about the project. The fact that the dynamics of a car depend on its load was used to create a profile of a vehicle. The sensors we used were accelerometers, electro-optical cameras, short-wavelength infrared cameras, radar, and an acoustic array that so far was more or less unexplored. The sensor data we got from a car driving over a speed bump was fused to determine whether or not the car was loaded. At the end of the summer, we were able to differentiate a loaded car from an unloaded in 100% of the tests!

The campus of Wright State University is located in the Dayton area. Downtown Dayton does not have the best reputation and we were repetitively warned to go there because of the high criminality. Some people in the area have actually never been downtown. Against all odds and despite all the drug dealers the city really has its highlights! The Oregon district offers pubs with jam sessions, charming restaurants, and an independent movie theatre. The first time we went downtown we managed to take the wrong

bus on the way home late at night. We realized it too late and had no idea where we had ended up, but thanks to loyal car-owning friends we got home after a crazy night!

To have a car over there definitely makes things easier, but thanks to my friends and great coworkers who gladly gave me a ride I survived without one. There were three bars within walking distance, so it was not the end of the world. At work, I mentioned my thoughts of getting a bike, and the next day my coworker Sara surprised me with one that I borrowed over the summer! Even though the area around campus is not ideal for biking, we managed to go on some bike trips in the beautiful weather. When we biked to the mall on the highway, we got some strange looks though. During hot days when we didn't get a ride to a nearby lake, we sneaked in to the swimming pools in the neighborhood, which worked fine except for one time when we were chased by a security guard. Luckily we were faster than him! Finding a place to swim was something we didn't have to worry about during a wonderful weekend in Chicago where the beach of Lake Michigan is in the middle of the city!

As I go back to Sweden, I

bring a lot of nice memories from my summer quarter! An unforgettable night was the Swedish "kräftskiva" that me and two other Swedes hosted. Singing Swedish snaps-songs with our American friends was so much fun. We also threw a midsummer party. I have had an awesome stay and the most adventurous summer of my life. Not only have I improved my relationship with programming, I also made friends for life!

EMELIE NILSSON

*First published in
CETAC Trainee Report 2009*

EMELIE NILSSON

EDUCATION

B.Sc. Engineering Physics

BEST US EXPERIENCE

Riding the mechanical bull and line dancing to country music in the club "Yellow rose".



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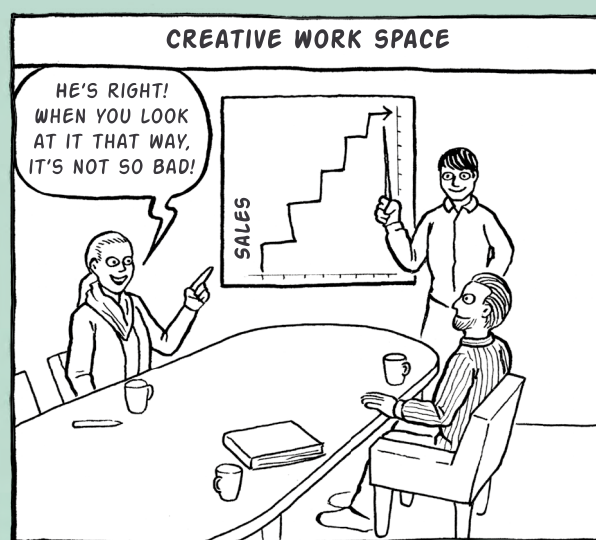
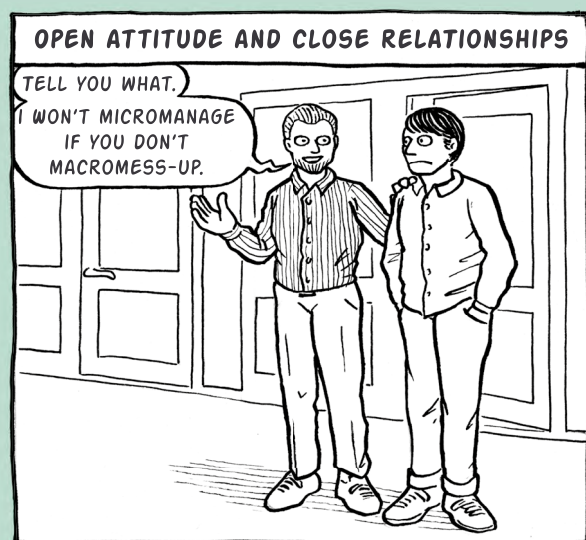
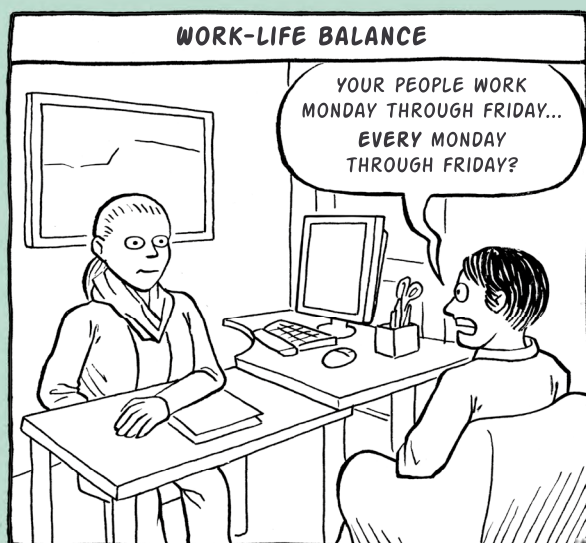
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