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ASTATINE

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ATTENTIE

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Eline Marsman, Zahra van Egdom

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Sometimes train delays can be quite fun.

I walked to the piano at Zwolle station to pass the time, but there are already two dudes going ham. So I ask if they could use an extra hand and indeed, they let me play along. As soon as one of the dudes gets up I sit down for the bass part. I concentrate on the keys and dude two for a bit and when I look up again dude number one has a freaking flute in his mouth. I couldn't resist laughing and I don't think I ever stopped until a few minutes after they left. I keep playing and before I know it dude numero dos also gets up to grope about in his backpack. He gets out a mouth-harmonica. And it wasn't any weak jamming, especially dude number one wasn't afraid to be judged by the train goers. He played his instrument with passion (and some spit) all while dancing around like some kind of fat angel.

I talked to them and they actually met each other on an internet music forum. I didn't ask them if they were high or not, but in in any case, they made my day.

So dudes, you were amazing.

Jasper Gerritsen, Editor in Chief

From the Astatine board

It has been a couple of months now since we became the board. It is hard to describe what we are exactly doing, since there are so many tasks we are working on. Especially for me: I am running around for meetings and making sure everybody within this board is still happily working on his or her tasks.

So far we have adjusted to our own style of being a board. The blue helmets indicate that we are working hard on something and rather not be disturbed. The 'escalatiemix' is always playing when Douwe is in the room and Jan often has to turn it off since he gets called several times a day. When he is not calling with companies, he is trying to figure out how a computer works. Making an acute accent in word is quite a challenge for him. Nehal is busy balancing her classes with being present at Astatine. During our board getaways, she is the limiting factor since she is not allowed on every roller-coaster due to her height. Kasper's

view from his desk is the famous Astatine StreepSysteem. Only by looking up from his desk he sees the delicious food we sell. I would not be surprised if he were to gain a few kilos this year. Cham is working hard on his educational tasks. He sometimes tries to order folders but instead buys boxes. Nice try Cham.

We spend a lot of time in the board room. One of us is always present at 08.30 in the morning, so if you feel like having coffee right before your class, feel free to stop by Astatine and start your day here with us. Throughout the morning, the rest of us shows up to work on our board tasks. Working together is not only a lot of fun, but seeing the members stopping by every day is what makes Astatine our time worthwhile. We enjoy being the board and hope you enjoy hanging around on the 7th floor as much as we do!

Daphne van Dijken



Kick-in

Yannik Wotte

Kick -In 2016 and why YOU should be there next time! Are you going to study at the University of Twente and want to have the most awesome party period in front of your studies? Do you want to get to know sides of your fellow students that you'll never want them to forget? Then the next Kick-In is the thing for you!

You will get 'hydrated' with 'experienced' students and make them more drunk than they would've thought possible, whilst yourself totally getting out what you paid in fluids and tasty food already. It's not just getting drunk that will make this period the best start you could imagine for your studies:

During the last Kick-In we went on parties that I'll never want to forget, with great bands playing mostly fantastic music (among them songs I never heard before). What was even better: You meet so many new and interesting people from different backgrounds and cultures with diverse hobbies and interests, it's never getting boring to talk to others. All of the students I met were in a really good mood too, enjoying their awesome time the best they could (apart from the hungover hours that is - luckily breakfast wasn't mandatory).

But it is not just alcohol and party, even though hydration was the key

during that perfect weather: there are plenty of fun activities during the day which we attended with our do-groups and almost all of these were great fun, no matter whether they were competitive or plainly for the sake of entertainment. One example for this and my absolute favorite was the "Storming of the Bastille", a huge obstacle run. We dashed through it like maniacs with our do-group, but still waiting once someone fell back too far (or being awaited when our sprinters left us behind) and it is still making me smile to remember people running into water at full speed, because the swing they aimed for got pulled away in the last moment by helpers that made themselves an even better day.

So if you are into having a really good time with your fellow students, no matter if they are from AT or the other studies, do not miss out the next Kick-In!



Study-trip

Study-Trip Astatine

Kevin Rouwenhorst

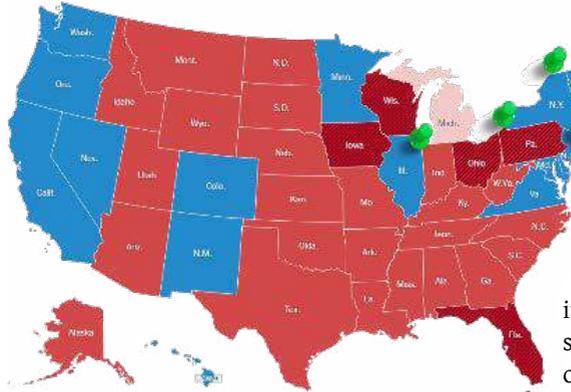
During the summer of 2017 Study-Trip Astatine (In Dutch: Stichting Studiereis Astatine - SSA) will organize its second study trip. This time the destination will be the east coast of the USA and Canada. For some months the participants are already working hard to make all of this possible. Not only have we started doing cases for institutes and companies, we also made our corporate design and the outline of the trip is known.

For those of you who are wondering what a study trip is, a short summary will be given. Every study trip has a central research theme or question, and the theme of this study trip is Innovative and Sustainable Energy. Typically all research and company visits are related to this topic and various smaller research questions are answered. Furthermore there is a course related to this research question, in order to guide provide more information on the methodology and research. When the group of 25 students arrives in the USA,

they have a firm background and thus their trips will be more fruitful.

The destinations will be Boston, Chicago and New York City in the USA, and Montreal and Toronto in Canada, major cities on the east coast of the USA and Canada. Interestingly, all of the cities in the USA are so called blue cities. This means they voted in favor of Hillary Clinton and her Democratic party, whereas the majority of the electoral votes went to Donald J. Trump and his Republican party. Many of us were very interested in the outcome of the elections of last November. Therefore we watched the elections until early in the morning. Even though the outcome was not definitive by 7.00u AM, the opinions on Donald J. Trump's elections were divided; some of us were seriously depressed, whereas others thought it a positive fresh wind for the USA.

Our research theme, Innovative and Sustainable Energy, is especially interesting now, as with a completely new government, a different view on the matter and a resulting new policy is expected. Will the USA go back in time in terms of sustainability and Green energy, as some Democrats claim, or will the new govern-



Study-trip Astatine

ment enhance the sustainability of its processes? This is one of the many questions posed at the inauguration of Donald J. Trump. To be honest, we cannot yet answer this question fully at the moment and therefore we should strive to stay objective and analyze the progress without a large bias.

The SSA consists of a board and committees. The board is the general committee that keeps track of the progress of the foundation. Each member of the board is a member of a subcommittee. The Acquisition committee takes care of all public relations to companies and research groups and next to that organizes excursions. The acquisition committee arranges case studies and other assignments. The Administration committee is responsible for the financial aspects of the foundation. The Administration committee is responsible for the financial aspects of the foundation. The Planning committee is responsible for the accommodation, as well as for the planning of the activities and transportation. As you notice, such a small foundation with 25 participants already needs four committees to guarantee the success of the trip. If you think about it, organizing a trip to another continent for at least three weeks, is quite something after all!

A way to facilitate this amazing experience is by doing cases for research groups and companies. What kind of cases do we do? Well, as broad as Advanced Technology is, as broad is the range of skills within the study trip. There are people competent in various technical disciplines, whereas others can make nice digital programs and apps. (Visually) simulating solutions to problems, and graphical design and website design are other common cases we do. These are only examples of competences within our SSA, and there are many other things we do.

After reading this, you may have become very interested in collaborating with the Study-Trip Astatine 2017, and yes this is possible! There are many ways to engage with us and the easiest way is by sending an e-mail to acquisitie@ssa-ut.nl or visit our website: www.ssa-ut.nl. Last but not least, do not forget to like our Facebook page!

Interview: Eline Marsman

Jasper Gerritsen, Frank Esselink



Since the start of this academic year the AT staff has a new member: Eline Marsman. She is the new programme coordinator for AT. In light of this change of the guards we decided to introduce her to our readers.

Are you new here at the university?

No, I work here for 4 and a half years now.

I've done many different things, I also studied here myself so in fact I've been around since 2006, that's like ten years.

How did you get into this position then?

That's a good question - laughs. I studied business administration, so in 2011 I completed that and then you start to look for a job and you notice that it is quite difficult. Especially in 2011 it was harder than it is now, so then you just take what you can get. In fact at first I applied for something else within the UT and

then you get into the database of people looking for a job. There was someone at the bureau for educational affairs (BOZ) who wasn't able to work because of some private issues, so they asked me if I could immediately start working to help out. Well if you're sitting at home without work you just think: 'sure I'll come.' Then I directly started working there full-time. I started doing the education administration, helping students with requests. You have probably had to deal with that yourselves, so you probably know what I mean. It wasn't really the job I was looking for then, but the bills keep coming in, so you're just glad you have a job at all. So that's how I got in and I never left since. I have worked multiple jobs in the education support, I helped with exam support and I was a schedule maker for about one and a half years. I started when the new schedule system was implemented, the timetable as you use it now. Previously we had Excel files, it was not automated and very basic. With the arrival of the TOM we wanted something automated, so we implemented Syllabus Plus. I worked a lot on that, but at some point that was running fine and it was pretty much finished. Then something at the faculty TNW came up, they asked me whether I wanted to help with module support. TOM had been implemented for about a year and they noticed within the faculty that they really

needed someone who was familiar with the supportive side, which was where I came from, and who could also link that to the module coordination. So creating timetables, delivering OSIRIS course information, getting that into the educational catalogue, guiding those things. I started there in September 2014 and that's where the fun started. That was for the cluster Science and Technology, for AT, TN and ST, I still do the module support there. So I am programme coordinator for AT now but next to that it's also coordination and a bit of module support and quality care. I still help module coordinators in gathering grades and making sure they come into the right template. If they have questions I am basically the point of contact. Before this I was programme coordinator for applied physics. I did that for one and a half years and now I switched to AT, so being a programme coordinator is not new for me, but it is for a different study. So I'm not new at the UT! -laughs- I did a lot of things in a short time, which is very fun, because you get into contact with very many people from different studies and departments, I still have good contact with many colleagues. It's very fun, also with new groups of students every time, but that does mean I have to start over again, because I don't know all the AT students.

Interview: Eline Marsman

And what did you study here?

That was BK (business administration).

Okay so you did both your bachelor and master in BK?

Yes.

And did you do anything next to your study?

As in committees and stuff? No, I was a really obedient student who was just working on the study all the time. I have the feeling that if I could've done it differently I would have, but in that moment I really felt like I had to study.

And did you study without delay?

Almost. I had the familiar story where all goes well until the bachelor assignment. I really like that nowadays they keep good track of it being ten weeks and then it has to be finished. When I was studying you just went to a department and did your assignment and then they just kept asking new things from me.

Anyway, where are you originally from?

From Oldenzaal, do you know that?

Yeah that's quite close by.

Yes, I'm a 'tukker'.

Did you like your study?

Studying in Enschede felt safe for

Interview: Eline Marsman

me, as it was close by. If I would have to choose now, I would want to go out of the house, because I kept living at home, because it was so close. Moving out costs money, but looking back, I feel like it would have been nice to go somewhere on the other side of the country. But the study was very fun, it was a very broad education.

And what did you learn in the study?

Company processes, how does a company work, all kinds of stuff, you shouldn't ask me all that. It's a while ago. *-laughs-*

And that brought you to this point? It kind of fits?

Do you think? Well a lot of people think it's really strange when I tell them all the things I've done. They say: 'why are you here now?' But you don't always have the possibility to choose your job, sometimes things just go the way they do. But the function I have now does give me a challenge.

Yeah the things before this you wouldn't really expect, like schedule maker.

Yeah that's something entirely different, it was really fun, but...

It wasn't what you studied for.

No. But the work experience is also very educational. Especially when you've done an academic education

then you miss the practical application a bit. You're graduated and you think: 'but what can I really do now?' I always compare it to a hairdressing education. When you do that you become a hairdresser, you're going to cut people's hair and paint hair, very simple. But for studying business, what can you do? What are you going to be? That's very vague and working is also about how to interact with people, what the organization looks like, how do you communicate, becoming responsible for your own work.

Do you have other hobbies next to your study or work?

Well I don't do sports. *-laughs-* Well I really like doing relaxed things like eating with friends, getting a drink and just live calmly, I find the social things very important. In the winter I like to crochet and knit.

When you transitioned to being a coordinator for TN, how was it to come into a natural science environment like that?

That's a nice question. This was new to me and that's also what I meant with learning to work with different colleagues. You notice that there are differences, I see it as an opportunity to complement each other.

You studied without the TOM, but do you have more experience with TOM now and what are your ideas about it?

I think it is a lot of work, it just doesn't give as much flexibility, I completely understand that. It gives pressure, we are trying to take that into account. We have a new regulation about the validity of partial results, so if you have only one insufficient grade you are allowed to only redo that part. We try to build in some flexibility like that, I think that is necessary, because you just can't ask students to redo something they already know.

I myself would study a lot for my exams, pass the exam and move on to the next. So for me the TOM would have worked fine, but for math courses and courses where you need some time to let it sink in it's not suitable, especially when you need one course as preliminary knowledge for the next. Then you notice that you are stuck, but you have to finish it, because it comes back in another module. There is no room there, you can't shift your courses around. Previously you could take more time for a course.

We also have the favourite scientist question, but I don't know if you know very many...

No, let's not do that, just put: doesn't have an opinion on this matter.

Have you gotten more interest in technical things now?

Well, that's funny, I was talking about this with my boyfriend last week, and he studied chemistry,

Interview: Eline Marsman

that's something else of course. But I really do like programming, things with Excel, formulas and stuff and he said: 'you should have actually done the beta route.' So I said I wasn't good enough at that, but he of course said I was. But at that moment I just wasn't ready for that and I find it very clever when people can understand all that, but I miss the basics. I have some degree of nerd in me, I like programming and computers a lot and I can put them together. You don't expect it but I can do it, I can install it.

You have put a computer together?

Yes, more than once, also for family members. I order parts and screw them together. I find the technical side very interesting, but I miss the basics, so I can't really do much with it. I can't just go to a lecture and think I'm going to learn something, because I miss the entire preparation.

And if you could go back and choose a study again, would you still choose business?

Maybe I would choose technical business then, for a bit more of the technical side, then you get the logistics management too.

Could you point us to a new interviewee associated with AT?

Perhaps James Seddon is nice, he is joining the OLC.

Intermezzo

Plot the position of millions of journal entries from the 18th and 19th century travel logs a marvelous image of the oceans emerges.



Internet

Ad blocking

Frank Esselink



Advertisements, advertorials, commercials and sponsored content, it is very overwhelming. For years I was enjoying my time on the internet without these annoyances thanks to an ad blocker. I was shocked when I had to use a different computer. Shocked about how much advertising is on the internet nowadays. While watching a 10 minute video on YouTube, I got interrupted by four commercials which lasted for over 30 seconds each. I got irritated to such a point that I ragequit the internet. Never happened to me before and that bothered me. Luckily I could go back to using my own laptop and everything was fine. At least I thought it was. Turned out something new was invented on the internet. The anti-ad-blocker. Advertisements were popping up left and right, commercials were playing before video's and in worst cases which luckily almost never occur, adblocker needed to be disabled to enter a site. This got me thinking. How did it get this far?

Advertisement

A good point to start is the moment of introduction of advertisement on the internet. It all began with sending advertisements through mail in

the early days of the internet. The mail was sent to all the users who shared the same distribution system. This method could reach a lot of users and was used so frequently it got called spam.

When the internet got more advanced and widespread in the early 90's, web page owners started to use banner ads on their sites to gain more revenue. This could be anything from static advertising to clickable web advertising. This was the starting point of all the advertising you see today. Money could be earned by having a web page available with a lot of views. To gain more views, many new things were invented. From pop-ups, trick banners, lottery prizes to floating ads to web pages only containing advertising. Anything that could lure people to a page for earning money.

Another feature of bringing advertising in view is the search advertising. When you search for computer, as an example. I can almost guarantee that the words "Best Buy" are in the top 5. Not the thing you need when you want to find the Wikipedia page. Most people wouldn't have noticed it because you adapt to it very quickly.

The most recent trends, and for me the most annoying, are sponsored content and click-bait commercials. Social media is littered with this

filth. They trick you with a seemingly interesting article, and all you get is how a specific product is the best. This is the reason for why I, and many other people use an ad blocker.

Ad Blocker

As the name suggests, an ad blocker filters web pages and stops the advertisement from being displayed. The goal is to block all the annoying ads that can be found on the internet, before it is loaded in your browser. It is done in a simple but clever way. The blocker compares scripts on a web page with a list of known advertisement scripts and disables them. It also disables connections to known advertising servers which is even faster than black-listing. The lists are kept up to date constantly to ensure that the ads are kept at bay.

All this results in cleaner web pages, shorter loading times and few to no distractions. As a bonus, having an ad blocker can also make your computer much safer, since less spyware and malware can gain access. Altogether it leads to a better experience on the internet for most of us.

The consequences

Ad blocking has become a very popular tool on the internet. Over 40% of all internet users make use of an ad blocking program

and this number is still increasing. This led to some controversy on the internet about the use of ad blockers. Recently, it was fueled by the announcement of Apple that they want to incorporate the ability to use ad blocking applications on mobile devices.

Everybody can understand that internet users would rather skip all the commercials but many people argue that blocking advertising undermines the structure of the internet, as many pages can only exist due to money made by the advertising. And I am talking about a lot of money. Over 60 billion US dollar to be more precise. This money supports the free content that makes most of the internet. When the option to block more advertisements is given to people, they will start to use it. This will lead to drops in revenue for a lot of sites, making them very expensive to operate.

The industry fights back

The advertising business responded in multiple ways to this. A small group was willing to pay a small



contribution to the ad blocking company to get on the whitelist. This made the ad blocking business realize that they benefit from this. As always, people find new ways to earn money and this also applies to this case. Still, web publishers were happy to have back some of the revenue they had in the days before the ad blocking software. Although whitelisted ads are not as annoying, it opposes the whole function of ad blocking itself.

These deals might work for some large websites that have a solid base of viewers to generate a steady income, it doesn't work for the smaller websites. They came up with a very different solution.

Anti-ad-blockers

This solution in their view was the anti-ad-blocker. It works in the same way an ad blocker does, except it targets the known scripts that make these programs work. They detect if you are using the software and counter it in different ways. Some kindly ask you to turn off the ad blocker in order to support the website. The aggressive sites use alternatives. Either they fool the ad blocker by saying that the ad blocker is turned off, or they just block you from access to the website until you disable the ad blocker.

Many sites use this software, but they encountered a lot of pressure recently. People complained that detecting software on their computer is an invasion of their privacy. They even try to get those websites into court as they are doing illegal businesses under European law.



You might ask now, what is the point of this story and what am I trying to tell. Well, I just want you to think it over for a moment. Whilst both sides on the advertisement campaign are having an arms race in blocking each other, what will happen to the fundamental basics of the internet? Is it the end of free social media if the ad blocking side wins? Or is the internet going to be filled with advertisements which take up 90% of a web page, just because they can. In my opinion, there is no middle way, as this will always be exploited for the money. To me it shows that the fundamentals of the internet are flawed. I want to be able to find the content that I am looking for, without subscribing first or doing some annoying survey. This isn't free web browsing anymore.

Astatine

NiCat

Rutger Kersjes

We barely got out of our first days of the kick-in when the NiCAT told us that they did not think that an introduction of 9 days was enough. They introduced us to an intro weekend meant for new members of Astatine who wanted to have fun, and fun is what we got.

Our weekend started off great with a bicycle trip with a pitstop at McDonald's in Oldenzaal, it was a nice summer evening and the trip took us through some nice Twents scenery. The weekend also had a few mysteries at this moment: why did we have to bring a jar of Olvarit with us and what was in the envelope they gave us before we got on our bikes wreaking fear and excitement in the group.



When we finally arrived at the farm where we were going to spend our weekend everybody found their way around and claimed a bed. Now everybody was settled in we were ready for the Pub Quiz with plenty of beer and plenty of questions to have fun with.

You wake up with the sound of rat-

ting pans and you think that your morning could probably not start off any better, but then they tell you... You get to prepare for morning exercises, isn't that fun!

At the beginning of the afternoon



all of us had to show our envelopes so we could see if someone took a peek before they were allowed, which of course nobody did, except for Laura Berkhof. Inside the envelopes were the assignments of a game of crazy 88, the assignments ranged from "go for a swim" to "write a rap for the BOSS". A lot of the exercises could also be done in the local Albert Heijn, which was fun at first, but when the woman in the liquor store was asked if they had alcohol free vodka for the fifth time the saleswoman made clear that we were rather unwanted. In the end, ponds were swum, trees were climbed and songs were sang, one successful afternoon.

We were now ready for the highlight of the NiCAT, the cantus and guess what, we were to take our Olvarit too. We were joined in the cantus by other Astatine members who

had been in an Astatine cantus once before. Many songs were sung, some difficult first timers were shown their place and of course, we drank



lots and lots of beer. Drinking beer also takes a lot of energy so at some point it was time for the freshmen to eat, yes to eat the Olvarit. What happened if you did not bring any Olvarit? That was no problem the NiCAT brought some for you, they even added some extra ingredients for you, isn't that nice of them?

Our last day of the NiCAT stood for education and sports. We started

with a course in strepen, or the art of throwing beer. To prevent too many beer to be spilled some milk and other liquids were added to the beer and now the training could begin. The two created teams were put in front of each other, both with cups and a lot of beer. Ready. Set. Throw!

The next event was none but rancid ball, a bag filled with syrup, peanut butter, bread, milk, you name it, and we were to play rugby with it. The players started a bit reluctant, but in the end, everyone wanted to make that touchdown.

A couple of showers later we were ready to depart back to Enschede, the two hours on a bike were tough, but most definitely worth it for this amazing weekend.



Astatiny

The Astatiny: The Tiny Astatine ATtentive

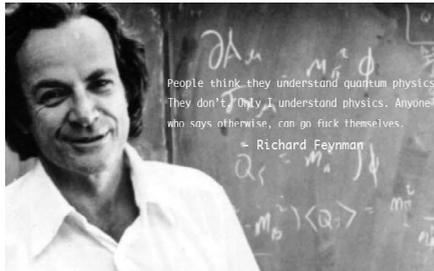
Bowling

On Monday the 12th of September S.V.A.T. Astatine had its yearly bowling activity where many first year students, as well as some older year students, had the opportunity to show their abilities with the bowling ball. Some were satisfied when the ball would stay on the bowling alley and would accidentally hit a pin, while others were unsatisfied if less than 9 pins were smashed down at the first try. We can expect the next bowling activity in September 2017 for sure.

100 kilopascals go into a bar



A block of dry ice is sitting on a table when, as tends to happen, it begins to turn into carbon dioxide gas. After a little while, all that is left of the dry ice block is a cloud of carbon dioxide gas floating above the table. A nearby cloud of oxygen gas notices and says to the cloud of carbon dioxide gas, "Hey, I see you just underwent a phase change. How was it?" The carbon dioxide gas responds, "it was sublime."



Halloween Murder Mystery

On Wednesday the 26th of October, the tenth board of S.V.A.T. Astatine made its comeback with its last activity. Firstly there was a nice dinner at the Faculty club, which was highly appreciated by the participants. Another touch that made it even more special, was the Victorian dressing code. With the bellies filled, the participants had something macabre to solve: a murder mystery. Throughout the woods and parks behind the University of Twente various different clues were to be given by different characters. After many participants had been working hard to find out what was actually going on, they could work it all out at Beneden Peil, the borrel location. The night was concluded with an after party, and the participants finally got to know what was going on all the time, while enjoying their well-deserved beverages.

GA and CoBo

On Wednesday the 8th of September the 32nd General Assembly was at hand, meaning the 11th board of S.V.A.T. Astatine would be evaluated and the 12th board would be charged. In the late hours of Wednesday the 8th of September the 12th board was in office, tying their Astatine ties and chokers. Then on Tuesday the 13th of September the new board was introduced to the associations and other organizations of the Universities in the Netherlands, during the constitution drink. The other boards told great stories and had interesting advices on governing S.V.A.T. Astatine, while quantifying this by their gifts, which always had a great emotional background.



Active Members Activity

During the Active Members Activity in the TAP, every active member of last year received a nice present. This year, the eleventh board has gotten us a very nice orange umbrella with a clear message: Thank you for your efforts!





Graduations

List of recent AT graduates

- **Thijs Franzen** - Transducer Science and Technology (TST/EWI)
- **Rona Yurismo** - Sustainable Process Technology (SPT/TNW)
- **Rik Strating** - Biomechanical Engineering (BME/CTW)
- **Daniel Felix Heriton** - Sustainable Process Technology (SPT/TNW)
- **Nathnael Shenkute** - Membrane Science and Technology (MST/TNW)
- **Lotte Kattenberg** - Water Engineering and Management (WEM/CTW)
- **Ivar Stokvis** - Sustainable Process Technology (SPT/TNW)
- **Kevin Rouwenhorst** - Elastomer Technology and Engineering (ETE/Apollo Tyres Ltd./CTW)
- **Matthias Vermeer** - Biomedical and Environmental Systems (BIOS/EWI)
- **Da Liang** - Computational Biophysics (CBP/TNW)
- **Rens Bassa** - Sustainable Process Technology (SPT/TNW)
- **Bayu Dharmaputra** - Transducer Science and Technology (TST/EWI)
- **Widi Dewandono** - NIKOS (BMS)
- **Frederiek Wesel** - Multiscale Modeling and Simulations (MMS/EWI)
- **Balsam Awlad Wadair** - NIKOS (BMS)
- **Rens Werink** - Robotics and Mechatronics (RAM/EWI)
- **Martijn Mulder** - Inorganics Materials Science (IMS/TNW)
- **Arie Dedding** - Mechanical Automation and Mechatronics (MA/CTW)
- **Yasser Pordeli** - Inorganic Materials Science (IMS/TNW)
- **Paul van Assema** - Technology in Cardiac Surgery (TNW)
- **Max Krakkers** - Nano Electronics (NE/EWI)
- **Suzanne Vernimmen** - Nano Electronics (NE/EWI)
- **Aleksandar Angelov** - Nano Electronics (NE/EWI)
- **Saskia Caspari** - NIKOS (BMS)

List of recent AT graduates

- **Maarten Ganseij** - Biomedical Engineering (BME/CTW)
- **Dennis Niehoff** - Biomedical Engineering (BME/CTW)
- **Lisette Groeneveld** - Multiscale Modeling and Simulations (MMS/EWI)
- **Jornt Lageveen** - Biomedical Engineering (BME/CTW)
- **Pim Witkop** - Biomedical Engineering (BME/CTW)
- **Dave Vogel** - Biomedical Engineering (BME/CTW)
- **Jur Eekelder** - Robotics and Mechatronics (RaM/EWI)
- **Byron van Gool** - Thermal Engineering (TE/CTW)
- **Dorien Stroeve** - Production Technology (PT/CTW)
- **Teun van der Molen** - Robotics and Mechatronics (RaM/EWI)
- **Dinah Kleiboer** - Robotics and Mechatronics (RaM/EWI)
- **Jeroen van Dorp** - Robotics and Mechatronics (RaM/EWI)
- **Alexander Dijkshoorn** - Transducer Science and Technology (TST/EWI)
- **Erik Landman** - Robotics and Mechatronics (RaM/EWI)
- **Franck de Vries** - Robotics and Mechatronics (RaM/EWI)
- **Alexander Jobst** - Industrial Engineering and Business Information Systems (IEBIS/BMS)
- **Vincent Buit** - NIKOS (BMS)
- **Leonardo Gerritse** - Energy Materials and Systems (EMS/CERN/TNW)
- **Joey Liu** - Robotics and Mechatronics (RaM/EWI)
- **Rick Timmer** - Biomedical Engineering (BME/CTW)
- **Tim Wijlens** - Robotics and Mechatronics (RaM/EWI)
- **Marijke Faber** - Elastomer Technology and Engineering (ETE/CTW)
- **Frank Esselink** - Transducer Science and Technology (TST/EWI)

India and China

Kevin Rouwenhorst

Last year I did something very exciting next to my study and board year, namely traveling Asia. From February until April I was in Vadodara, a city in the state Gujarat in India, and during the month July I went to Hefei and Beijing, cities in China. If you would have told me about one and a half year ago that I would be traveling to these places for 13 weeks, within the same year as my third and final year of the Bachelor and board year of Astatine, I would definitely have laughed at you dully. Back in my head I would have thought: 'secretly I would have liked to do this!'

You might already be thinking, that is actually quite interesting, how did you arrange this? I can give you only one tip, be proactive: No is what you have right now, and yes is something you can get! If you really want to do something, do not dream it away until it is too late, but send an e-mail to the person or organization involved. This is also how my Asian adventure started, with one e-mail one and a half year ago. This one e-mail has led to the opportunity to do my Bachelor thesis abroad, in India.

For ten weeks I did research in a completely different environment, a different climate, a different culture, a different language, in short I was put out of my comfort zone. I did research on extrudate swell behavior at a factory of Apollo Tyres Ltd. I could spend many words on

the technical terms and relationships I investigated, however I want to point out another part of the story in this article. Next to obtaining hard skills, it is also very important to develop other skills, so-called soft skills. Before I went to India, I had never worked on an academic level within a company, I had never been outside Europe and definitely never communicated extensively with people in different cultures. In fact I already learned that the world elsewhere is indeed really different when I looked out of the airplane. Of course I watched documentaries beforehand, featuring countries far away from the Netherlands, but somehow it did not feel real, if you have never been outside a world that looks so different from the Netherlands. So when I looked out of the window, I saw rocks and sand, a lot of sand. Later, when I drove through Mumbai I saw palm trees and a completely different type of city than I was used to. From that moment on the world became a lot more real to me!

After a long, long journey I finally arrived at my destination: Vadodara. Vadodara is a city in Gujarat, the most western reaching province in India, and it has over two million inhabitants. You may be thinking: I have never even heard of this city. Honestly I have to admit, this also goes for me. However, I think that can even prove to be

the magic. When I was in this place, I noticed how much things there were actually to see. Things that I always wanted to see.

You might be wondering, there are supposed to be cows on the road in India and I can tell you I was not disappointed. During my first ride to the plant, I had this taxi driver. All the time he was kind of annoyed about the other drivers, who were obviously always in the way, because yes, the Indian roads are full and chaotic. Then all of a sudden he slows down and smiles happily: there are cows on the road. These tame animals then passed the road

at their own pace and eventually we could drive again towards our destination.

I can now try to explain how crowded public markets are in India, but an actually picture taken during my trip gives a much better impression, and therefore you can see it below (try to spot me on the figure). Therefore I now continue with another intriguing adventure in India. Another Dutch person was also in India during the last few weeks of my stay there and he had this idea to climb the Pavagadh hill with at its top a temple for Mahakali, an Indian goddess. The Pavagadh hill is 762 m



in height and we did not even begin our journey upwards from the bottom ground. However, I can tell you, the journey was heavy. Not only was it at least as crowded as in this market place I depicted, we were in the open all the time and it was close to 45°C. You can imagine that we sweat a bit, but no, we could actually halfway swim in our clothes. This does not increase your potential as a photo model. However, we were pictured quite frequently, whether we asked for it or not. Actually we were the only non-Indians on the mountain that day, so well, we must have been exotic. I must admit, that I do feel a bit strange about being

photographed while being soaked.

Now you might be thinking, this temple must be really great, if all these people make the journey upwards. Well, that depends on your point of view. When I went up, and could go inside the temple for like 10 seconds, after which I had to walk on again, I did not see the magnificence of the temple itself. You must be a believer to see the value, I think. The journey on itself was really epic, though, and after a lengthy trip downward again, we were exhausted, smelled extremely bad, but we were satisfied, we had made it!

There is of course a lot more to tell about a stay of ten weeks, like amazing food at BBQ nation, tiny shops where you can buy everything, and cricket. In the Netherlands we are used to most people playing football, but in India everyone, and then I mean everyone, plays cricket. At the factory there was even this internal competition, where teams competed and there was a trophy to be won. People were so enthusiastic about it, that they even played matches at 7AM, before their regular working day. Can you imagine football matches for employees of companies in the Netherlands to be played at 7AM? Well, I cannot!

I was selected and had the opportunity to investigate yet another interesting region in Asia. Hence, after the last module of my Bachelor, I went on my second major journey of 2016. The destination was Hefei. Now I was even more disappointed in myself. I had not even heard of a city with two million inhabitants, but Hefei has 7.5 million inhabitants and still I had never heard of it before I went to China. This time I went to a University rather than a company, namely the University of Science and Technology of China, or USTC in short.

When I arrived at Beijing airport I saw yet another completely different world. Even though the highroads were quite filled with cars, as you always read, I was already prepared by my trip in India. With this rather fast taxi driver we went from Beijing north to the high speed train station in Beijing south, which was supposed to be one of the many high speed stations in Beijing, not even counting the normal train stations. There were 23 trails and the place was massive, maybe even bigger than the airport in Vadodara, just to give a sketch of the situation. I think this high speed train is one of the most amazing ways to travel within China. Of course you want to see some nice big cities in China, but this train leads you through the rural parts with the huge rice plantations. This gives a beautiful im-

Imagine, I was in India, experiencing this completely different culture, and then this summer school in China pops up. Should I dive into another amazing, but also exhausting experience? I have to admit, I was doubting. It was all nice, but I dreaded the long flying hours. Eventually the You Only Live Once mentality came to me again, so I applied for the Future Chemist International Summer School. There were 20 spots and about 50 people applied, so obviously I thought I would never be picked out and this was also a reason why I doubted at first. Actually, by just applying and hoping for the best, you can achieve a lot!



pression how life actually looks like for these people. The scenery never bores, and if it does, you already see something different. These trains are very fast (up to 300 km/h), and I travelled 1000 km in less than 5 hours by train!

In Hefei I saw how University life looks like in China, which is rather different from that at the University of Twente. Furthermore I met students from all over the world, which is always nice. Along with 19 other participants I enjoyed various lectures. Not only did we get involved in the research of the various chemistry related research groups of the USTC, we also had other special lectures. For instance, we had a tea lecture, taught by an actual tea professor, you do certainly not have such a thing at the University of Twente.

We also got introduced to one of the most prominent Chinese sports: Ping-Pong. There was an entire hall filled with Ping-Pong tables and I played against natives quite frequently. I always felt really proud of myself when I was able to beat one of them. The Chinese students do also quite regularly play badminton and basketball. They even played football and their level was above my expectations. This proved to be a bit of a problem, as they challenged us to play against them, expecting us to be American, European and Oceanian all-stars. Of course we were not and we conceded quite some goals. After the match the Chinese students wanted to take a picture with us. There we go again, completely soaked (it was over 30°C in broad daylight) on a picture.

During the weekend between the first and second week we went to the cities near the Yellow mountains. After this, during the second week all of us joined a research group and we took part in their research. This was also a very unique opportunity. I had some interesting discussions with researchers about difficult problems. This showed me that we can learn a lot from one another. The students at the USTC have read a lot of papers from important journals and are thus very knowledgeable. I noticed that I could add to the discussions by utilizing my creativity. By combining your strengths, you can achieve a lot and solve difficult problems.

After two amazing weeks in Hefei, also with quite some karaoke involved at nights, I went back to Beijing. Here I visited some of the must see attractions like the forbidden city and the Chinese wall. The red square in front of the forbidden

city showed the magnificence of the Maoistic era and this greatness was further elaborated by the great open squares, and there were many of these from front to end. Luckily the weather was horrible (I did not expect I would ever say this) and there were not a lot of people. The Chinese wall, on the other hand was magnificent in its own way. Actually it looks more beautiful when you see it, than when you view it on the pictures. The curves over the mountains and the misty depth, where the wall goes on and on, you will never capture in a picture well enough.

All in all my trips to India and China have given me an amazing experience I would never have had if I had just stayed home, and had just done the regular things, nothing more. Thus I encourage you: if you want to do something, take the first step and follow your dreams!



DeepDream

Pareidolia is a psychological phenomenon involving an image or a sound wherein the mind perceives a familiar pattern of something where none actually exists.

Common examples are perceived images of animals, faces, or objects in cloud formations, the man in the moon, the moon rabbit, and hidden messages within recorded music played in reverse or at higher- or lower-than-normal speeds.

Google has created an algorithm using a neural network in order to try to emulate this effect.

This neural network can be trained with all kinds of images, from bread to money to paintings.

A compilation follows.



MUSIC

Mythical Music

Bart Nonkes

One of the most weird, beautiful, and inexplicable things in the world is the realm of music. Music at the right place and at the right moment can empower that moment a thousand times. An epic soundtrack under a fighting scene in a movie, a great song playing at a party where everyone sings along, a chilling piece of your favourite artist through your headphones when you're having a difficult time.

certain chords go better with some than with others. As there was experimented over time with different combinations of instruments, it was found that different sets of instruments brought different feels with them, which resulted in different genres.

To some degree, with the knowledge of which chords work well with other chords, and which instruments well with others, and many other aspects of music such as rhythm, music can be thoughttaught. But for some reason it turns out working as hard as you can improving yourself as a musician does not ultimately



It's absolutely absurd if you think about it. A combination of carefully chosen frequencies with particular amplitudes can make people dance or cry. Looking at it very objectively, there's there is no reason at all why we should enjoy music. There are plenty of reasons why lyrics could reach out to people. But However, the instrumental part of music is less explainable as when it comes to objective qualitative assessment. There are specific arrays of frequencies, the different scales we have constructed over the ages, which are pleasant to the human ear. As you play with those scales it turns out that chords can be constructed of the tones in these scales, and that

result in good music. Of course most people who have written hit-songs have worked very hard to get there, but many people who have worked very hard for it as well have written zero hits in their life time. So what makes a hit?

Hits come from the weirdest of places. You only have to look at Gangnam Style or the Macarena to see that hit-songs are as unpredictable as the contents of a Donald Trump



speech. There are quite some studies that deal with the question of a hit's origin, with the ultimate goal of course to carefully predict the popularity of a song, and constructing a 'formula' for hit songs.



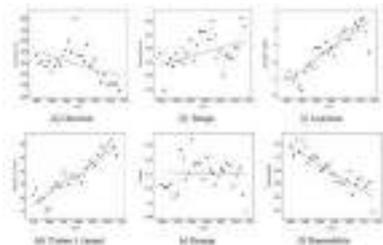
Not only is the question of a hit's origin fascinating on itself, the answer to it has significant value. If a hit can be predicted, upcoming hits can be identified as well, which can greatly improve the performance of music streaming services. Also, it can help artists with selecting music for release to the public.

With this in mind, Keven Wang of Stanford University wrote a paper about the predictability of hit songs. For this purpose, MIDI files (music files that contain individual tracks of the separate instruments) of seventeen hundred different tracks were used as a base for his research. After taking several approaches to the problem, and fine tuning the most successful one, Wang managed to create a program with an impressive accuracy. This program was able to separate the seventeen hundred songs into hits and non-hits

with only a 12 % error. Considering the significant amount of social influence on which songs become hits, this is a great achievement.

In his research, Wang focused on the beats, the melody and the instrumentation of the songs. He believed that these were the three key elements of music that determine its popularity.

Predicting a song's popularity seems possible. But if that's possible, that should only be a few steps away from creating a formula for making hit songs. There is a good chance that within a few decades there will be hits on the radio that are fully generated by a computer program.



It may start with only electro pop, probably without lyrics, but at some point technology might be so far as to be able to generate lyrics by itself. And at some point, maybe even more complex music, music that relies on dynamic and improvisation might lie within reach of processors with musical aspirations.

As we live in an era where comput-

ers outperform the human mind in countless areas, and are quickly catching up on the rest, the first robot performer that makes its own music is not as far away as it was a hundred years ago. Indubitably, the older generation, full of nostalgia, will be reproachful in accepting this kind of music, but it might very well



be the case that robot musicians may one day be in the same rank as the most competent human composer.

And yet, I doubt it all the same. Something as entirely unpredictable as the human mind, judging

something that is so subjective in its very core, might never be within reach of the digital world. If you look at how our taste in music has changed over the span of 30 years, we might outmanoeuvre a computer's judgement time and time again. Thereby, there is something irreplaceably great about seeing an artist perform his own work. Seeing the emotion put into the work for



yourself, in the form of joy, ecstasy, or tears, is so utterly human, that it will take someone genius to express it into 0s and 1s.

Konnichiwa everyone. Since I moved I am now living with 11 other people, this made an interesting difference in my cooking dynamic. Cooking for more than 2 people creates new challenges, I had to cook alone for the rest of my house, which is unusual since we normally cook in pairs.

So I was thinking: 'what am I going to make?' and reminiscing about the study trip to Japan I thought about making my take on an easy ramen soup for a large group of people. My take on ramen is a chicken curry ramen, for a vegetarian option you can replace the chicken with chickpeas, per person about 100 grams of chickpeas.

So what do we need?



Chicken Curry Ramen (4 people)

- 2 chicken fillets
- 1 liter of water
- 1 tablespoon Curry powder
- Broth powder/cube
- 4 Eggs
- 1 leek
- 500 grams carrots
- Some spring onions
- 400 grams of noodles

Peel the carrots and dice them into small cubes and cut the leek in slices.

Boil a liter of water, put it in a large enough pot. In the end all the ingredients will go in this pot. And put in the amount of broth needed as mentioned on the packaging, don't throw in salt; the broth is salty on its own.



Throw in the leek and carrots, stir in the curry powder and let it simmer until the carrots are nice and soft.

In the meantime, slice the spring onions and cut the chicken into small pieces.

When the carrots are nice and soft start boiling the eggs. For boiling the eggs cover the eggs with cold water, the water level should be about 1cm above the eggs. Heat the pot until it is boiling and then lower the heat, the cooking times after the water has boiled are roughly the following:

- 5 minutes runny yolk
- 7 minutes barely set yolk
- 10 minutes set yolk



When the cooking time for the eggs is done, cool down the eggs with cold water and put them aside until the rest is done.

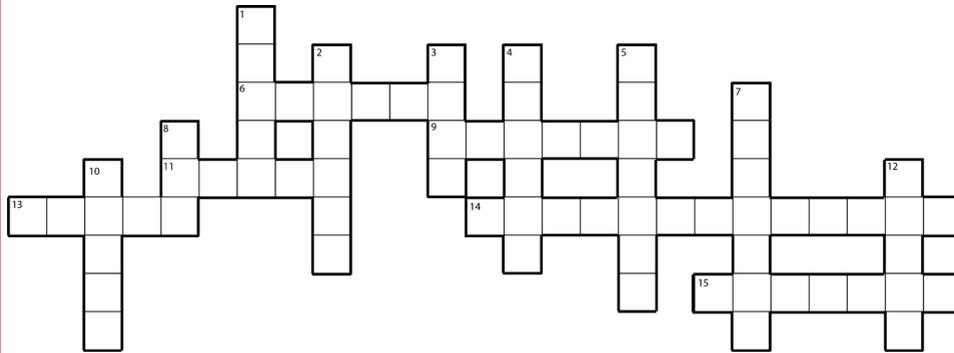
Stir in the chicken into the pot with the carrots, leek and broth and higher the heat a little bit until the

chicken is done.

After the chicken is done put the noodles in and cover them with the stock as much as possible. Let it simmer until the noodles are done. Now you can serve your ramen into a bowl and you can top it off with the spring onions and eggs. Enjoy and itadakimasu!



The grand Trump crossword puzzle



ACROSS

- 6 This 2016 presidential candidate's daughter has followed both her mother's career as model and her father's as businesswoman (6)
- 9 The first president representing the same political party as Donald Trump is also a car brand (7)
- 11 Trump's main adversary during the 2016 presidential race was Secretary of State for what former president? (5)
- 13 Wind instrument (abbrev.) (5)
- 14 This 2016 presidential candidate would have been better off running for president in Europe (13)
- 15 Donald Trump's main competitor's husband's full first name (7)

DOWN

- 1 Melania Trump's husband is known to have an obsession with this Asian superpower (5)
- 2 A large portion of the US population wants to move to this country should Trump with the 2016 election (6)
- 3 Donald Trump wants to build this brick structure between the US and Mexico
- 4 This animal represents the political party opposite to that of Donald Trump (6)
- 5 Fred Trump gave his son a small loan of one of what natural number in dollars? (7)
- 7 What do Donald Trump and the country of Slovenia have in common? (7)
- 8 Donald Trump's political party (abbrev.) (3)
- 10 What animal has Donald Trump been known to grab? (5)
- 12 This is what Donald Trump wants to make America again (5)

Solution puzzle 10-4

The puzzle of edition 10-4 was a puzzle of three parts. The first puzzle could be solved in two ways. Firstly, a puzzle could be solved by the first year students during the kick-in. Secondly, the puzzle presented in the previous edition could be solved. The solution of this puzzle could be used to get a url, which is tinyurl.com/52141200651339.

In the second puzzle four times were given, next to a starting and ending floor in the Horst tower. Knowing that the times were traveling times between floors, the successive numbers of the three floors between the beginning and ending floor needed to be found. Putting these three floor numbers after each other gave a four number code. These floor numbers being 6,10 and 4, the code was 6104.

obtained. This third puzzle was a riddle, leading to a location on the campus. The first alinea of the riddle gave the location of the horst. The second gave the twelfth floor of the tower. The third alinea resulted in the answer of the riddle, room HT 1203.



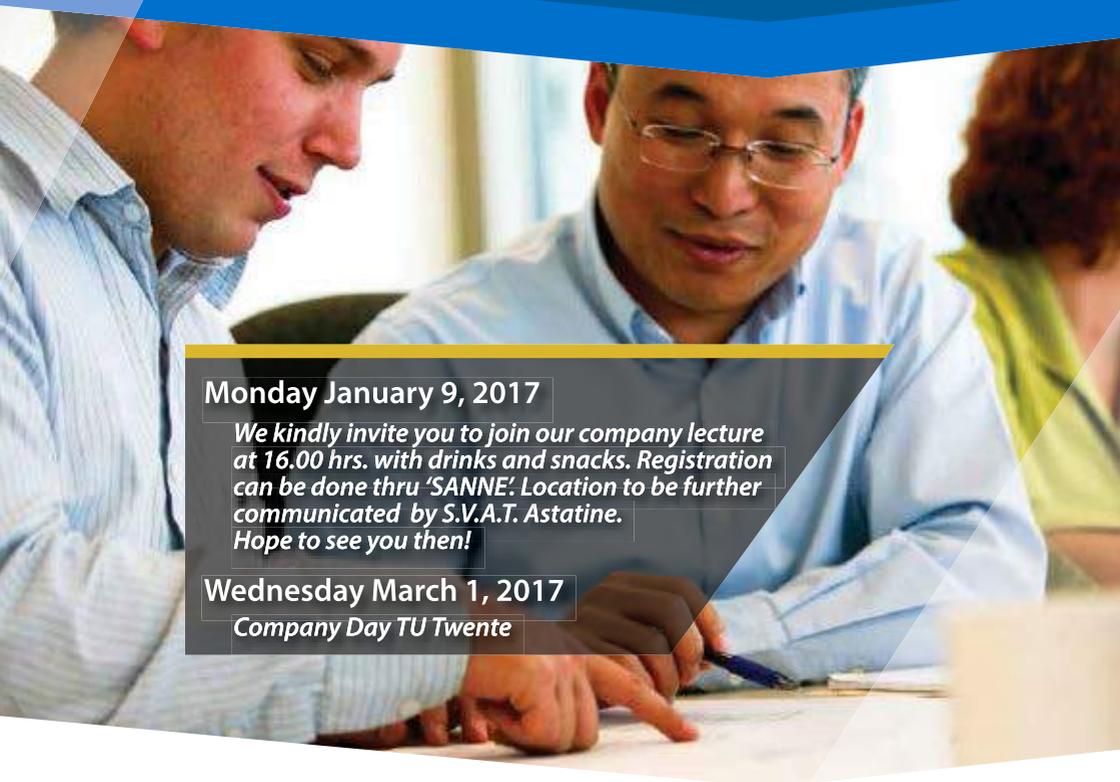
In HT 1203, a piece of paper could be found under the table, which revealed the location where the prize could be found.



Using the url found in the first puzzle, the third puzzle could be

Using the location found in HT 1203, and the locker code in the second puzzle, the prize was acquired. Congratulations to Rutger Kersjes for winning the four cinema coupons!

If you have filled out the crossword please send a picture of your solution to attencie@astatine.utwente.nl and perhaps you will win the cinema coupon!



Monday January 9, 2017

We kindly invite you to join our company lecture at 16.00 hrs. with drinks and snacks. Registration can be done thru 'SANNE'. Location to be further communicated by S.V.A.T. Astatine. Hope to see you then!

Wednesday March 1, 2017

Company Day TU Twente

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UPSTREAM OIL AND GAS

DOWNSTREAM OIL AND GAS

LIQUEFIED NATURAL GAS POWER

ENVIRONMENTAL INFRASTRUCTURE

WATER AND WASTEWATER