



cetac

CHALMERS ENGINEERING TRAINEE  
APPOINTMENT COMMITTEE

# TRAINEE REPORT 2015

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# Editor's note

A year ago, I joined Chalmers Engineering Trainee Appointment Committee (CETAC) together with other students from Software Engineering, Engineering Physics, Electrical Engineering, Computer Science and Engineering Mathematics. The opportunity to find new experiences and new cultural experiences was intriguing and exciting.

CETAC has sent over 1000 Chalmers students since 1966 to qualified internships in North America. This is one of the many opportunities offered at Chalmers and gives you a chance to explore the world outside of the Chalmers lecture halls. Compared to many Chalmers committees, CETAC helps you to get a qualified working experience in the US for your sabbatical year or just over the summer. The duration of an internship can vary between 8 weeks up to 12 months depending on the company and your preferences.

During my CETAC journey, I got the chance to create an entire magazine, Trainee Report 2014, and also meet a lot of new friends, help arranging activities for CETAC members and also have a lot fun along the way. One year of hard work has finally paid off and most of us took the opportunity to explore the land in the west. In this magazine, you can read about the adventures of the CETAC members of 2015, who are in the US today to find out more about what they have been up to.

## Jennifer Panditha

Editor-in-chief, CETAC 2015

*PS: You can also follow CETAC members on [cetac.se](http://cetac.se)*



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## THE MEMBERS OF CETAC 2015



# Table of content

Editor's note	-	<b>1</b>
Bli medlem i CETAC!	-	<b>5</b>
Meet the members	-	<b>6</b>
CETAC 2015 visiting NYC	-	<b>8</b>
Reinventing the public cloud	-	<b>10</b>
Alexander Kuzmin & Johan Backman		
Tropical Engineering in the sunshine state of Florida	-	<b>15</b>
Daniel Hansson & Simon Martinsson		
A summer at NASA	-	<b>20</b>
Armin Azhirnian & Ingrid Strandberg		
The tranquility in Fremont	-	<b>23</b>
Sebastian Bellevik		
Life in New England	-	<b>25</b>
Hampus Forsvall		
Sunny days in Sunnyvale	-	<b>28</b>
Lotta Bergbom		
Data Mining the Music Industry	-	<b>30</b>
Johan Björk		

**32** - Exiting adventures in Boston

Albin Karlsson

**34** - L.A. Vida Loca!

Tobias Tikka

**36** - Awesome sauce just hit San Diego. Watch out everybody!

Carl Jansson

**39** - Murrica' for three months

Simon Persson

**41** - California Style Sheets

Oscar Nilsson

**43** - California dreamin'

Per Thoresson

**45** - Monitoring the SAN shine with Virtual Instruments

Adam Brinkman

**47** - Surfin' USA

Hampus Torén & Rasmus Åkerlund

**51** - CETAC 2015 in Stockholm

**53** - CETAC Alumni

**55** - The Chairman Speaks

**56** - The American-scandinavian Foundation

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Husqvarnas nuvarande och framtida affärsbehov kräver kompetenta medarbetare. Vi är därför alltid på jakt efter nya talanger som stämmer med våra behov. Vi erbjuder en stimulerande miljö och möjligheter till nya utmaningar och karriärutveckling.

## ÄR DU INTRESSERAD?

På Husqvarnas karriärcenter kan du skapa ditt eget personliga karriärkonto, som du behöver för att söka jobb hos oss: [www.husqvarna.se/karriärcenter/karriärkonto](http://www.husqvarna.se/karriärcenter/karriärkonto).



# BLI MEDLEM I

## CETAC

CETAC är en ideell förening vars syfte är att ordna praktikplatser i USA för teknologer från E, D, IT, F och TM oavsett ekonomisk bakgrund. Vi kan stoltsera med tidigare arbetsgivare som till exempel NASA, Tibco Spotfire, Bracket, Apple, Intel, Microsoft, VMWare och SUN Microsystems. Praktikplatserna varierar från en sommar till ett helt år. Vissa blir till och med kvar i USA, eller kommer tillbaka igen efter de har tagit sin examen! CETAC lägger också stor vikt vid att praktikplatserna är intressanta och kvalificerade ingenjörsarbeten för varje enskild medlem.

Praktiken ger inte bara goda arbetslivserfarenheter men också ett värdefullt kulturellt utbyte. Kulturell förståelse och erfarenhet är något som efterfrågas allt mer i det globaliserade näringslivet. Förbättrade språkkunskaper i engelska är också jätteviktigt då ingenjörers kommunikativa förmåga är av stort värde för företag idag men också att för att företag har engelska som koncernspråk.

För att bli medlem i CETAC skall du studera på E, D, IT, F eller TM samt vara svensk medborgare eller ha permanent uppehållstillstånd i Norden. Vid ansökningstillfället måste du även ha uppnått minst 75 hp på din utbildning, och under det kommande året uppnå sådana studieresultat att du är studiemedelsberättigad.

CETAC är föreningen för dig som är motiverad och beredd att lägga ned tid och engagemang för att få ut något extra av din studietid. Vill du söka en praktikplats till sommaren 2017 så är ansökningstillfället för detta våren 2016. Som medlem är man aktiv knappt ett år innan avresa och får chansen att lära känna teknologer från andra sektioner. Missa inte chansen att uppleva ett spännande och lärorikt äventyr!

Om du har några frågor, tveka inte skriva till oss på [info@cetac.se](mailto:info@cetac.se) eller läsa mer på [CETAC.se](http://CETAC.se)



# SIBBHULTSVERKEN

SINCE 1891

# Members of **CETAC** 2015



Ingrid Strandberg



Johan Backman



Sebastian Bellevik



Alexander Kuzmin



Tobias Tikka



Carl Jansson



Simon Persson



Oscar Nilsson



Daniel Hansson



Simon Martinsson



Armin Azhirmian



Lotta Bergbom



Hampus Forsvall



Johan Björk



Albin Karlsson



Per Thoresson



Adam Brinkman



Rasmus Åkerlund



Hampus Torén



# CETAC 2015 visiting NYC

Landing in the US, knowing you had a week of fun ahead of you in New York followed by months of exciting work and culture, was a fantastic feeling. Everyone was equally happy and nervous since even though this was sure going to be a great experience, it was uncharted water and no one of us had done anything like this before. Suddenly we had all left the safety at Chalmers University of Technology behind us and ventured out into the world of American workplaces that we have only seen before on TV.

Those of us who started our trip to the US in New York all stayed at an Airbnb apartment in SOHO, Manhattan, which was a great location. We stayed with a guy named Alex, who rented out his two bedroom apartment, which fortunately had beds for all of us (!). The neighbourhood itself is very pleasant and you were within walking distance of the entire south part of Manhattan. During those days we managed to visit most of the “must see” attractions like the Empire State Building, Times Square, Central Park and the Statue of Liberty. We also made sure to go get our first real american breakfasts, with watered down coffee, eggs (any style), toast and bacon. While walking around near Rockefeller Center some of us even got a glimpse of both 50 cent and Mr. T.

We also had the opportunity of watching a baseball game between the San Francisco Giants, and the New York Mets, with our contact at ASF (American Scandinavian Foundation) who helped most of us with our work Visas. Even though our interest of the game itself varied from person to person and from time to time, during the three hours it lasted, it was still a very enjoyable and entertaining

experience - the burgers served in the arena was amazing.

Every year that CETAC goes to New York we are invited to visit the ASF New York Office. This year was no different and they invited us for lunch, giving us a lot of advice for our upcoming months working in the US, and helping us with paperwork. This was definitely a great opportunity for all the members to ask any questions they might have and all of us agree that this tradition is something that must carry on.

Even though everyone's experience of the week in New York may surely differ everyone seemed to have an amazing time. No matter how great it was, it was also just the beginning of a much greater experience and something none of us will ever forget.

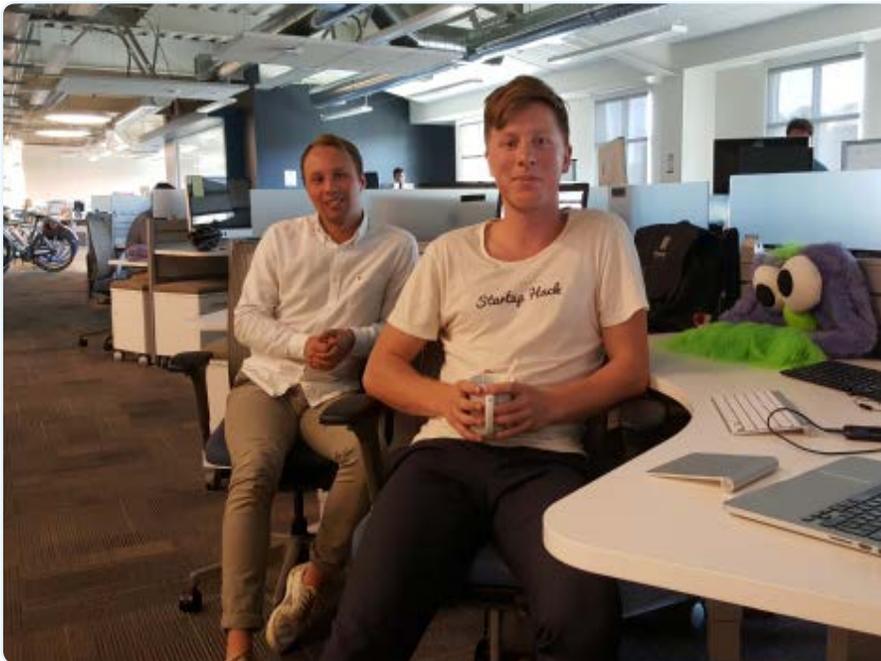
## CETAC 2015 NYC TOP 5

1. Snap a group photo with the naked cowboy at Times Square.
2. Burger and fries at Five Guys
3. Relax in High Line Park
4. Hit a rooftop bar late at night
5. Get the student discount (With Chalmers ID!) at the Museum of Modern Art



# Reinventing the public cloud

Moving to a whole new country, and on top of that work for a startup that caters to some of the most influential companies in the world is a challenge, but an unforgettable learning experience. If that was not enough, we have and will surely continue to consume everything America has to offer. All the way from beautiful parks and mountains, to amazing cities, you could only dream about.



## ALEXANDER KUZMIN

**Age:** 22

**Education:** B.Sc Engineering Physics

**Best US memory:** Kayaking in one of the national park

**Duration of internship:** 6-12 months

## JOHAN BACKMAN

**Age:** 21

**Education:** B.Sc Software Engineering

**Best US memory:** The International 2015

**Duration of internship:** 6-12 months

## THE COMPANY

**Company:** Bracket Computing

**Location:** Mountain View, California

**Number of employees:** 68

**Web:** [www.brkt.com](http://www.brkt.com)

**B**efore arriving in the US we had made sure we could stay with some old CETAC-members, David and Benjamin (thank you so much guys!), in Sunnyvale. Thanks to them we had a place to stay when we arrived that was pretty close to work. But after visiting San Francisco a few times, we realized that living in a quiet and calm Sunnyvale would not cut it. We had to move up to San Francisco.

Anyone who has read anything about Silicon Valley or the Bay Area in general knows that housing in San Francisco and Mountain View is crazy expensive and pretty hard to come by. There is an article comparing the prices of castles in Europe to the prices of medium sized apartments in San Francisco, which puts the prices in perspective. The city is fantastic though, and we must say that we would rather have seven rooms in Pac Heights than a 130 room castle

in Poland.

Even though the odds were against us, we eventually found a place in central San Francisco (not Poland). It is a large co-op or 'tech house', which means that we are sharing an old hotel building with sixty other people. Yeah, you read that correctly, 60 people. It might sound crazy but it is actually a really fun experience. You always have someone to hang out with and we have



met some incredible people thanks to this housing arrangement. The people in the house come from all around the world, with the same mindset as us, you want to meet new people and have an amazing experience here in the US. It might seem daunting but it is something we can really recommend.

As we mentioned it is expensive to live in San Francisco, and we are actually paying three times as much as we each did for very nice student apartments in central Gothenburg, and what we are paying for is just a room. No private toilet, no private shower, and the rooms are pretty much the size of a large closet. Being a math geek, Alexander calculated that he pays 13 times more per square meter than in Gothenburg.

We are working at a small(ish) startup called Bracket Computing, located in Mountain View, California. The company is trying to reinvent the public cloud for big businesses that crave security, reliability and performance. Bracket's recent



customers include some of the largest banks in America. Our customers all have the common denominator that they have huge data centers on-site. These data centers require their own engineering departments to maintain. While there is nothing wrong with having an engineering department, companies want to be able to focus on their core strengths. For example, investment banks are really good at doing investments, and that is what

they wanna keep doing and focusing on. They do not want to be distracted by running datacenters. Enter Bracket Computing.

By adding a layer of security and management on top of the public cloud service providers like Amazon Web Services and Google Compute Engine, we allow our customers to move their data to the public cloud

securely. There is a lot of talk about “disruption” in Silicon Valley, and in that spirit, the technology of Bracket will disrupt the datacenter businesses when companies move from specialized hardware onsite, on to the public cloud.

The spirit of Silicon Valley presents itself at all hours of the day. During the 15 minute walk to the Caltrain in the morning we walk past companies like Pinterest, Adobe, Salesforce, Heroku, Atlassian, and Zynga (disrupting Facebook games!). The train to work is shared with employees of Apple, Google, Dropbox, IBM and more. Many in company branded clothing, most with their MacBook out to get some more work hours done during the commute. When getting off the train there are Google and Apple-branded shuttles waiting to take their employees to work. On a lucky day one of the new prototypes of Google’s self-driving cars might drive by. Once you get into work there is a delivery app for everything. Need a new trackpad for your computer? Order off amazon and you will have it within the hour. Lunch is delivered around 12 by a delivery person dressed in orange clothes, we never have to leave the building. This could be read as some kind of sci-fi dystopia. But it is awfully convenient.

Even though we are both part of the same team here at Bracket, we have quite different tasks. Alexander has been writing a Packer plugin that will be open sourced and used by our customers. Johan has been working on streamlining the CI-pipeline. While that is our main occupation, we are both taking part of the other tasks that need to be done in software engineering; verifying bugs and features, and writing tests, tools, and bug fixes for existing code. Things that can reach customers the following week, which is one of the



most awesome and at the same time horrifying experiences of working at a startup.

Being at a startup comes with a large chunk of personal responsibility and hard work. But we have not only been working, we have done everything from celebrating midsummer in Sunnyvale to river rafting in Sacramento. It’s been a nonstop flow of experiences since we touched down in the US.

It feels like we have done so much already, but there is no limit to what we

plan to do and experience. Coming up just now is a trip down to San Diego to visit another CETAC-member, Per. We have still much to explore here in the area, and especially in San Francisco. Then there is of course there rest of California with great national parks like Yosemite and cities like Los Angeles and Las Vegas. We have a feeling it will be some intense but memorable ten months to come!

**Alexander Kuzmin  
& Johan Backman**

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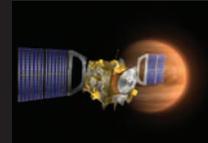
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## Programmes at Chalmers:

- Computer Science - algorithms, languages and logic
- Computer Systems and Networks
- Embedded Electronics System Design
- Software Engineering

## Programmes at the University of Gothenburg:

- Computer Science
- Software Engineering

CHALMERS |  UNIVERSITY OF GOTHENBURG



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Ståldörrar

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Bekvämt, eller hur?



## MASTER'S PROGRAMME INTERACTION DESIGN AND TECHNOLOGIES



### Design of technology for human use

Interaction design is the practice of designing interactive digital products, environments, systems and services. The focus is on interactive systems and behaviour; how users act and how products respond to user behaviour. Interaction design is the key to any design project aiming to create complex and computer-based systems that are to be used by humans, e.g. software, games and interactive products like smart phones, MP3-players, "intelligent" homes, cars and clothes.

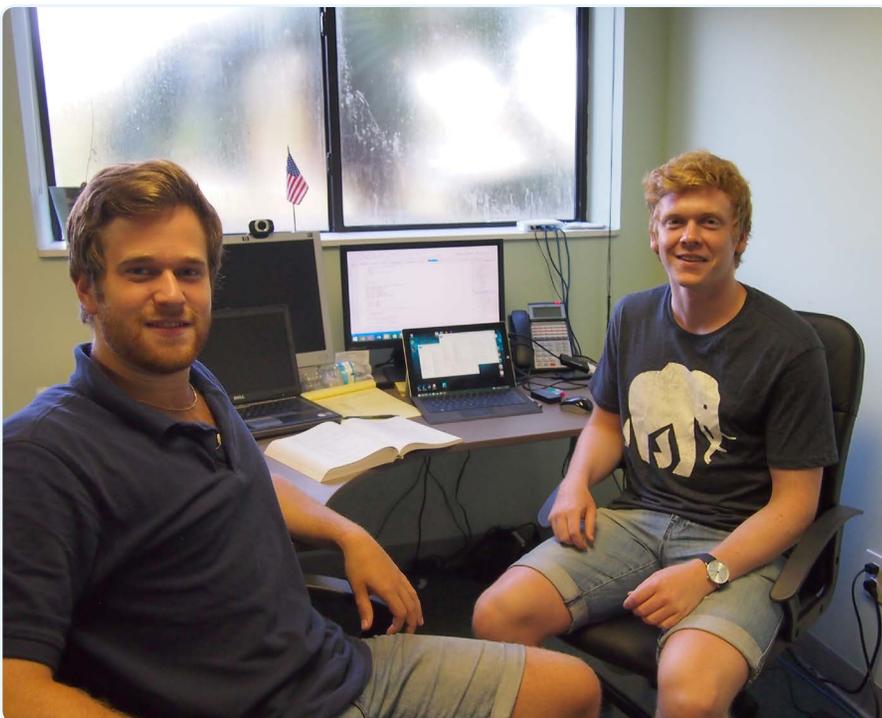
With today's development in technology, the possibilities for applications are endless.



**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

# Tropical Engineering in the sunshine state of Florida

Once upon a time two Swedish fellas went to the far country of America searching for ways to fill their head with new culture and evolve in their engineering knowledge. Deep down at St. Augustine Beach they made their home. Working for Amerden Inc. to learn the ways of Automated Guided Vehicles having an adventure of fun along the way.



## DANIEL HANSSON

**Age:** 24

**Education:** M.Sc. Electrical Engineering

**Best US memory:** Guiding newly hatched sea turtles to the ocean at Vero Beach

**Duration of internship:** 1 year

## SIMON MARTINSSON

**Age:** 25

**Education:** M.Sc. Computer Engineering

**Best US memory:** Getting my passport and visa approved by homeland security.

**Duration of internship:** 1 year

## THE COMPANY

**Company:** Amerden Inc.

**Location:** Saint Augustine, Florida

**Number of employees:** 13

**Web:** [www.amerden.com](http://www.amerden.com)

June 14th, far up over the east coast of America we sat, excitedly interchanging thoughts on how our new job and life would be. Leaving the other members of CETAC and a high paced week of exploring in New York City behind us; we were now heading for Jacksonville airport in Florida. As we approached our destination the airplane's small egg shaped window revealed how the climate already began to change. We could see glimpses of

beaches stretching for miles and miles, and how the vegetation seemed much more green than anticipated.

A mere three hour trip from New York and our feet touched ground at the northern edge of Jacksonville. In the pursuit of our suitcases we could feel how reality caught up to us and surfaced emotions of both expectation and uncertainty. That kind of emotions that leaves you curious and wanting

to know what awaits behind the next door; beyond that first door stood the tropical climate of Florida. With our bags in possession we went through the airport slide doors leading to the pickup parking. The feeling of being hit with that amount of humidity and heat can best be explained and demonstrated by putting your head too fast over the oven whilst trying to open and remove a long cooked meal. As the sweat started to reflect sunlight



on our pale Swedish foreheads, we got picked up by the previous interns at Amerden. After an hour of driving through traffic with what seemed to be people with a slight lack of traffic experience, we finally arrived at Saint Augustine Beach and Anastasia Island where the days of our next year will be spent.

Before our first day at work we had the weekend off to get a feel of what St. Augustine was all about. St. Augustine is a fairly small town in the northeast coastal part of Florida, founded in 1565 by the Spanish. It is the oldest continuously occupied European-establishment in the USA with, as one can imagine, a lot of history running through its heart. With a population of

around 15 000 people it is still a lively town with a lot of restaurants and live music to go around. But for now we got the chance to explore different places and restaurants closes to our location, along Beach Boulevard. The street itself is surrounded by palms, with the beach just a few steps away. Almost half of the population lives at St. Augustine beach so there is always people to interact with, especially in the summers when the tourism pikes.

About a mile down the street lies Publix which is the closest supermarket to us. We went there to buy breakfast and dinner for the upcoming days. As we roamed around the shelves looking for something slightly resembling what we were used to, we also tried to find

something that americanized us a bit more. We found and decided to try the classic bagel and determined that we wanted to spread them with some ham and cheese from the american cuisine. So we went to the deli counter proudly looking for a pound of their finest american cheese. But once the staff came up to us asking for what we thought was no more than a usual order, we were met by the phrase “You want to taste American cheese!?” , a giggle and confusion. Not any more eased by the fact that we wanted a whole pound of it. Anyway, we got out of there with a half of pound and a promise that we would come back and try the swiss cheese next time instead. The weekend left us really excited about experiencing all of St. Augustine though, and we were ready for our first day at Amerden.

We got up early, just when the sun colors the horizon and had our american bagel and cheese for breakfast. We then for the first time drove our new route to work. Past the town’s iconic lighthouse, past the bridge of lions that connects us to downtown, past the old county jail who have become a tourist attraction and soon thereafter arriving fourteen miles later by the office along US 1. The office lies right by the road, behind some palms and a smaller pond who functions as a stepping stone for frogs and turtles before the grow too big and heads for greater places. We walked past a stereotypical american toy house like mailbox with a red plastic flag on the side, in through the office door where the logo said “Amerden Inc AGVS Innovation and reliability”. We had finally officially started our yearlong internship.

Amerden Inc. is a small company with large ambitions and their business is to maintain and support Automated Guided Vehicle (AGV) Systems. With a crew of 13 employees Amerden both retrofits old vehicles with new systems but also supply customers

with completely new systems and vehicles as well. Our work begins as for most other new recruits, at the study bench. An AGV system can be quite complex and require a broad knowledge that stretches from the electrical components and machine code controls on each individual vehicle up to the higher level master controller for the entire system.

As an intern at Amerden you get involved in all aspects of the work. Our job quickly lets us explore and learn more about the entire AGV system. One day can be spent working on a rebuilt vehicle going through and understand its wiring, to be able to make new AutoCAD drawings that describes it correctly. Another day can be spent with C# programming for the master controller or with some lower level PLC/Assembly programming on the vehicle itself. Then the next day you are out in the workshop again trying to re-wire a safety bumper system that is malfunctioning and needs to be exchanged or replaced by another equivalent solution. But just as you get comfortable with office and workshop labour, the boss tells you that there is a customer further up north that require some onsite work accomplished and you need to be present. With a smaller company as Amerden this is what you get, a diverse job with tasks in the entire engineering spectrum and rarely a dull moment.

All the current Amerden customers are not actually situated in the sunshine state of Florida, therefore we do get the opportunity for a great deal of travel whilst we are working. The most part of the clientele are within driving range though, so when you get that customer call you better buckle up. For instance I, Daniel, left for what is considered a short drive of seven hours to Augusta, Georgia, to pay a visit at a tractor manufacturer. Here they built tractors in all different shapes and forms with the help of 64 AGVs; our job was to replace the



guiding wires at a certain section that had been worn out. You cannot be afraid of getting a little dirty when you work at Amerden, because here it was all about ripping out cables from the floor and replacing it with new ones. Maybe not the work you expect after studying at Chalmers, but certainly a great way to learn how these systems works. My primary job was to see that we actually replaced the old wire with the right new one, or the AGVs could drive in all different directions. In the floor cuts it is four guiding wires with four different frequencies, which makes it possible to guide different paths depending on what tractor the AGV is carrying. It may be harder than it sounds, because the floor cuts can be as a labyrinth sometimes containing

both new and old unused wires. My next job was testing of the vehicles, to see that the vehicle drives the path it actually is intended to do. This time the job turned out successful, as it usually does at Amerden, and now it was time to return to the desk in the sunshine state.

Soon after Daniel got back from Georgia it was time for me, Simon, to go on my first business trip. This time the customer was a textile manufacturer who is situated in Pacolet, South Carolina. The company was replacing smaller machines with bigger ones, which meant that a bigger AGV needed to go down and collect the rolls at those stations. These changes involved reprogramming and



testing of the AGVs local movement to make sure the AGV stopped and loaded at a centimeter precision by the station. The new changes also required me to get an understanding of the plants overall system, to be able to rewrite parts of the master control layout. These parts makes the master notice the new changes and know how to order the vehicle for a pick up at the new locations. The part that I appreciated most about this job was the fact that these changes that I made are going to be used for a long time ahead by the customer. This is something that both me and Daniel recognized quite fast at Amerden, they give us a lot of responsibility early on. The projects that we are working on and learning from is not just for fun, it is actually real projects for a real customer that wants a quality job done. Which is pretty exciting and has been the biggest difference from the

studying environment.

Because of the range and pace of the work we do at Amerden it is quite nice to have a beautiful place to return and relax at when the working day is done. Our apartment is as mentioned before right by the beach. This makes it a perfect setup for morning runs to the pier while the sun is rising, right before heading to work. The beach actually stretches for twenty miles and the sea life is not afraid to show itself. If you pay enough attention you might see sharks, dolphins, sea turtles and alligators just at the place you were about to lay your towel.

The wildlife here in general is very different from Sweden's fairly innocent nature. Do not be surprised if a tortoise or an armadillo cruises along the same street as you, whilst an alligator sunbathes right by the stretch of water on the other side. The best wildlife treat so far has been the encountered with newly hatched sea turtles in the sunrise at Vero Beach. These small rascals actually went the wrong way, towards the hotels and away from the ocean. So they needed some guidance to navigate themselves towards the water instead, an astounding experience! When you least expect it nature offers you special

treats like that, so keep your camera ready!

Downtown of St. Augustine lays just six or seven miles from us and this year they are celebrating their 450th year anniversary with a big weeklong festival. We are happy to be here for the celebration as it will be a huge diversity of people to meet and new things to experience. But even if the 450th celebration is not occupying St. Augustine, it is a nice town with plenty to do. If you go downtown you will find the old streets that still this day looks like an old village. You also find a variety of restaurants and bars, perfect for a Saturday afternoon to an early morning. It is always live music downtown and with the good atmosphere in the bars you always find something worth listening to. The town really has a good nightlife and the people are friendly and helpful when they notice you are from another part of the world.

But this is just the first months of what is going to be a year of AGVs, americans, new places and an adventure never to forget. The upcoming months at Amerden will be even more challenging as they most certainly will mean more responsibility and we are looking forward to learn more about our job and the american culture. Ever since we landed in Jacksonville, saw our apartment, entered the office, to the point when we are working with our projects and even when we are out breaking sweat in the workshop, we have enjoyed every moment here and we appreciate the chance that has been given to us. We would also like to extend a special thanks to Amerden for helping us and guiding us both at work and in the everyday life here in the sunshine state of Florida.

**Daniel Hansson & Simon Martinsson**

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# A summer at NASA

NASA's Goddard Space Flight Center (GSFC) is the largest NASA Center, and home of ten thousand scientists and engineers who build instruments and new technology to study the Earth, the sun, our solar system and the universe.

Focusing on the Earth, the Planetary Geodynamics Laboratory accommodate the GSFC Very Long Baseline Interferometry (VLBI) Group. They are a group of people belonging to NVI Inc, a NASA contractor company. They use the geodetic technique of VLBI to study the Earth's movement in space. VLBI measurements are used to determine the positions of observing radio telescopes on the Earth by measuring the time it takes for a radio wavefront from a quasar (extragalactic radio source) to reach different observation sites.

There are VLBI antennas all over the world, including the Goddard



## ARMIN AZHIRNIAN

Age: 23

Education: B.Sc Engineering Physics

Best US memory: When I had a full slab of ribs at Red Hot and Blue

Duration of internship: 11 weeks

## INGRID STRANDBERG

Age: 24

Education: B.Sc Engineering Physics

Best US memory: When our boss said we could write a paper based on the work we had done

Duration of internship: 11 weeks

## THE COMPANY

Company: NVI inc.

Location: Greenbelt, Maryland

Number of employees: 10

Web: [www.nviinc.com](http://www.nviinc.com)

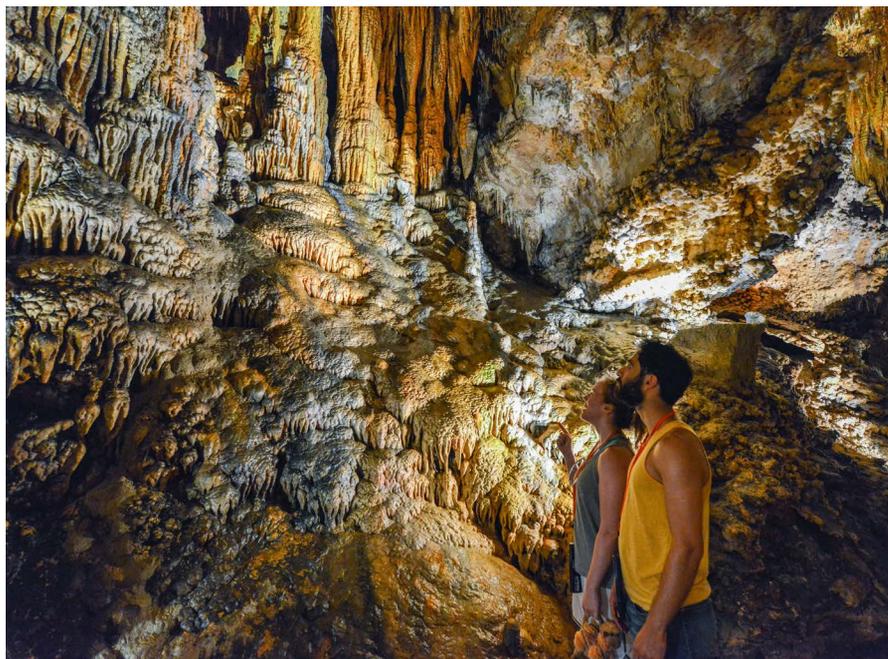


Geophysical and Astronomical Observatory (GGAO) four miles from the GSFC main site. We got to see their 12-meter antenna. Chalmers also has a VLBI antenna, at Onsala Space Observatory! Amazingly we did not know about the VLBI research at Chalmers before we came to the U.S.

The VLBI group at Goddard is a part of NASA's Space Geodesy Project. There are four major space geodetic observing systems that are included in the project: VLBI, Satellite Laser Ranging (SLR), Global Navigation Satellite System (GNSS), and the Doppler Orbitography and Radio-positioning by Integrated Satellite (DORIS) system.

The geodetic VLBI group was constituted in 1974. Even through the advent of the less expensive technique of GPS, the use of geodetic VLBI has remained relevant. One of the most important products of geodetic VLBI is the estimate of UT1 (Universal Time), the time scale based on the rotation angle of the Earth as observed astronomically. VLBI is the only technique that can with high precision determine UT1. GPS is actually dependent on UT1 data.

Most people have heard of Universal Coordinated Time (UTC), but UT1 might not be as familiar. The basis for UTC is International Atomic Time (TAI). But Earth's rate of rotation is irregular, so without a correction, atomic time would drift away from time reckoned by Earth's rotation. This is remedied by one-second corrections, so called leap seconds. Leap seconds are added when needed to keep UT1-UTC within  $\pm 0.9$  s. There was a leap second this June 30, the first one since 2012. That got some attention from the media, it was fun to see our colleagues being quoted in the news, explaining why there is a leap second.



UT1 is not only used for civil time-keeping, but accurate and up-to-date UT1 data is crucial for global satellite navigation systems, as mentioned earlier. For this reason there are daily one-hour VLBI sessions, called Intensives. There is a problem with the Intensives, however. Because of the short duration and use of only two stations, a simple model for the time delay between the two stations are used. For these reasons the Intensives give less information than the 24-hour sessions that utilize about 10 stations. The 24-hour sessions are only run

twice a week, and their data takes weeks to analyze so the Intensives are important. That is where we come in.

Our task was to find out the effect of mis-modeling on estimates of UT1. Most of our working time was spent on writing a computer program that could calculate this. None of us had used Fortran before, but basically all of their other programs were written in Fortran so we decided to go with that. Their old code was ancient Fortran 77, but in our program we incorporated a lot of the newer

features of Fortran. Getting more programming experience is always nice.

While Monday-Friday were filled with work, we did touristy things on the weekends. Mostly we went to downtown D.C, where there are many different museums, amongst other things. Occasionally we travelled further. One day we went to the Luray Caverns in Virginia. A huge cave, filled with stalagmites, stalactites, and other formations.

One thing we noticed about space geodesy and its scientist was how good friends everyone seemed to be. Many had been working together for decades and even people who had transferred to completely different fields of research still kept in touch. Contributing to that spirit, our boss John has a Space Geodesy potluck at his house every year. This year he had custom made m&m's.

Another much appreciated get-together is the company lunch. Once or twice a month we have had big NVI lunches. The picture shows us at Red Hot and Blue, an American restaurant known for their barbeque ribs. The ribs were delicious. Another American dish that we ate several times was pancakes. The variety of ridiculously tasty food is something we will definitely miss at home.

One of the best things about GSFC is that there is plenty of science, with lectures on everything from cubesats to plasma physics almost every week. This summer the Hubble Space Telescope celebrated its 25th birthday. As it happens Goddard is the place where the Space Telescope Operations Control Center is located and where lead scientist and nobel prize laureate John Mather hangs out. So when the birthday was due, Goddard had a day



full of space telescope related events including, a lecture with John Mather, guided tours and a panel debate where we got to listen to John M. Grunsfeld: the astronaut who repaired Hubble three times.

Working with the people at NVI has been an amazing experience. Doing real scientific work is really exciting. And the group became not only our colleagues, but also our friends.

To all the good people at the VLBI

group, you are the best colleagues and teachers one could ever wish for. We thank you all and hope to see you again soon.

**Armin Azhirnian  
& Ingrid Strandberg**

# The tranquility in Fremont

Even though three months have almost passed, sometimes I still have trouble grasping that I have actually lived in the United States, working with what I love, instead of being at home with the same old routines.



## SEBASTIAN BELLEVIK

**Age:** 29

**Education:** B.Sc Software Engineering

**Best US memory:** The visit to Universal Studios

**Duration of internship:** 10 weeks

## THE COMPANY

**Company:** Velos, Inc

**Location:** Fremont CA

**Number of employees:** 30

**Web:** [www.velos.com](http://www.velos.com)



I spent the summer living in the calm and quiet city of Fremont, in a nice apartment provided to me by the company I worked for. I had heard that that finding a place to live has been a real chore for a lot of the people coming here, so I was more than pleased when I found out that I would have a place to live from day one. That fact that the company-owned apartment is also furnished and that I had my own room and restroom made it even better. Though the very quiet life in Fremont might not be for everyone, with no nightlife whatsoever, it suited me perfectly. The weather was always nice, the people there were friendly and if you wanted a little more excitement San Francisco was no more than one hour

away with BART. Most weekends I took at the very least one shorter trip to places like San Francisco or Los Angeles but weekdays were almost exclusively about work, even most evenings. To some that might seem like a bad thing, but I have not been working all day and night because I feel pressured to do so, but because I honestly enjoyed my work.

During this summer, I worked as a software developer intern at Velos. Velos is a company that focuses on software used to connect and manage research activities that are used by a large number of medical institutions. When I first got the internship I heard that the only real problem was that, at the time, they did not know if they had

enough work to keep me occupied the entire summer. Looking back at that, now with almost the whole summer behind me, brings a smile to my face.

The first few days in the office were spent filling out paperwork and just getting acquainted with the workplace. Then after a few days I actually got a meeting with one of the co-founders

of the company, talking about some of my strengths and weaknesses among other things. He asked me if I preferred to work in a team or alone, to which I replied that I definitely enjoy working alone.

I was given a huge task, nicknamed Mission Impossible before I had come up with a more appropriate code name. The goal of the project was basically to develop an application to help maintain and manage all of their current applications and preferably future ones as well. I can not go much into details as of this moment but I can say that the project was and is of great importance to the company so it really was an honor to be the project manager for this project.

Apart from the weekly meetings with the co-founder to report the current status of the project and some shorter meetings with other people who's work this project might affect, I alone was responsible for all parts of the project. I learned more during this summer than I thought possible and being in charge of the entire structure of the project, both the front- and backend of the application and the all the design felt extremely rewarding. Now that the project is done I can not just say that I was a part of it, but actually that I alone was responsible for the end result. Other than the project, the office itself had a very nice atmosphere and the people working there were really nice and welcoming during my entire stay.

My trip to the United States was not all about work, of course. I made a few trips pretty early on to both San Francisco and Los Angeles. In San Francisco I got to experience the Pride Festival which was cool and different. All the people were happy and you could definitely feel a very warm atmosphere. When I was in Los Angeles I met up with a few friends from CETAC who also spent spent at least the summer here



in the United States and celebrated The Fourth of July. We had some good times and ended the day with a fireworks display at a crowded small beach. You could really feel like the people there were enjoying the holiday. The best trip though, which also without a doubt was the highlight of the trip to the United States was at the end of summer.

My father came to visit and we spent two days traveling along almost the entire Highway One, stopping to look at some amazing things along the way. Our end destination was Los Angeles where we spent another day cruising around in some well known neighborhoods like Beverly Hills and also walked on the Walk of

Fame. One whole day was spent in Universal Studios which was one of the coolest experiences I have ever had. We got VIP treatment and there was not a second without action or even waiting in line. Non stop fun, wonderful food and amazing attractions for almost ten hours!

All in all this summer has been a wonderful experience where I have learned so much and also had a lot of fun. There was some hard work during the year leading to this trip but it was more than worth it and I would recommend this to anyone that wants to try something new and exciting!

**Sebastian Bellevik**

# Life in New England

From a life of studies, coffee and little to no free time in Gothenburg to a life of work, coffee and slightly more free time in the US. My first two months have been very exciting and has laid the foundation for what will become a very rewarding year.



## HAMPUS FORSVALL

**Age:** 22

**Education:** B.Sc Software Engineering

**Best US memory:** When I had a full slab of ribs at Red Hot and Blue

**Duration of internship:** 12 months

## THE COMPANY

**Company:** Bison Co

**Location:** Boston MA

**Number of employees:** 12 months

**Web:** [www.bison.com](http://www.bison.com)



**M**y experience of the US from the time the plane touched the tarmac to this day has been overwhelmingly positive. I'm living in Cambridge, part of the Greater Boston Area, together with my roommate Albin, another CETAC intern from Chalmers. We live a few blocks away from the MIT campus, a 30 minute walk from Harvard and a 15 minute subway ride from downtown Boston.

The apartment hunt was quite difficult. The main reason being that I arrived a bit out of sync when it comes to the

rental market, which is driven by the huge number of students who arrive in Boston each September, looking for housing. After emailing half of craigslist I finally got in contact with a realtor and I finally found the perfect apartment. The place is newly renovated and furnished which is a huge relief since we don't have to buy our own furniture. The location is great and, compared to Boston's insane housing market, the rent is reasonable.

There are multiple grocery stores in the area with one just a few blocks

away. There's also a nice market only 15 minutes away which is open during the weekend. That might not sound like a major thing but both vegetables and fruits are very expensive here and the prices at the market are quite a bit lower.

Also close to the apartment are a large quantity of amazing bars and restaurants with everything from the perfect brunch to a delicious late night snack. Cambridge is all around just an amazing place to live!

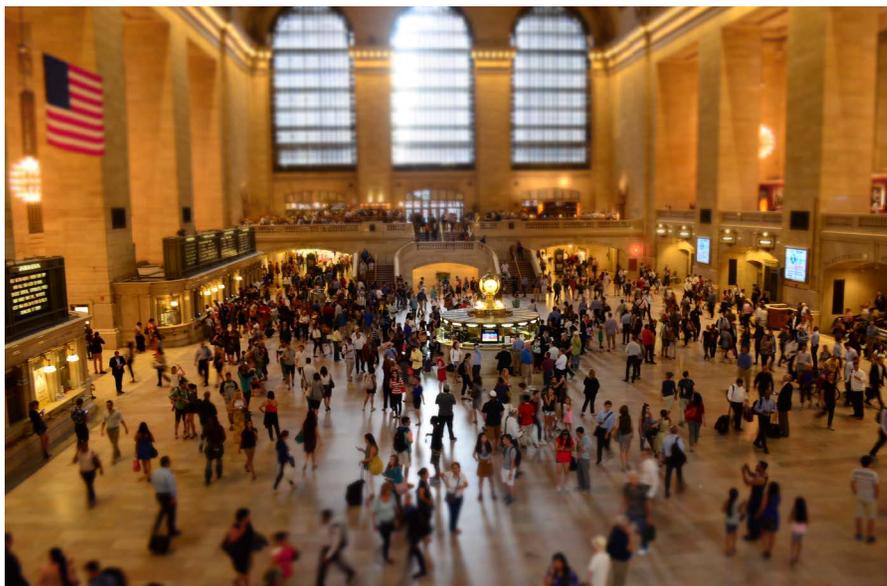
One thing that certainly strikes you after living in Boston for a while is the amount of students in the area. Boston hosts roughly 250 000 students and there are 108 institutions of higher education, including prestigious colleges and universities. This makes Boston a very youthful, diverse and generally more progressive city compared to other parts of the US.

Boston shares a lot of similarities with Gothenburg. There's an amazing food scene here with numerous "must visit" restaurants and bars, and also a large beer brewing community which makes it a fantastic place to try out amazing brews. Boston is also a bit of an event city, similar to Gothenburg, where there's always stuff going on. Also, as I mentioned before, Boston is both a university city and a progressive city, both of which can be applied to Gothenburg.

Most of my time is obviously spent doing what I came here to do, develop software. I work for a startup called BISON Co. We provide a platform for analyzing financial data from the private equity sector in a variety of different ways. The platform consists of an elaborate web application with a vast number of features that caters to both LP's, entities that are looking to invest in funds, and GP's, who manage these funds.

BISON is a place where you get the full startup experience. The BISON office offers a relaxed atmosphere, complete with a ping pong table. Everyone are very welcoming, nice and smart and it wasn't long before I felt just like any other employee at the company, I'm treated just like a full time employee rather than an intern.

My job consists of full stack development, meaning both front



and back end. My daily tasks are challenging and fun! I get to work on meaningful features that are utilized by the end user which is very exciting. Since we're such a small company, only four developers, you get to experience everything that goes on in a typical startup which is very exciting.

I've also enjoyed some, although unfortunately quite brief, exploring outside of Boston. There are plenty of beautiful beaches just outside the city and since the temperature often rises above 30 °C in the summer that's certainly a relief. Apart from the beaches, New England has a lot to offer when it comes to nature. There are plenty of mountains to climb and

forests to explore. The sceneries are supposedly the most beautiful during the fall which is, partly, why I've saved those trips for later in the year.

I also went to New York with my girlfriend which was just an amazing trip. We ate fantastic food, watched a great show, walked more in 4 days than I've ever done in my life and just had an all around amazing time. Also, New York is just a few hours away which is one of the many benefits of living in Boston.

**Hampus Forsvall**



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# 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.



## LOTTA BERGBOM

**Age:** 23

**Education:** B.Sc Engineering Physics

**Best US memory:** Biking down the hills to Muir Woods

**Duration of internship:** 12 months

## THE COMPANY

**Company:** Rapiscan Laboratories

**Location:** Sunnyvale, CA

**Number of employees:** 50 (2000 global)

**Web:** [www.rapiscansystems.com](http://www.rapiscansystems.com)



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 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 that I could ever dream of. From work and travelling 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**

# Data Mining the Music Industry

When I started my studies at Chalmers, I could not imagine that three years in the engineering physics program would lead to an internship at a tech startup company within the music industry. But for some reason, those years have turned out to be a great preparation!



## JOHAN BJÖRK

**Age:** 22

**Education:** B.Sc Engineering Physics

**Best US memory:** Reaching the summit of Clouds Rest

**Duration of internship:** 12 months

## THE COMPANY

**Company:** BandPage

**Location:** San Francisco, CA

**Number of employees:** Around 40

**Web:** [www.bandpage.com](http://www.bandpage.com)

It was the beginning of June when it was time for me to pack my bags, switch the rainy Gothenburg for the foggy San Francisco to start my American adventure and also my internship at BandPage. I was both nervous and excited when the plane took off from Arlanda airport and it felt kind of like I was going on a roller coaster ride where almost anything could happen during the course. That was also very much the same feeling I had when I first stepped into the BandPage office.

BandPage is a startup company, with the idea to work as a central platform for musicians to distribute their biography, merchandise, events etc. The content which an artist put

on their BandPage is distributed to all other partner platforms, such as Spotify, Youtube, SoundCloud and many more. In short, BandPage helps musicians to market themselves, and saves them a lot of work at the same time!

This new business approach has had a great payoff so far for the company, and during my first months as an intern, I have seen the company constantly making progress. During the month of July, we passed one million clicks leading to people visiting our partner bands' stores, which was a big milestone for the company. So, it was decided that we should grasp this moment to celebrate, and the entire office went down to a local bar



that evening where our CEO ordered beers to all the employees.

The achievement of one million clicks is a good example of how working at a startup like this is a far more different experience than a common 9 to 5 job. There is an exciting mindset in the office to always reach new goals, and part of doing that is to make sure that the employees enjoy their workplace. The office feels more like a nice hangout place than just a bunch of

cubicles, which makes it easy and fun to put in some extra hours of work at the end of the day.

Because of BandPage being in the music business, music plays a huge role in the office. There is a constant stream of great songs playing from a queue where you are free to add your favorite tunes and during the past month I have discovered a lot of new great music. And if you feel like composing some music of your own after work, there is a jam room in the basement. Besides from all the great music at work, the company also has its own chef, who cooks both breakfast and delicious healthy lunches for us every day. This is a very comfortable perk of working at BandPage, and I can't say that I miss eating microwave cooked lunch boxes back home in school.

So what exactly am I doing at this music startup then? Well, my job title is Data Engineer, and generally speaking it means that I get to handle the huge sets of incoming data from all kinds of sources, and try to make the data useful and easy to understand. Many of my projects so far has been about taking the data we collect from our users, and try to turn this data into useful information via tables and visualizations. There is a great variety in which type of data I get to handle, and so far I have done everything from delivering visualizations to the company's business side, to handling information about the artists' merchandise that we help our partners selling. I do a lot of Java programming to assemble the data from the right sources, and I use a lot of SQL queries to create the tables I need in order to provide the right information.

Even though my work has nothing to do with physics, I feel that my education has prepared me well for this type of work. The common challenge is to determine what kind of data is needed and how to gather



it, but now I'm mostly recording click records and other stuff now, rather than measuring radioactive decay or some other physical phenomenon.

Living in San Francisco and California, there are lots of stuff to do besides working. During my first months I have experienced both the 4th of July celebration, as well as the annual Pride parade which was extra special this year because of the Supreme Court decision to legalize gay marriage in all U.S. states. San Francisco is known for being a very LGBT friendly city and the celebrations did not seem to have an ending.

In addition to all the city experiences, I have together with a couple of other CETAC members been exploring the wonderful nature and surroundings

California has to offer. One weekend we went to Muir Woods that is a national park with lots of huge redwood trees. We have also been to Yosemite National Park, hiking among the great mountains and valleys. It was a pretty awesome experience, and quite an experience to reach the summit of Clouds Rest, at 9000 ft. altitude.

So far, this internship has been a fantastic experience for me, and I am enjoying every single day of it. I would like to encourage anyone that has the chance to grasp an opportunity like this to take it, because it will almost surely be a great ride.

**Johan Björk**

# Exciting adventures in Boston

The path to America was long and hard but finally I had arrived to Boston as a software developer at Protobrand and it felt great!



## ALBIN KARLSSON

**Age:** 23

**Education:** M.Sc Applied Physics

**Best US memory:** Baseball match with the office at Fenway arena

**Duration of internship:** 12 months

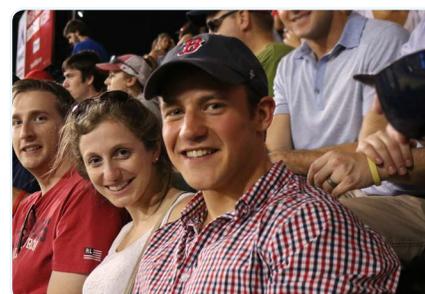
## THE COMPANY

**Company:** Protobrand

**Location:** Boston, MA

**Number of employees:** 8

**Web:** [www.protobrand.com](http://www.protobrand.com)



**M**y journey to the U.S. started out a bit tough. To start with I did not get my internship until early June which meant that if everything would have gone smoothly with getting a visa I would in best of cases be able to arrive to the united states early July. Getting my Visa would however prove to be quite cumbersome. Transactions got interrupted, the embassy had technical difficulties and could not provide any visas and when I finally succeeded booking an appointment at the embassy it turned out that because of the earlier delays I had preceded my internship start date which resulted in further delays. I finally received the visa one month after the (admittedly a bit optimistic) initially planned date.

The flight itself was no better since

I had to check in both luggage and carry-on because they had crammed the flight full of passengers and apparently did not have enough storage room for it onboard the plane. At Boston I discovered that the airline had lost my luggage which meant that I arrived to the U.S. with nothing more than what I was wearing along with my phone, wallet and computer. Luckily for me, since it had taken me so long to get here, Hampus (who is also on an internship in Boston) had succeeded in finding an apartment which made everything a lot easier. Two days later I started working at Protobrands office in 560 Harrison Avenue, Boston MA.

Protobrand is a growing company and operates in the fields of market research, branding and strategy

and helping out major brands with positioning development, positioning testing, product innovation, segmentation, shopper experience, communication testing and brand tracking to list some of them, and they do so by, compared to other similar companies, using a rather unusual research technique. The idea is that you, as a participant of a survey, get to answer questions in the form of images that are metaphors for feelings. Through this, as it was for me, rather unusual survey they can get a more truthful reflection of the participants thoughts and feelings

and they have so far been reaching quite impressive customers as Bank of America, Toyota, Samsung, Disney and many more. So what is it that I do at Protobrand? I have studied Physics and Applied Physics at Chalmers University of Technology and have never worked with branding and marketing research. In order to create their survey, Protobrand uses a web platform, named meta4insight, and this is where I come in. So far Protobrand have leased all web development to a third party company and have up until now not had any meta4insight related production positioned at the office. As they have grown they feel that they need to have some kind of internal understanding of what is going on with the platform and that an intern would be a suitable first step, hence me. My work has so far mostly consisted of working with the front end, implementing a new layout design and getting an understanding of the platform but in the end I will be poking around with everything there is to the platform.

The fact that I am the first one at Protobrand to work with meta4insight has its pros and cons. Most importantly it really feels like you are making a difference and have responsibilities instead of being just another brick in the wall so that is really exciting. But since there is no one at the office that I can ask for help, and all the contact to the third party company is through forum-messages, it sometimes take a lot of time before you get responses so I have to plan ahead and see to that I always have something to do even if I get stuck with something.

So that covers what it is I do at Protobrand but what is Protobrand like? Protobrand consists of eight really joyful persons working full time at the office and they usually have three to five interns (apart from me) that usually take an internship during the periods summer, fall or autumn which means that there will be a lot



of different people at the office even though it is just a startup company. The office looks really great and to my great relief it does not at all look like an endless rows of cubicles but instead everyone works in the same well lit room with a constant flow of (mostly) good music. When you are in need of some privacy you get to use either the conference room or one of four smaller rooms that fit one to two people. A typical workday starts at 8:30am and ends at 5pm with the (so far) obligatory doughnuts or other sweets on Fridays. There is also a lot of activities beside work such as watching baseball which is something that I would recommend anyone visiting Boston to do, watch the Red Sox at Fenway arena.

Apart from working I have of course also been exploring the city. I have so far mostly only had time for classical touring, while at the same time trying to settle in at my new apartment. I have also walked around a lot, just trying to get a feeling of the city to be able to find my way without having to use a map. One of the best things about Boston is that it feels like a cozy “small” big city and you can get wherever you want by walking. I had heard a lot about the inconvenience of not having a car in the United States but so far I have managed just fine without one and I might even go so far to say that it even would be a burden to have one, at least in the city. If you on the other hand would like to travel

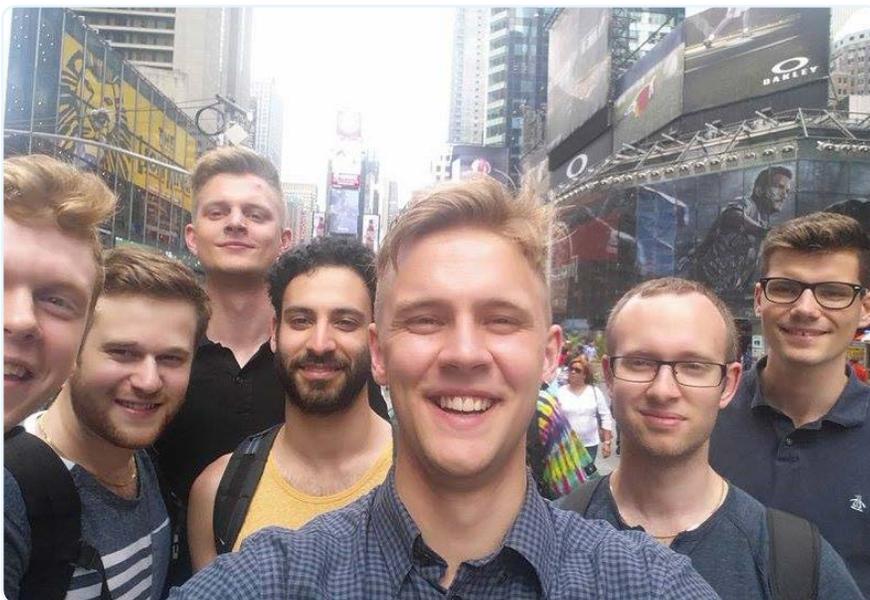


outside the city it might be nice but in that case I will just rent a car. There is also a perfectly fine subway network (“the T”) which makes it easy to navigate around the city even though it is very old and a bit slow. I used to take the T to the office which took me about one hour, after one month I tried walking all the way and it took me 50 minutes so it could maybe work a bit faster. But it does not matter to me anymore since I recently bought a bike and after a couple of trips it feels like I will survive, and save a lot of time taking the bike to work instead of the T.

**Albin Karlsson**

# L.A. Vida Loca!

With a full tank of gas and a clear-blue sky I am right in this moment driving towards Santa Barbara where I will spend my last couple of days in the states together with my girlfriend. What a summer, thinking back of the CETAC year I can now say with confidence that it has been one of the most valuable experiences in my life. So far.



## TOBIAS TIKKA

**Age:** 23

**Education:** B.Sc Software Engineering

**Best US memory:** Eating burritos

**Duration of internship:** 3 months

## THE COMPANY

**Company:** Norris Comprehensive Cancer Center

**Location:** Los Angeles, CA

**Number of employees:** Approx. 16 000

**Web:** [www.uscnorriscancer.usc.edu](http://www.uscnorriscancer.usc.edu)

The day I arrived in Los Angeles was a cloudy and gloomy day, Gothenburg 2.0 if you may. I started walking out of the airport somewhat disappointed of the weather, this wasn't exactly the sunny and warm California weather I had been promised. My mood quickly changed thirty minutes later when the sky cleared up, I have barely seen a cloud since that day. The weather app on my smartphone has only served the purpose of being decoration during the last couple of months, no need to check it that is. My first week in Los Angeles was

spent trying to get around Los Angeles using public transit, which was an experience to say the least. I took the bus from Union Station in downtown to Venice beach one of my first days in LA. Big mistake since it took me two hours, it would have been a quicker ride to take the flight from Gothenburg to London. I will never speak a bad word about Västtrafik in Gothenburg again.

Not long after I got here I flew up to San Fransisco one weekend together with my friends Hampus and Rasmus, and we picked up my fantastic

Pontiac Grand AM that quickly became my best friend. This car has during the summer taken me and my friends closely to 4000 miles without complaining once. It was not without tears that I sold it last week.

There is so much to love with Los Angeles, even though this city is not for everyone. It was for example not as easy to find a permanent place to stay as I originally thought for example. I spent some time in the beginning trying to find an apartment through Craigslist, but after a while I just accepted that I would not

find anything reasonable that was both affordable and close to either the beach or work. My summer has therefore been spent at a total of eight different apartments in Los Angeles, and then I am not counting the places I have stayed at in other cities. I loved this experience since I got to meet so many different people and see many different places of the town that I probably would not have been to if I had stayed at the same place.

I would never dream of living here without a car, but as long as you like outdoor activities and learn how to beat morning traffic you will love it here. My personal favorite must definitely be the surfing. Since most of my time here has been spent living by the beach this has led to countless hours in the water. It has also become a tradition to eat burritos at our favorite Mexican restaurant Pepe's Tacos after each surf session, I have probably eaten more burritos this summer than I have spent days in Los Angeles.

And now to business: during the summer I have worked at the Department of Preventive Medicine at Norris Comprehensive Cancer Research Center, University of Southern California. As University of Southern California put a great effort into genetic cancer research and generates large quantities of data, there is a need for good software to accompany its progression. My task was to develop a Java and Python based pipeline that will be used for analyzing and plotting sample DNA data to be able to find relationships between DNA methylation and cancer. Finding sequence variation within and between these samples is fairly straightforward; distinguishing what part of that variation is real and assigning the right genotypes to them is where the challenge lies. The variant discovery, genotyping and filtering workflows and protocols used in the



pipeline were developed to help the user choose the parameters that are most appropriate for a given dataset and guides the user through the necessary steps to produce a variant callset that you can trust. It was a very interesting project, and I really learned a lot as I was developing the pipeline from scratch.

My time here in California has without a doubt been one of the best experiences of my life so far, and it would not surprise me if I am back again in a near future. It will however be nice to go back to Sweden and see some familiar faces and maybe a cloud or two. This fall will offer a lot of exciting adventures both at

Spotify, where I currently work, and at Chalmers School of Entrepreneurship, so I am not too concerned about going back to Gothenburg again.

Thanks for everything Los Angeles, next time I am around I hope you make me a rockstar!

**Tobias Tikka**

# Awesome sauce just hit San Diego. Watch out everybody!

It only took one day in the USA for me to fall in love with San Diego and California. Thinking that I would be here for a whole while working with big data as a software engineer I could not believe my luck.



## CARL JANSSON

**Age:** 23

**Education:** M.Sc Information Technology

**Best US memory:** Bicycling over the golden gate

**Duration of internship:** 12 months

## THE COMPANY

**Company:** Anametrix, an Ensignten company

**Location:** San Diego, CA

**Number of employees:** San Diego 40, World 300

**Web:** [www.delphix.com](http://www.delphix.com)



But my trip did not start out that great. My plane was 10 hours late by the time I left Sweden, delaying my arrival in San Diego until a quarter past three at night. When I woke up that first morning I was jetlagged, tired, and full of doubt, but after going outside in Pacific Beach I quickly gained new confidence. The area where I spent my first night, and where I subsequently decided to continue to live, is in lack of other words, awesome.

northwestern part of San Diego right next to the ocean. Plenty of palm trees and the flourishing tourist trade makes it feel like living at a vacation rental and, with the local climate, spending time in the ocean or relaxing in the sun are both equally satisfying. While the sun is hot there is usually a pleasant breeze making the days perfect during a major part of the year.

Living in PB I have of course made some attempts to surf. Based on my

experience, I have concluded this is NOT the ideal pastime for me, but I have still spent far too much time spent at the beach.

The people here are also nice and the

Pacific Beach is located in the

atmosphere is very relaxed. There are plenty of pubs and interesting hole-in-the-wall places among beach hangouts. But people looking for the club scene tend to go downtown.

Another great thing about living in the U.S. is the variety of restaurants and fast food available. The close proximity to Mexico ensures that I have easy access to some of the best burritos or tacos imaginable and my favorite hamburger chain, 5-guys burgers and fries, has a location just a couple of minutes' walk from my apartment. There is, of course, also Indian, Chinese, Japanese, French, etc.

The U.S. is a country of immigrants which is noticeable in the food scene. But the main reason why I came to the U.S. is, of course, my internship. Working as a software engineer has proven to be interesting and every day brings new challenges. What I work on primarily is how to fetch data from external sources and how to process the data in our front-end. This involves investigations, bug fixing, feature requests, and testing.

The biggest change I have done so far is a refactoring of how data is deleted from our system. When I started my internship 3 months ago the company had just transitioned to SCRUM and in the last two weeks we made the change to Git from SVN. I am happy to be part of this and to be able to influence the company's future direction. Anamatrix is evolving and the attitude in the office is positive. The people at the company are a good mix of nationalities with varying degrees of experience and together we have a considerable knowledge pool. If there is something I do not know there is typically someone close by with the necessary knowledge and a willingness to share.

The worst thing about San Diego is the traffic. While nowhere near as crazy as Los Angeles, rush hour in



San Diego is no joke. People start to go home from work around 4 and the roads are crammed until around 7. This along with the nonexistent public transportation means that I usually arrive at work with my trusty Jaguar a bit before 10 and I leave around 7. Luckily San Diego is a major city and there is always something going on here. So keeping late hours is in no way a problem.

Living in California is definitely a blast and there is a lot to do. Whether it is visiting Sea World for their shows, a weekend trip to Los Angeles for burgers at the Counter and walking along Venice Beach, or hiking in the

countryside to see nature, you are sure to be fascinated and amazed at what you see. The best memory I have made so far is when we did a road trip to San Francisco and spent 3 days there just seeing the city and experiencing the sights. But there is still plenty I want to do while in San Diego and in the United States. Yosemite, highway one, Las Vegas, and the Grand Canyon are but a few of the places I hope to go. There is an amazing year ahead for me.

**Carl Jansson**

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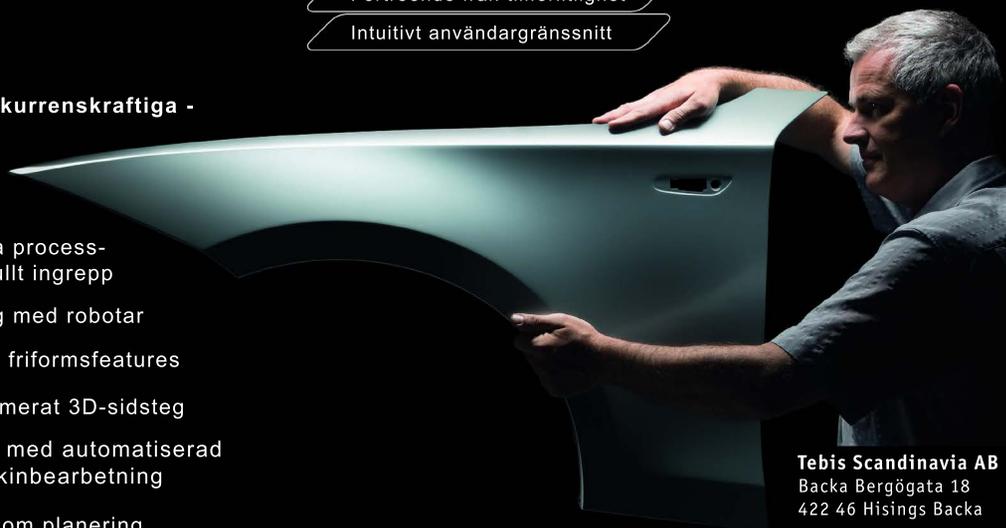
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# Murrica' for three months

It's June 4th, 2015 and I'm impatiently checking the time on my wrist watch as I'm writing my last exam before the summer. I try to put my focus back on the task that stands between me and what could be my biggest adventure so far, but it's nearly impossible. And for good reasons. In less than two days I'm going to be more than 8500 km away, in sunny San Francisco, California.



A couple of days later, after having done my first day at Delphix, I went to my new home in Oakland with a smile on my face. I had been a bit nervous before entering the office for the first time, but that feeling quickly disappeared as I got introduced to everybody and got to know a little bit more about what my summer at Delphix roughly was going to look like.

First of all, you could really tell that Delphix had had interns before. They had three bigger projects ready for me

to pick from at day one, and all of them were interesting in one way or another. After I had chosen a project, I got an introduction of the existing code base lasting about two days. Then I dug into the project itself, and I have been working on it since then.

Delphix is a software company with headquarters in Menlo Park, an office in San Francisco and another one in Boston. They build software that lets you make virtual copies of databases, filesystems and applications in a very fast and storage efficient manner. This

## SIMON PERSSON

**Age:** 23

**Education:** M.Sc Information Technology

**Best US memory:** Sout lake tahoe

**Duration of internship:** 3 months

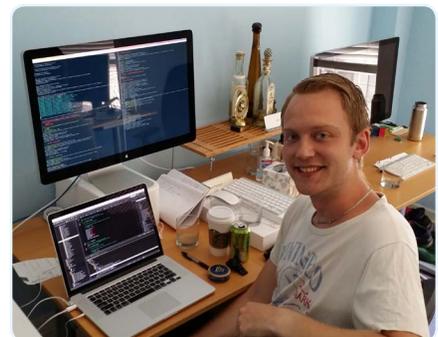
## THE COMPANY

**Company:** Delphix

**Location:** San Francisco, CA

**Number of employees:** Around 350

**Web:** [www.delphix.com](http://www.delphix.com)



can be used by other companies to make softwate testing, development of new features and other similar tasks less time-consuming and less costly.

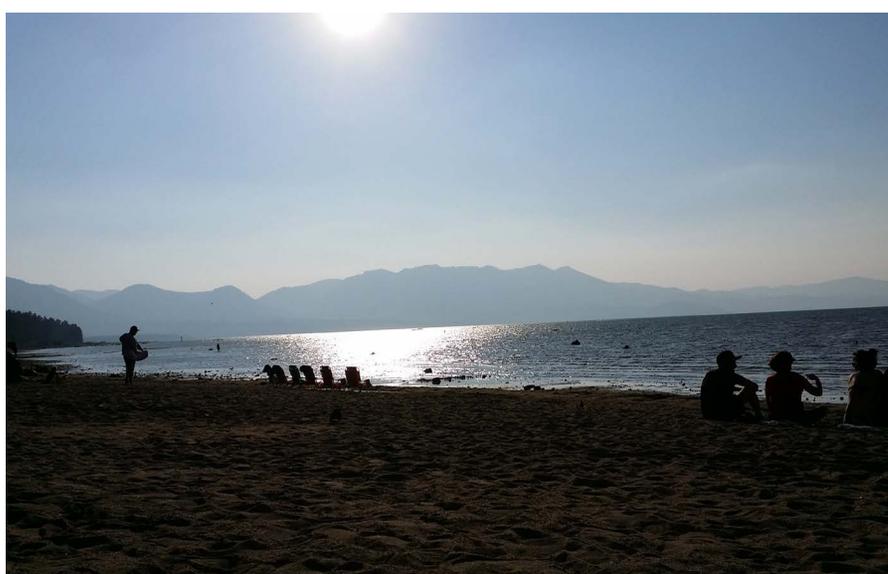
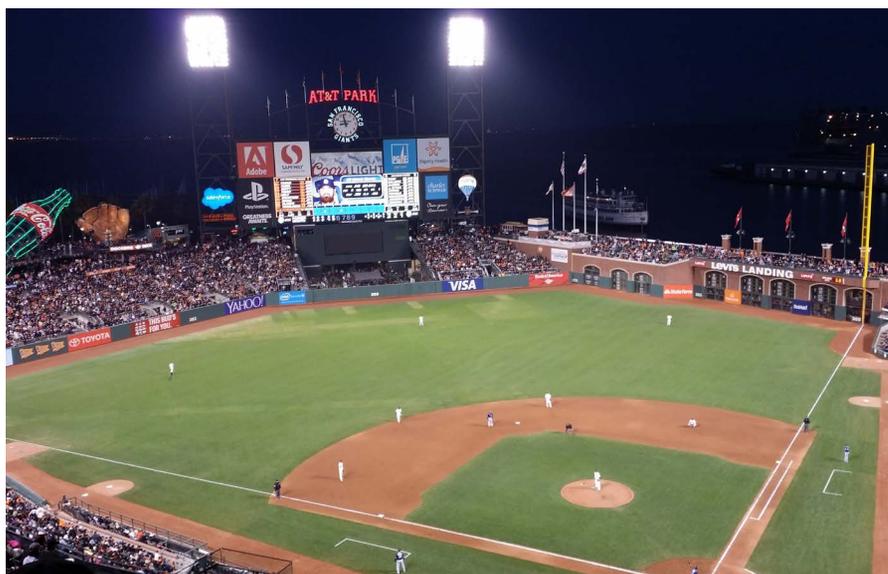
The atmosphere at Delphix is very calm and laid-back. The majority of the time everyone just sits by their work station focusing on the task they

are working on at the moment. Things become more social during lunch and similar breaks, with discussions ranging between everything from what order to watch the Star Wars movies in, to why some of the latest test runs of the software might have failed.

There has been some pretty awesome company events during the summer. I got to watch my first Giants baseball game, try out wall climbing and Delphix got its three hundred employee during the first month of my internship, so they arranged a party to celebrate the occasion. The party was held on a boat, cruising between the Golden Gate bridge and Treasure Island, offering plentiful of beautiful scenery, good food and mingle.

Of course, not everything has been about work this summer. I've had a good amount of time to explore my surroundings, and even though San Francisco is such a beautiful and active city, the best experiences I have had this summer have usually been outside of the city. My girlfriend came and visited me for two weeks, and during our first weekend together we went to South Lake Tahoe. It is a four hour drive from Oakland, so I left my job early one Friday, rented a car and went over there with her.

We lived at a hotel by the lake with over 19 acres of private beach, located very close to the border of Nevada. Since casinos are allowed in Nevada, but not in California, the Nevada side of South Lake Tahoe was pretty much all casinos. The Californian side, however, was filled with hiking trails and those cozy cabins you get to see in all those typical American horror movies about young college kids taking "the wrong turn" when on a road trip. The forest itself actually reminded me somewhat of Sweden, but the landscape there were much more mountainous. That, in combination with the beautiful, soothing lake in the middle of everything, made for some very nice



memories to bring back home.

The thing I might like the most about the way people are here is the openness. For example, it is not uncommon to see total strangers start a sparkling conversation with each other during their commute to work. That is, at least from my experience, something that is pretty uncommon back home in Sweden. Also, in general people seem to be very interested in both hearing about other people's stories as well as sharing their own. Everyone has something interesting to tell, especially if you are interested in tech.

At the time I am writing this, I have less than one week left on my internship. I just did a presentation for the company

about my summer project, and it felt very good to show them the outcome of what I have been spending my time working on this summer. The other day a coworker came up to me during a coffee run and told me he had been using the tool I built during my project, and that really made my day. To know that I have created something during my time at Delphix that might actually be useful for someone.

It is hard to believe how much you can learn in just three months if you are ready to try your luck in a place like this. I actually think I might have to come back here some day.

**Simon Persson**

# California Style Sheets

The melancholy of the ending summer is one of the most Swedish feelings. Swedish summer is short, and ends way too fast with the first smells of autumn in august. School is most often also about to start, also which puts a burden on the mind. I have felt these feeling for many years, but for the first time I am not - now I am in San Francisco, where people say non-natives lose track of months passing by from the weather not changing over seasons. I also won't be going back to school any time soon... Will this be the first endless summer?



## OSCAR NILSSON

**Age:** 22

**Education:** B.Sc Software Engineering-

**Best US memory:** When Flo-Rida stepped into the BandPage office

**Duration of internship:** 12 months

## THE COMPANY

**Company:** BandPage

**Location:** San Francisco, CA

**Number of employees:** Around 40

**Web:** [www.bandpage.com](http://www.bandpage.com)



**A**s a member of CETAC you probably have an ambition to go to the US, but during the year at Chalmers when you are a member of CETAC, going there probably feels very distant. This was the case for me. You definitely will hear about companies interested in your application, and you will think about if you would like the company and

position, and go on to fire away your polished CV in multiple directions, all while not thinking too much about it and keep focusing on your duties as a student at Chalmers.

Time went by, also did some interviews for a couple of these companies. Then one late evening I got that email. It was Tobias Tikka, one of CETACs

internship coordinators, who looped me in on an email conversation where a smaller startup company, known as BandPage, stated that they liked my application enough to give me an offer. From that day I remember my

life at Chalmers started fading into the background, all while the idea of me going to the US to work as a software engineer increasingly became all that occupied my mind.

BandPage is a startup, residing a short walk from South Park, in the neighborhood SOMA, San Francisco. Some say South Park is a ground zero of some sorts, when it comes to the world of software startups. Supposedly many final handshakes in crucial business deals between giants in the software industry have happened in this park, perhaps after a (lovely) burrito at Mexico au Parc.

Six years ago, BandPage started out as the primary way for bands to keep a presence online, by enabling transfers of band profiles from MySpace to Facebook. MySpace had just crashed and burned, and Facebook was quickly becoming the de facto social platform - this is how BandPage initially made a name for itself. Six years later, a lot have changed in both the music industry, and in social media. Currently BandPage's claim-to-fame is distribution of artist offers, such as merchandise, "meet and greets" and such, to all the different music platforms online.

I work on the frontend team, something I am very excited about. This means building out the software systems that mainly run in users web browsers, such as the BandPage editor, where artists go to enter all their info about events, offers and similar. I also work on the many frontend services that are part of the BandPage technology stack, which most often are servers running Node.js and JavaScript. After the first two months, me and a colleague took up a new project, to build a new subsystem from scratch for our internal teams. One ambition with this project is to build a future proof system that might be built upon in the future for new admin tools. Another goal is



also to build this tool using new cool web technologies, such as React.js, a framework built at Facebook. This is also lots of fun, but also challenging with less available learning resources and established paradigms.

Working in this environment with amazingly skilled colleagues, a large software platform, and in this fast paced industry, have been an amazing learning experience. You think you know a lot about software from three years at Chalmers, but there is still an endless amount to learn. Code Reviews is one of the best ways to get feedback and learn from teammates, and even though it felt a bit frightening at first, it turned out to be one of my favorite new things that I have learned about at BandPage. Getting your code reviewed by a senior engineer always results in some very valuable learnings about code style, scalability issues and more.

Another super cool part about BandPage is how everyone at the company knows how to have a good time. We socialize over the free company lunch at noon every day, and every wednesday we eat company dinner together, most often preceded with an all-hands meeting for some company-wide announcements. After work me and my team often grab a beer, and music related events and live acts are often on the agenda.



All-in-all, there is just so much to like about being here. There is also just so much cool stuff to do in California, from surfing, skiing and magnificent national parks, to the many urban environments - a year certainly will not be enough to explore it all. Initially, I also really thought I wanted to be here for the nice weather, and the strong tech and software-scene. This is certainly important to get a taste of as a Swede, but the diverse array of different cultures, and the welcoming social and attitude among people you meet is something equally cool about this place. I can wholeheartedly recommend all of this to you folk back at Chalmers - It is an unrivalled opportunity. Join CETAC!

**Oscar Nilsson**

# California dreamin'

So, here I am. Sitting at my porch here in Pacific Beach, San Diego about 200 meters from the Pacific Ocean and writing about my first two months. It has been two intense months. I have travelled around to Yosemite, Los Angeles, and Las Vegas. I've started to surf, do yoga and simply started living the southern California life, but mostly I've been working as a software engineer for the first time.



When I first got to San Diego I was pretty lucky since I could stay at the previous interns' sofa the first two weeks. They lived in a place called Pacific Beach. PB as it is called is a part of San Diego where a lot of young people and students live. I immediately liked it so I started looking for a place here straight away. I took my time and searched on Craigslist, which is the American version of Blocket, for a while until I found the place I wanted to stay. After a few showings I met up with a guy who was looking for a new roommate. We got along great and the place was just one block from the beach and one block from the bar strip. As you can understand I moved

in straight away.

I wanted to live with an American to really get into the American life, so finding my roommate, Awar, on Craigslist was great. He has introduced me to all of his friends and I recently went to Las Vegas with them to do it 'the American way'. Since I used to DJ a lot before moving here, Las Vegas was really fun with all the big nightclubs that have world class DJs playing every night. However, I don't know if we did it the American way, probably just the Las Vegas way which you might be able to relate to if you have seen the movie 'The Hangover'.

## PER THORESSON

**Age:** 23

**Education:** B.Sc Software Engineering

**Best US memory:** Las Vegas trip

**Duration of internship:** 6 months

## THE COMPANY

**Company:** Anamatrix, an Ensignen company

**Location:** San Diego, California

**Number of employees:** Around 350

**Web:** [www.anamatrix.com](http://www.anamatrix.com)



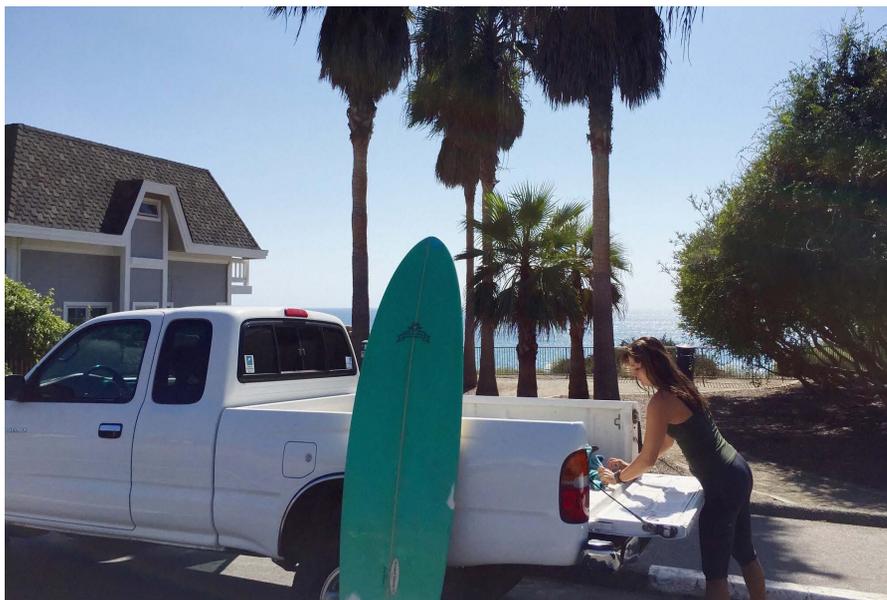
When I talk to my friends at home about how it is to live here what I usually say is that every weekend is like a vacation. The weeks have some weird way of flying by and I have already been here for two months, unreal. It almost feels like there is a weekend coming up all the time since life in PB is awesome. There are tons of restaurants and bars here which always have some sort of event going on. When I don't feel like doing

anything I just walk down to the beach. I can easily spend a whole day there: chilling, surfing, or hanging out with friends.

The company where I am an intern is called Anametrix. The company works with Big Data, which means collecting and analyzing big sets of data. The data we collect comes from different sources such as customers' internal data, their websites, and social media. After we have collected the data we analyze it and provide our customers with an easy way to create reports on which they can later base decisions. For example, we can collect data about a certain ad campaign a client is carrying out and they can then see how the campaign is working for them.

My role at Anametrix is as a software engineering intern on the platform development team. This means that I work a lot on the backend which handles the data that we collect from different sources. Already the first day I got an assignment and I got code pushed to production the first week. To be sent into action straight away was good since it forced me to really dive straight into the company's code base and get comfortable. Since then I have been working with everything from customer implementations to testing to resolving bugs and creating tools to help with deployment. As you can tell the work is pretty varied and I like it a lot.

The workdays are pretty flexible. There is a daily standup at 10.15 and that is the only time that you actually need to be at the office. What I usually do is go to the gym in the morning and then get to the office in time for the standup. The flexible work hours are pretty sweet since traffic sucks in the states. It is pretty insane, there can be 7 lanes at some places and even



then the traffic might stand completely still. Taking the car somewhere around 8 am or 5 pm is horrible so being able to come in and leave either a bit early or late is really valuable both because of traffic and because you can stay up late and go out for a Taco Tuesday or Hot Wings Wednesday.

The food here is amazing. There are so many different kinds from all over the world and since we are in southern California there are a lot of healthy alternatives, not just burgers (even though they are awesome). That is one of the things I reacted to after being here for a while. I had this image of Americans being not so tiny. California proved me wrong. Here it is almost considered weird to not work

out or be active in some way. A big factor in this is probably the weather. It is so nice that you actually want to be outside surfing, doing yoga, hiking, or whatever you like to do. Since I got here it has rained two times, in two months. Back home in Gothenburg I always had to check the weather reports to see if I would need to cover myself from top to toe because of the Gothenburg sideways rain. Here, I just put on a pair of shorts, a t-shirt, and some flip-flops. And yes, I can wear that to work too, pretty sweet.

**Per Thoreson**

# Monitoring the SAN shine with Virtual Instruments

After a ten hour flight I finally arrived at Oakland international Airport. Despite the fact that I did not plan anything before I got here, knowing that I was going to spend a year where I had just landed made me feel calmer than I had felt in a long time.



The flight was postponed meaning that my already late arrival time turned out even later. It was the first time I visited any state in the U.S and I did not have any idea of where to go or what to expect.

I ended up spending the next few days getting to know the area where I am now working, and settling down in my new apartment. San Jose, which is located south of San Francisco, is a beautiful city. However, the scenery is not the reason why most people travel here. The people who reside here come from different parts of the world and have different ethnic backgrounds, but most of them have one thing in

common - being interested in the latest technology. A great deal of the time people spend is invested in working. This makes the area a perfect workplace. The downside to this is that there is not much to do when you are not at work.

On June 17, I walked into the office of Virtual Instruments, a high-growth Silicon Valley technology company, as the website states. I was about to start my first internship and was as much nervous as I was excited. When I entered the building, I was greeted and got introduced to 3 other interns whom I was going to share office with. The nervous feeling did not last

## ADAM BRINKMAN

Age: 22

Education: B.Sc Engineering Physics

Best US memory: Surfing in Santa Cruz

Duration of internship: 12 months

## THE COMPANY

Company: Virtual Instruments

Location: San Jose, CA

Number of employees: 200

Web: [www.virtualinstruments.com](http://www.virtualinstruments.com)



for long.

A few days later, after setting up my development environment and getting comfortable in the office, I got to meet my mentor. He introduced me to the project which I now have been working on the last couple of weeks. I spent the first weeks learning about the company and things that I was going to work with. My mentor helped me to find learning material but I also

had to talk to many of the employees at the office in order to know what to do. This was a perfect start to my internship since I got to know the people working there.

At Virtual Instruments, I am doing scalability calculations for one of the products called Virtual Wisdom. This means I spend most of the time collecting and processing data, and has developed my own tools to do this. It's a project that requires knowledge about computers at a system level as well as higher level programming. My work is done very independently and my mentor helps me only when I ask for it. This means that I have to be creative to figure out my own solutions, which I appreciate.

One of the things that distinguishes tech companies from any other company is the perks that comes with the job. In addition to monthly beer bashes and a kitchen full of snacks, the company organizes really fun company-wide events and celebrations. During my first week, the company arranged three great events. Examples of such events are birthday celebrations, watching baseball games and short trips to cities nearby. A couple of weeks ago the company organized a trip to Santa Cruz Beach Boardwalk for all the interns.

The Boardwalk is one of the main attractions of Santa Cruz. However, the city is also famous for its great surf spots. For this reason, my friend and I went back the weekend after to try surfing for the first time. It turned out to be harder than I thought it would be and I spent most of the time chasing waves and paddling back out from the beach. I will most certainly try it again some time and I am thinking of buying my own surfboard.

Other than surfing and participating in various company events, I have been traveling a lot. Recently I came back



from an amazing trip to Las Vegas and Grand Canyon. As you might have figured out by now, San Jose is really not known to be the place to be when you are not working. However, a few hours away by car in any direction will get you far enough to experience things that can be found on most people's bucket lists.

San Francisco is the most well known destination in the area close to San Jose. Even though the city is not enormous, it has more to see and to experience than many of the cities across the country. I still have a lot of things left to explore there.

Like any major decision, the choice to leave a great city and the well

followed path of studying was hard. I first planned to spend half a year in California, but I am happy to say that I accepted the offer to stay for a full year. I will be learning from bright people who truly love what they are doing, and I have already experienced things I will never forget. With the weather, the culture, and the Silicon Valley growth, California is a wonderful place to be today.

**Adam Brinkman**

# Surfin' USA

After a couple of months in Los Angeles the conclusion is that it rocks. The weather is amazing, the work is great and then there's the surf. All in all: good times.



## RASMUS ÅKERLUND

**Age:** 23

**Education:** M.Sc Engineering Physics

**Best US memory:** Surfing before work

**Duration of internship:** 12 months

## HAMPUS TORÉN

**Age:** 29

**Education:** M.Sc Engineering Physics

**Best US memory:** Bouldering at The Tramway on top of Mount San Jacinto

**Duration of internship:** 12 months

## THE COMPANY

**Company:** Tribogenics

**Location:** Los Angeles, CA

**Number of employees:** about 50

**Web:** [www.tribogenics.com](http://www.tribogenics.com)

Let's start from the beginning; what are two Swedes doing in LA? Well, we are working at a startup company called Tribogenics. Tribogenics is developing a brand new technology for producing X-rays. The mechanism behind this new type of X-ray source is static electricity and that is what set it apart from every other commercial alternative. X-rays are high energy photons, and

the fact that you can generate light, i.e photons, from static electricity by rubbing suitable materials together has been known for thousands of year. But until recently this has been little more than a curiosity, like the trick of making a balloon stick to the wall by rubbing it in your hair, or used as an example to illustrate the basics of electric charges and attraction in education. So this product is sort of a

world's first in turning static electricity into something useful, and it is really exciting to be part of this revolution in X-ray technology.

All right, but what do we actually do? We are employed as "R&D interns", which in our case means that we work with testing the product and the theories behind it with the hope to generate knowledge and

ideas that can lead to improvements in its performance. Basically we are checking how many X-rays are coming out of the X-ray source and trying to figure out how to increase that number. Of course we are not the only people doing this at the company; we are part of a whole R&D team of about 10 people just working on the source itself. Then there is also another team of engineers working with the product that the X-ray source goes into, which is a handheld XRF device, and there is all the sales and marketing staff as well.

Working at startup company has been a great experience so far. With a smaller organisation you get closer to the action and gain valuable insight into the different aspects of running a successful business. For instance, even though we are formally part of the Research and Development team, we have also helped out with production and quality control. This flexibility of a newer organisation gives us many opportunities to pick up different skills and expand our knowledge in a variety of areas. One thing that has been really fun to learn is the programming language Python which we use for analyzing the data from the experiments we perform. Both of us has mainly been using Java before and getting into the world of Python has been super interesting. Python is a lot less verbose than Java, which typically means you need to write fewer lines of code to do the same things, but it can also take some time getting used to since it is by nature less explicit.

Another thing that is different is the philosophy on what is considered best practice. For instance, when writing code in Python, you are supposed to trust the user, which is why there is no private key word in Python. This is in stark contrast to what we been taught when using Java, where a lot of effort



is put into making sure that your code cannot be messed with.

Other than work there is a great many things to do in Los Angeles and California. One of the favorite past times over here is surfing. We have been surfing a lot and since we work from 9am to 6pm we can go surfing before work, which definitely leaves you with a great vibe for the rest of the day. Surfing is quite popular here, you see everyone from 10-year-old kids to weathered old men in their 70s out there, which results in the beaches being a little too crowded sometimes.

The nice thing about it though is that we do have several colleagues that surf as well, and we sometimes go surfing together. It has even been talk about going surfing at the lunch break, which really goes to show the kind of energetic and open minded spirit there is at the company.

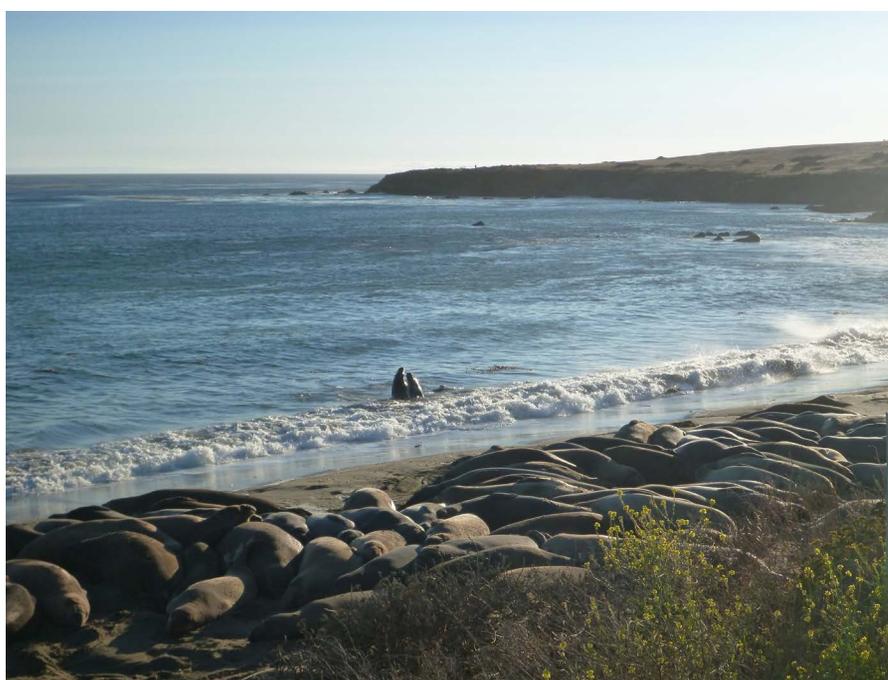
(Hampus) After surfing for a couple a weeks with Rasmus I got an itch in my fingers for some rock. As luck would have it our colleague Jonathan was planning a trip to Palm Springs

for some bouldering with his friend Chris and I had the opportunity to tag along. I did not hesitate for a second and that trip was a lot more than I could hope for.

Palm Springs is located in a valley in the middle of a desert but right next to it lies the 2600 meter high mountain San Jacinto and that was where we were headed. When you get to the base of the mountain you board an aerial tramway that takes you to the top and on that trip you get to experience a tremendous change in climate. Down in the valley the temperature was over 40 degrees Celsius but at the top it was a comfortable 21 degrees Celsius, perfect for climbing. Walking around at the top of Mount San Jacinto you can not imagine that you are still in a desert, there are huge trees all around and a rich wildlife with squirrels and all kinds of birds all over the place. But most importantly there are a lot of great boulders scattered around a vast area called “The Tramway”.

We climbed for a full day on several different boulders and for the climbers out there I would recommend the route “Standing on the Head of the Dragon”, a spectacular V4. With sore fingers and a tank top sunburn the sun finally started to settle and we went back to LA after a superb bouldering trip.

(Rasmus) Living in the USA, road trips are almost mandatory and the coolest drive so far was taking the legendary Highway 1 through Big Sur. This was on our way back from the San Francisco area where we had spent the weekend during the San Francisco Pride Festival. This particular year the spirit was especially high since it was the very same week the Supreme Court ruled gay-marriage legal. The



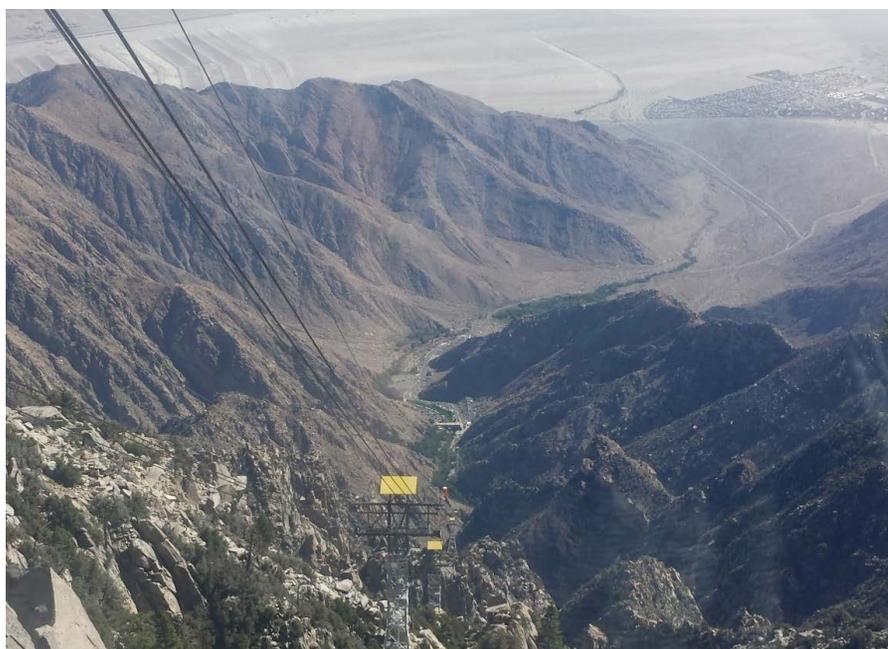
city was really buzzing with people, in all sorts of spectacular outfits, and the rainbow flags were everywhere.

Leaving the celebratory atmosphere we got into Tobias car, a Pontiac Grand Am, and embarked on the six hour journey back to LA. Originally the plan was taking the Interstate 5 freeway, which would have been a lot faster, but in the end the detour via Highway 1 was definitely worth our time. Highway 1, also known as the Pacific Coast Highway, stretches along the Californian coast and through

some of the less populated areas in California. The drive offers amazing scenery, especially in Big Sur, where the road closely follows the dramatic coastline with steep cliffs and narrow bridges. Absolutely beautiful. We also got the chance to see wild dolphins playing around in the water below one of the vista points we stopped at, they were even doing jumps and spins. Another, less energetic, animal we checked out on the way home was the sea elephants in Piedras Blancas.

(Rasmus) Although we have been on some amazing trips, we have spent most of our time in LA. The main impression of LA is that it is just so big! It can easily take one hour driving from one end of the town to the other, although this is partly because of the traffic situation being not ideal. The nice part of living in a city this big though is that it attracts people from many different backgrounds and cultures. One example of this can be seen in the great variety of food that is available, and often to a decent price. For instance, there is the First Fridays in Venice when, the first Friday of every month, food trucks from all over Los Angeles gather at Abbot Kinney Blvd for a food festival. The area is full of food trucks at every corner and people stand in line to get their favourite meal. Hampus tried some lobster from Cousins Maine Lobster and some burgers from Baby's Badass Burgers during his first visit there. Although very tasty, they do not reach the same level as our favourite food truck so far which is Kogi that serves a combination of Korean and Mexican food styles.

Another favourite is Pepe's Tacos, a tiny place located just a few blocks away from work. They serve the best burrito we had so far and one week we went there for five days in a row. It is also inevitable eating a lot of burgers when living in the US, and two big names here that we never heard of back home are Five Guys and In'n'out. Five Guys, although a bit more pricy than In'n'out, offers great burgers including all you can eat peanuts, which is great of course. But the love every Californians expresses when talking about In'n'out is unmatched and even with only three items on their menu In'n'out is by far the most popular burger joint here in California. The number one burgers we had so far, though, was served at



Standing Room in Hermosa beach, if you go there you should definitely try the Napoleon burger with truffle fries!

Life here in the US is great, and we are only just getting started. We will keep surfing in the morning before work, we will keep exploring LA and its surroundings and we will keep doing our best in contributing to the development of this brand new x-ray

technology. The best part is that we still have almost a whole year ahead of us and if you want to know more about our future adventures you can follow us on our blogs at [www.cetac.se](http://www.cetac.se).

**Hampus Torén &  
Rasmus Åkerlund**



# *CETAC 2015 in Stockholm*



**O**n an early September morning all of the members of CETAC 2015 gathered at the train station in Gothenburg. It was time for the annual kickoff journey to our capital city Stockholm. During two days we would meet with potential partners of CETAC and together set up a plan for all the work for the year in front of us.

Despite the early morning the energy and spirit on the train trip was good. People were planning and preparing for their meetings with the different companies. Together

in groups we discussed how to pitch CETAC and how to make the companies in Stockholm interested in attracting engineering students from the front side of Sweden.

Well at our destination some groups went directly to their meetings while some of us went to check in at our accommodation at Skeppsholmen in the center of Stockholm. With us, we brought boxes of smoking new copies of this year's Trainee Report. Reading the stories

from our predecessors in CETAC living and working in the states really got everyone excited and motivated for the year we had in front of us before being there ourselves next summer.

In addition to meeting potential partners of CETAC the trip to Stockholm also including career planning with the Internship Coordinators in CETAC. Before the journey everyone had updated their resumes and cover letters. Together with the Internship Coordinators everyone then talked about their plans, ambitions and goals for what kind of internship we were pursuing in the land of the free. This was the first small step on the journey to land an internship. Hopefully all of the dreams and ambitions that existed then were met now, almost a year later when we live in different places in the US.

Not to forget that this was a kick off trip we also had to get to know each other better and have some fun. On friday we went to an After Work gathering of the Swedish startup Truecaller, which was the beginning of a great evening. They had really cool offices, and we got offered drinks and pizza. On saturday we also visited the offices of Spotify, for a round tour.

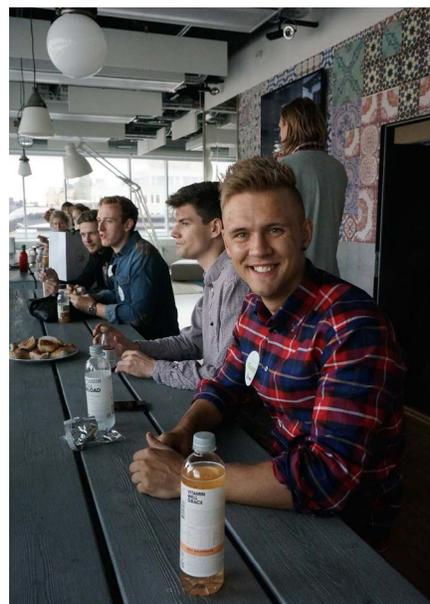
To sum up, the journey to Stockholm was successful and pleasant experience. We got some good deals done and valuable contacts to continue to work on. This was the first steps that took us everyone where we are today which you could read about in the rest of the Trainee Report.

## CETAC 2015 STOCKHOLM TOP 5

1. Join random after work of IT-startup
2. Offer companies home baked cinnamon buns in exchange for a meeting
3. Get a fancy hot dog in Kungsträdgården
4. Visit Spotify (Talk to one of the Street Team people!)
5. Hit a cheap dive bar and get to know each other!

*Text: Oscar Nilsson*

Foto: CETAC 2015 Facebook



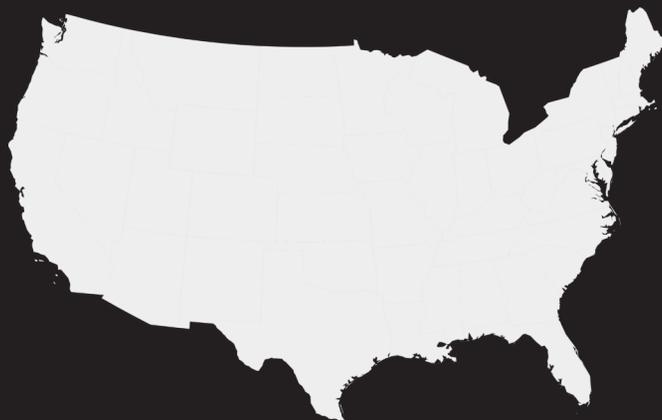
# CETAC *Alumni*

My own first contact with CETAC came the first year of the engineering physics program at Chalmers. I heard that it was possible to do an internship at NASA through CETAC without having to be born a genius or without having some extraordinary industry contacts. The dream started for me right then and there. Fast forward two years and I am in the midst of selling advertisements for the trainee report, working with my resume and it looks as if the dream is coming closer and maybe even come true. Fast forward another 6 months or so and I am actually there, checking in at NASA Goddard Space Flight Centre in the US and about to start working for NVI Inc. Wow, is the word I keep thinking to myself.

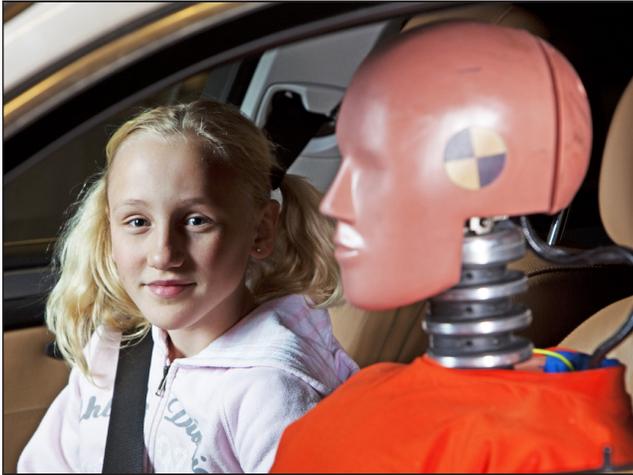
To me, the above is what CETAC is all about - it is a chance for us Chalmerists to pursue goals and dreams that we might have, and to get to experience a working culture other than our own. And to meet amazing people of course. Which leads me to the purpose of this text: the CETAC Alumni organization. The Alumni organization has existed since 2006 and it exists so that the valuable experiences that we have gained in North America can still come of use in other ways than just contributing to our engineering skills. That use might be utilizing the Alumni network when looking for a new position in our careers or simply sharing memories and ideas with another CETAC Alumni at a dinner meeting. The applications for the Alumni network are many but the main purpose is to be a social platform for former CETAC members.

With that said I invite all CETAC members to join CETAC Alumni after your time in North America! Hope to see you on our next get-together!

**Tobias Forsberg**  
*Chairman CETAC Alumni*



[www.cetacalumni.se](http://www.cetacalumni.se)



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Hållbara energilösningar i världsklass

# The Chairman Speaks

CETAC have been with me for almost two years now, since those dark Gothenburgian winter days of almost two years ago, when I decided to apply for a board position at the organisation.

Hearing the stories about people landing dream jobs in Silicon Valley sounded almost too good to be true - but as I write this, 19 long months later, I live in San Francisco and work for a energetic software startup known as BandPage.

Before I tell you how much fun I am having, we need to get one thing straight. This would not be possible without the amazing legacy of CETAC. Every year for the last 50 years (time to celebrate soon!), students from Chalmers have gone to the US via CETAC and told americans at tech companies (by action, and also a few words) how cool, hard-working and loyal Swedes from Chalmers are.

As a member of CETAC, you tap into this. It is an amazing opportunity to apply for highly qualified technical internships at companies that already have great experiences from working with people just like you.

The importance of these very personal relationships with companies, that CETAC have, cannot be understated. It is also something unique to Chalmers. Neither KTH nor LTH, or any other Swedish universities that I know of, have such organizations. People I have met from those universities here in the US confirm how unique and valuable this asset is - getting an opportunity to work in the US is not trivial. The last two Presidents of Chalmers,

Jan-Eric Sundgren and Karin Markides have also recognized this with their blessings, and I hope the same will go for newly appointed Stefan Bengtsson.

Engineering is deeply rooted in American culture, and it is undoubtedly a great place to spend some time if you are studying engineering. They run companies differently, and there is something raw, powerful here that make things happen if you have aspirations. CETAC also work with a wider variety of tech companies than you can find in Sweden, from small, well funded software startups like Bracket, to space engineering companies like NVI, who work with NASA. If these opportunities does not leave you convinced, CETAC also takes care of practical details such as working visa and insurance - details that are painstakingly hard to figure out on your own if you apply for an internship from Sweden.

Joining CETAC to spend a summer or a year over there is probably one of the cooler things you can do, and you probably should think long and hard about joining. If you are a student (past the first year) at F, E, IT, D or TM, you should keep your eyes open for the CETAC board appointment in early spring, or the member appointment in late spring. Studying at another program at Chalmers? Look no further than our sister organization USA-sip.

There are many people and organizations to thank for this. I want to give a shout out to the CETAC Alumni organization. They both ensure continuity for each CETAC-year, and also give each CETAC member who went to the US access to a valuable network of people from Chalmers who had the same ambition while studying. I also want to thank the American Scandinavian Foundation for yet another year of helping us out with our visas.

Most of all though, CETAC is carried forward by our members, and the board, who both support the organization during the year at Chalmers, and spread the word about us by being amazing humans and engineers while in the US. Thank you all for this.

**Oscar Nilsson**  
Chairman CETAC 2015

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# The American-Scandinavian Foundation

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The ASF is a publicly supported, non-profit organization housed in Scandinavia House, New York City, which serves as the Nordic Center in America. Our organization strives to promote international understanding and cross cultural exchange between the United States and the Nordic countries.

The Chalmers Engineering Trainee Appointment Committee (CETAC) and The American-Scandinavian Foundation began its fruitful relationship in 1980. Since then, the Foundation has provided visa sponsorship for Committee members studying electrical, electronic and computer engineering.

What is the Foundation's role you may ask? Well, the Foundation has been designated by the U.S. Government as an Exchange Visitor (J visa) program sponsor for on-the-job training. Any student who wants to work in the United States must have a visa and that is where we come in. The Foundation receives the student's application and the Form DS-7002 Training/Internship Placement Plan from the U.S. Firm. Once we make sure that the internship position is appropriate and meets program requirements, ASF issues the U.S. Government documents that make it possible for students to come into the United States and obtain this on-the-job experience and receive income. Once in the United States the students receive a meaningful internship and in turn provide the host firm with a highly motivated, skilled individual who is eager to learn and contribute to the particular company's growth. We at the ASF understand how much work and effort the members of the committee put into obtaining their assignments therefore we try to help in every way.

It is not only the professional growth you experience during your summer in the United States it is also your personal evolution. Year after year, students mention on their final reports how much they enjoyed themselves, how many friends they made and how many things and people they got to see and meet. It is fascinating to read about your personal and professional accomplishments during such a short time span. We anticipate this to be a natural consequence of this program and hope that the friendships you make last a lifetime.

It has been a great pleasure to work with this particular group because of the in nite energy and zeal they bring to the program. The positive feedback we continue to receive at the conclusion of a student's internship program is well worth the effort.

We at the American-Scandinavian Foundation wish you continued success in your future endeavors.

## **Tatiana Pashman**

Director of Internship & Training Programs

*The American-Scandinavian Foundation*

# Thank You

On behalf of the board and members of CETAC 2015, we would like to thank all our corporate partners and other contributors that made this project a reality.

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## **Index of Avertisements**

**A** **Aros Electronics AB, 29**

**Ascom Tateco AB, 21**

**B** **Brother Sverige, 21**

**C** **Civilingenjörsprogrammet Teknisk fysik,  
40**

**D** **Daloc AB, 40**

**Department of computer science  
and engineering, 16**

**E** **EATON HOLEC AB, 6**

**F** **Fouriertransform, inside front cover**

**H** **Husqvarna AB, 6**

**I** **Ingenjörfirma G. Karlbom AB, 29**

**Institutet för rymdfysik, 15**

**Interaction design and technologies, 16**

**J** **Jeppesen Systems AB, 6**

**S** **Sibbhultsverken, 7**

**Swedish Match North, 15**

**Swedish Microwave AB, 15**

**T** **Trilogik Konsult AB, 21**

**V** **Vehco, 29**



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