connecthor

Life after EE

The GrEE/AT pubquiz

Antifragile Technology

Women in Engineering Career Month

54

June 2021

With the vaccination program finally getting up to speed, the Corona figures are going down, which means that the world is slowly opening up again. Students and staff are going back to the university.

In the meantime, the Connecthor in front of you was still made in total lockdown. And even during this period of time, students and staff of EE managed to do a lot. Whether it was organizing events, educating our students or doing our amazing research.

The IEEE Women In Engineering organized a Career Month in March, Anouk Hubrechsen explains what was done during the eight online sessions on pages 10 and 11.

Since graduation from Electrical Engineering, former editorial board member of the Connecthor, Anjo Peeters worked with two different companies. His life after EE can be read on pages 12 and 13.

Anjo also collaborated writing together with Max Schoonderbeek and Tom van Nunen, former board members of the 54th board of e.t.s.v. Thor about their experiences during their board year. Read about it on pages 28 and 29.

e.t.s.v. Thor was asked to arrange a get-together with 6-vwo students to show them the campus life of a student. How this was done while keeping the Corona measures in mind, can be read on page 23.

To reconnect, after being so long out of touch, students from Thor, StudentBody and the student member of the department board organized the GrEE/AT pub quiz for students and for staff to join. Bram Lustenhouwer wrote about it on pages 26 and 27.

Of course, there is many more to read in this new edition. So, we won't keep you from reading this magazine. Enjoy!

We hope the drop of people getting ill from Corona continues and we hope you all get to enjoy an amazing summer with family and friends. Happy summer break. Don't forget to keep looking out for one another.

The Connecthor editorial board ▪

In RetrospecThor
How does being active during your study benefit your future carreer choices? Read about Max Schoonderbeek's experiences on page 28.

The GrEE/AT pubquiz
Read more about the department pubquiz on page 26.

Student well-being
Student well-being has been a priority the last quartile, read more on page 24.

Life after EE
Read more about Anjo Peeters's life after graduating on page 12.

Board issues

By: Guus Pemen

At the time of writing this, we are still in the middle of the corona lockdown and we only have limited access to the university. But with the acceleration of the vaccination program and with the "opening plan" that our government has recently presented, some light is finally shining at the end of the tunnel. It is anticipated that we can scale up our on-campus activities before the summer. Let's wait and see if this can really be the case. But we are very much looking forward to meeting our students again at the campus, to be able to meet undisturbed with family, friends and colleagues, to return to a more normal way of life.

Recently, the first progress evaluation of our implementation of the Sector Plan Techniek has taken place. The committee was impressed with how this Sector Plan is being implemented in our department. The committee is very satisfied with our success in attracting female research talent, and encourages us to further propagate our successful approach to diversity. With our choices in the Sector Plan, we connect very well with the Brainport ecosystem. The committee notes that the newly hired scientists feel well received and are satisfied with the starter packages. This sector plan represents a huge boost for our department and my compliments to all involved.

Currently we are preparing for a midterm review of our research. This midterm is not mandatory, but we have decided to do a "lightweight" evaluation. This consists of two ingredients. First of all, together with our EE colleagues in Delft and Twente, we look at what we have done with the recommendations of the research assessment in 2017. But more importantly, we want to use this midterm to further finalize our EE research strategy. In addition to a thorough analysis of our current role and choices in the broad field of Electrical Engineering, we mainly look ahead. What will our department look like in ten years? We would like to answer this question with you. That is why this research strategy will be the main topic of a department research day that will take place on Wednesday afternoon, June 9th. We cordially invite you for this afternoon.

During several occasions, it was pointed out that the three Dutch EE departments are lacking visibility and that a better organization degree and alignment of the discipline would help increase the visibility and impact of our research and education, and our presence in relevant social and industrial discussions and bodies. Therefore, together with our colleagues in Delft and Twente, we are establishing a joint EE platform: Electrical Engineering Netherlands, EE-NL. Aiming to: (i) increase the visibility of EE in the Netherlands, in the EU and internationally, (ii) better align and increase success rates in larger project calls, (iii) align better in infrastructure sharing and needs for the EE discipline, and (iv) enhance collaboration in education, instream and diversity of students. Currently, a small team is preparing the organization of EE-NL and we hope that the platform can kick-off in September this year. ■

From the President

By: Jurgen Kok

There is one specific thing that characterizes a regular day for me. It's not my morning or evening routine, or the bike ride to Flux, it's forgetting to have lunch. Sometimes, this means I just have lunch quite late, somewhere around four o'clock. But often, it plainly means I just eat two meals a day instead of three. Apart from the physical effects this might have, although I really do not know anymore which meal is truly the most important, you miss out on one important thing during your day: a break.

For lots of people, their lives already seemed like a rut and in these corona times, this feeling has only intensified itself. For me, you can quiet easily describe my lockdown routine as one smooth motion: rolling out of bed, to the shower, to the kitchen and back to my room to sit at my desk for the rest of the day. One can argue, minimising travel time and simply going from meeting to meeting with at most two simple clicks makes for a really effective workflow. However, this flow also makes it far too easy to keep working, all day and every day.

Over the past months, I've seen all kinds of people, both my fellow Board members, students and staff, express their lack of breaks, ranging from having no free time in weekends to not even having enough time to go to the toilet in between meetings. The results of this lifestyle also start to show. The enthusiasm and hope seem to fade by the day as more and more people seem to drop out and having to put on the brakes. The rut and the lifestyle I just described also showed its marks on me, as it became harder and harder for me to put all my energy in enthusing everybody around me. Luckily, someone, or rather something, came to put on the brakes for me. As for almost everything that seems to be going one this year, this something was corona.

Even though the lockdown forces us to stay at home, it can't seem to actually make us put a hold on all our (social) obligations. There is an awful lot that still has to happen. The one thing that stopped me from doing all this and wanting to help everyone who was struggling due to the corona crisis was, oddly enough, my quarantine. I got lucky, because the things that I got out of this quarantine are mostly positive. Being at home and having an excuse for all (social) obligations did namely give me some time to think and to actually slow down my life

for a bit. You cannot take on everything and expect to get a good result without losing yourself on the way. You should pick your moments and plan some free time, it being a proper lunchbreak or a complete weekend, otherwise, you'll never be able to stay sane.

In these negative times, let me at least end on a positive note. Things are opening up again! Hopefully this time for good. This also means we can slowly go back to all those social obligations we now miss, even if we would never have expected to miss them. I am already looking forward to being able to properly meet up with people again, even if it is a boring and typically Dutch birthday of some aunt of mine. I do however hope, that, even if the possibilities for fun and interesting things to do will once again seem infinite, I will take one lesson out of the past period: 'never forget to take a break!'

Veel gedonder!

Jurgen Kok

President of e.t.s.v. Thor ∎

Introducing...

Hello everyone, my name is Erkut Akdag. I started doing my PhD in the VCA group in the department of Electrical Engineering in February. I will be mainly busy with developing artificial intelligence-based computer vision algorithms for intelligent traffic systems. I am very excited about the project as well as working within this very nice group at TU/e.

I was born in Gaziantep, Turkey, which stands out as one of the world's major gastronomic cities as included in UNESCO Creative Cities Network. I definitely suggest you to try this perfect cuisine at some time in your life.

I completed my bachelor degree at METU in the computer area. During the final year of my bachelor's degree, I started my professional career in the military industry. While I was working in that company, I also finished my MSc in the machine learning area and my thesis topic was on human behavior understanding through 3D data.

I worked at ASML for three years as a design engineer after moving to Netherlands in 2018. A PhD in artificial intelligence was always one of my ambitions and that's why I've decided to leave ASML and start my PhD.

I am an ambitious, determined, social and friendly person. My hobbies are playing guitar, watching Formula 1, playing tennis and making puzzles.

Looking forward to meeting new colleagues at the TU/e! ◼

Hello everybody! My name is Marziyeh Hajiheidari, I am from Iran, and I have joined TU/e EPE group as a PhD student in February this year. My major is power electronics, and during my masters studies, I conducted investigation into high-step-down converters for voltage regulator modules. Right now, my research topic is high-precision power converters with an ultra-high effective switching frequency, which is part of a European project called IC Technology for the 2nm node (IT2).

During my spare time, I like to go hiking and cycling, so I am kind of a sport girl. I know that during the coronavirus pandemic it is hard to go on a trip, but I hope we can have some group travels in the not too far future. Additionally, I enjoy growing plants and flowers, and I had a small greenhouse when I was in Iran. Furthermore, I enjoy painting and listening to music. ◼

A warm welcome to our new colleagues!

"The general freedom in academic life is, in my view, one of its most important features. The long vacations are exceedingly attractive as is also the general feeling of freedom in hours of work." This quote from Claude Shannon is something I relate to and is what brought me to the TU/e. My name is Jeffrey Lee, and since January 2021, I joined the Information and Communication Theory Lab in the SPS group as a post-doc.

Of course, if I really wanted long vacations, there are other, better ways to achieve this. However, the ability to take a step back from daily work and the pressure of hitting customer deadlines, to be able to really dive deep into understanding what one does, why it is done a certain way, whether there are better alternatives, and what is the big picture of the problem that one is trying to solve, are the things that I am keen to spend my time on now that I'm back at the TU/e. Back because I studied and graduated from the TU/e, earning my MSc and PhD degrees in Electrical Engineering in 2005 and 2009 respectively. And there are still quite a few familiar faces around :)

If you're in for a chat about ideas, problems, solutions, etc., feel free to get in touch! ∎

Hello everyone! My name is Giovanni Costa, I am from Italy, and I started as a PhD student within the Electromagnetics group in April 2021.

I hold a master's degree in Biomedical Engineering from the University of Naples Federico II, and in the last two years, I gained research experience in the field of biomedical imaging: my research work focused on system optimization, image processing, and novel techniques for ultrasound imaging. I have a background in electronics and electromagnetism, but I also studied biology, physiopathology, chemistry, mechanics, computer science and materials science.

During my PhD, I will explore the design of innovative Radio Frequency (RF) coils for Ultra-High-Field (UHF) Magnetic Resonance Imaging (MRI), the aim being to find a configuration which optimally meets the needs of both the doctors and the patients, while minimizing costs and complexity. I like the topic very much, as this work stands at the interface between physics, medicine, and engineering, thus representing a unique opportunity to learn exciting new concepts, ideas, and methods!

During my free-time, I like playing videogames, hanging out with friends, travelling, cooking, and, of course, eating: as you can imagine, my favorite dish is pizza, and I hope there is at least one good pizzeria in Eindhoven - any suggestion is well accepted!

I am looking forward to meeting with you soon! ∎

Hi! My name is Nikoo Dehghani. I joined the Video Coding and Architectures (VCA) research group in January 2021 and started my adventure as a PhD candidate at the department of Electrical Engineering. So far I have enjoyed my scientific journey in the field of Electrical Engineering, which started with an interest in Computer Vision and Machine Learning, followed by a passion for applying them as a solution to the medical problems. Motivated by that, I am currently working on a computer-aided system for detecting cancerous lesions using the data from colonoscopy process to help the physicians in diagnosing this disease at an early stage.

I was born and grew up in Iran, a country with beautiful landscapes, where I believe I got the passion for traveling and exploring the nature. And now that I am here, I have found a new hobby in cycling through the beautiful sceneries of the Netherlands. I also like photography, reading, board games, and of course pizza! Getting familiar with other cultures, customs, and languages is great joy for me. So I look forward to meeting new friends at TU/e. ∎

The online orientation journey

By: Pauline Hoen

It has been a challenging year for recruitment of new students this academic year. Unable to invite (high school) students to come visit our once so lively campus, the recruitment officers needed to come up with something new to inform students about our programs.
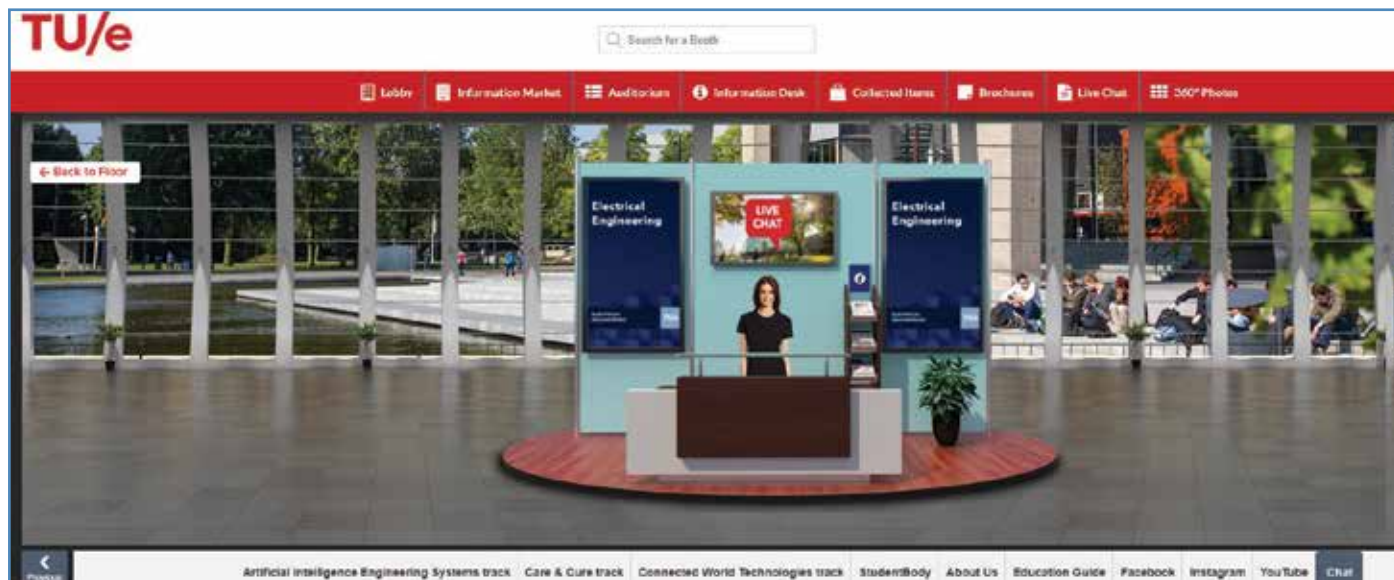
Bachelor Open Days

The academic year 2020-2021 started with the Bachelor Open Day on October 10, 2020. The second virtual Bachelor Open Day was held on February 27, 2021. Used to having thousands of high school students together with their parents walking around in the buildings Auditorium and Atlas, we now needed to create a virtual environment to mimic a somewhat similar fair. The TU/e decided to work together with Vfairs.com who
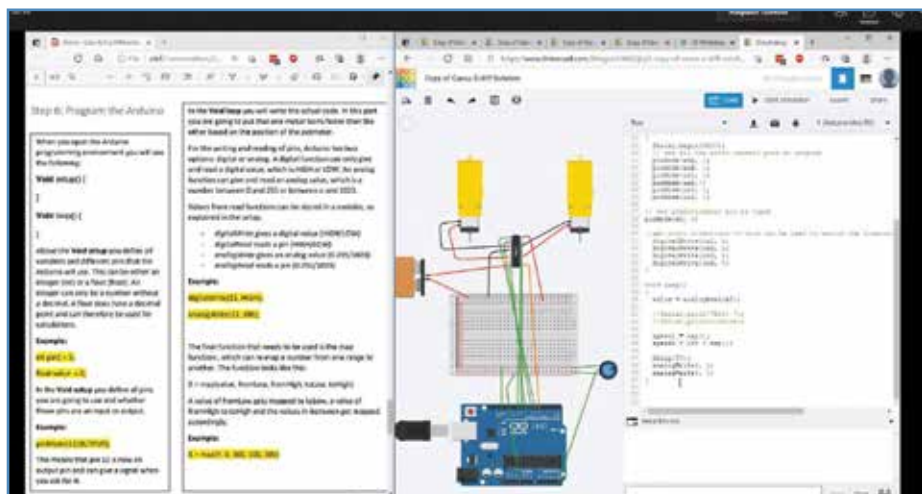
already did a fair with colleague universities. The inside of the Atlas was nicely animated in the Vfairs environment, which gave the visitor a TU/e feeling. Although we nowhere matched the number of visitors as in a live Open Day, we did manage to attract more foreign visitors than usual. The reason is obvious as people didn't need to travel to come visit us.

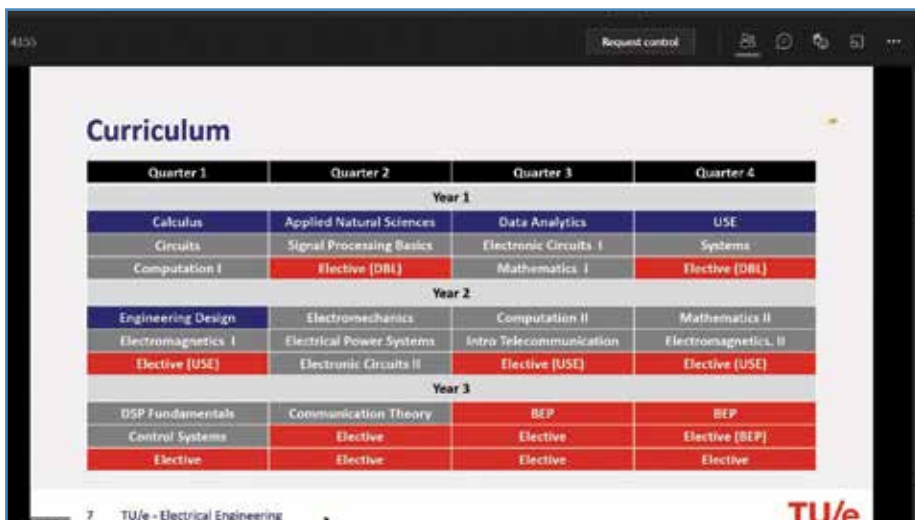*E-diff solution*

Program videos

In November 2020, program videos were recorded. In these videos, our program directors (for bachelor and for master) recorded the program presentation whether or not with a student of the different programs. These videos can be downloaded year-round. So, anyone interested can find these videos on our website under the education button.

Live Q&As

Also, in November and December 2020 and in April 2021, Live Q&A (questions and answers) sessions were held. During these sessions of an hour each, Automotive Technology and Electrical Engineering (bachelor and master), gave a short presentation of 15 minutes to explain the programs. After the presentations the visitors (and sometimes their parents) got the chance to ask questions. In the Bachelor rounds we noticed that pupils find it hard to ask questions within a group, so we prepared a list of frequently asked questions and threw them in the chat and answered those questions. After that, things got started. After a round of answering questions we did a little quiz via Kahoot with the visitors to see if they listened well during the presentation or to trigger their knowledge about EE and

Live Q&A

Het Walhalla and Thor's boardroom. Just to give the visitor an online campus experience of our beloved building.

Campus tours

For those pupils in vwo6 or the equivalent of the international baccalaureate schools in the Netherlands campus tours were brought to live. This is the only live on-campus experience we have managed to offer thus far. A pupil signs up for an hour campus visit with the program of their preference. A student of that program picks up the visitor in Atlas and starts walking, while talking about the study, for a little under the hour over the campus and through our building. The visiting pupil can ask any study related question they have. The campus tours were held from March 8 – April 23, 2021.

Up so far, all events were praised by our visitors. We have scored nice grades, 8 out of 10 and higher for everything we have offered this year. Of course, we heard remarks that people would have preferred more on campus activities, but after saying that, people also understood why it wasn't possible. ◼

AT. And to keep the visit lively obviously. After the quiz, there was more time to answer questions. Most of the time, an hour turned out to be too short, so for those who had time and still had questions left, we stayed online till the last questions were answered, which in practice meant staying online for another fifteen minutes.

Graduate School Event

On March 16, 2021 another virtual fair was organized, this time for upcoming master students only. The Graduate School Event is normally held in the Senaatszaal and Voorhof of the Auditorium. For obvious reasons, the event was held this year in Vfairs.com. The look and feel could be compared to the Bachelor Open Day event. The presentations in MS Teams were visited, more or less to our satisfaction, the booth however not so much.

Experience Days

As we missed the experience days in November, because we weren't quite sure how to implement this experience into online things, we decided to offer it anyhow in March. This gave us more time to figure out what to offer and to work out online cases for both bachelor programs, so pupils could trigger their brains and work on something typically Automotive Technology or Electrical Engineering in an online environment. The two information and recruitment student teams of EE and AT each came up with two workshops in the Tinkercad program. For AT participants "active differential" and for EE participants "make your own calculator". The experience day was held in MS Teams break out rooms. The students of the EE team made a short video to show the Flux building and its labs and lecture rooms and not to forget

Build your own calculator

Live Q&A

The WIE Career Month

By: Anouk Hubrechsen

Last March, we hosted the IEEE Women in Engineering Career Month with a group of eight enthusiastic members of IEEE Women in Engineering. The month consisted of eight online sessions, which were streamed online either from a recording in the university studio or from the homes of the speakers and moderators. All sessions were related to career-opportunities within industry, academia, and non-governmental organizations. The event was all-inclusive, targeted at all (future) engineers from all genders, and it was definitely not only interesting for women! All recordings of the sessions can be found on our website www.wiecareermonth.nl. We shortly summarized all sessions below so you can choose which ones to watch back.

Session 1

The opening session was given by prof. dr. Peter van den Besselaar, who performed research on gender bias in grant allocation and academic careers. His work showed interesting conclusions, such as that gender bias exists in grant allocations, as does the glass ceiling in women's academic careers. However, there is an exception for engineering fields, where there currently is a so-called 'positive gender bias'. For example, women receive approximately four grants more than their male counterparts during their academic career. We also see that the technical sciences show a stronger growth of female full professors than originally expected, which is very good news! Peter showed much more research and numbers in his presentation about gender stereotyping, panel compositions, and many more!

Session 2

This session talked about 'how to get a scholarship', where we welcomed

The goodieboxes participants received at home

Annemarijn Boelen of VSB Fonds and Jeanne de Loos of Zonta Club Eindhoven. Each of their organizations provide multiple scholarships each year for motivated students. They provided tips and tricks on how to apply for any scholarship, and on where to find them. Unique to their scholarships is that the motivation and backstory of the student is more important to them than the grades. Scholarships are a much more accessible and realistic source of funding than many students may think. So, if you are a student, make sure to watch this session!

Session 3

A session on how to negotiate salary and other compensations. This session was co-hosted with the Wervingsdagen Career Expo and by far the most visited session! We hosted four interactive breakout rooms that spoke about negotiating compensation in industry, HR, academia, and self-employed. We had eight panel members who are experienced negotiators, who answered all questions that came up, to better prepare everyone for their next negotiation. Valuable tips and tricks came up, that can be watched back via our website! The panel members were; Industry: Berber Goedhart, dr. ir. Sanne Osmanovic; HR: Tomas Weijters, Francisca Moesker;

Self-employed/entrepreneur: dr. ir. Mindy Howard, ir. Glenn Bergmans; Academia: dr. Sveta Zinger, Floortje de Groot.

Session 4

Monique van der Veen spoke in this session on how she advocated for prolonged tenure tracks in case of parenting. Since this leads to a significant loss in research time, she and four other colleagues hosted a national campaign to extend the tenure track with one year for young parents. They successfully changed the policy at the Technical University in Delft and were rewarded with the Athena Prize by NOW for these efforts. In her presentation, she spoke about the difficulties she encountered when trying to change university policies.

Session 5

Mariëlle Bartholomeus talked about 'Climbing the corporate ladder' in this session. Mariëlle presented her view on good leadership, and about the importance of gender diversity. Her story was inspiring to all listeners and brought a positive and authentic view on leadership and reaching for higher positions. She had a leading role in the corona

crisis, which she also spoke about in her talk, for which she was rewarded the TOPVROUW 2020 award.

Session 6

A little-known career path is one in a non-governmental organization (NGO). In this session, we hosted two speakers working for NGO's, Cristophe Cox of Apopo and Fernanda González Guevera of Engineers Without Borders. Apopo uses the unique sense of smell of African Giant Pouched Rats to detect landmines, tuberculosis and people stuck under debris. They use numerous technologies with their HeroRats, which Christophe spoke about in his presentation. Fernanda spoke about the projects that Engineers Without Borders is currently focusing on, in correspondence with the UN Sustainable Development Goals. A highly recommended session if you're interested in solving societal challenges and improving the lives of people across the globe!

Session 7

During this session, Maria Marced, president of TSMC Europe, shared her very personal story about how she reached her top management positions at NXP/Philips, Intel and TSMC. She also spoke about her experiences in the differences between female and male engineers in different countries. Especially in the Q&A, she shared valuable lessons with us, and about the true priorities in our lives as engineers. A truly inspirational session!

Session 8

In the last session, we welcomed Frank Baaijens, rector magnificus of the TU/e. He spoke about the Irène-Curie Fellowship, a policy at our university that favors women in the hiring process for academic positions. He showed that, at the TU/e, a policy change is necessary since we have one of the lowest percentages of female professors compared to other universities, and one of the largest discrepancies in cum laude PhD theses between male and female candidates (7.7% of males receive a cum laude opposed to 3.3% females, for a similar quality thesis). He talked about the decision of the Human Rights Committee which had the program adjusted and about the worldwide media attention which he did not expect. He also showed that the program has been successful so far and that 50% of the hires since the beginning of the program was female. At the moment 26% of the academic positions is filled by females and the goal of the program is 30%.

Overall, we have received very positive feedback about the sessions! We would like to thank all speakers and moderators (ir. Davine Janssen, dr. ir. Laura Kollau, dr. Regina Luttge, prof. dr. ir. Sonia Heemstra and prof. dr. Marion Matters) once again for their valuable and interesting contributions! If you liked this event, make sure to connect with us on LinkedIn (IEEE Women in Engineering Eindhoven) or subscribe to the mailing list via ieee@tue.nl to be updated on future events. We hope to see you there in the future!

Anouk Hubrechsen (Event Chair), Mariska van der Struijk (WIE co-chair), Femke de Bot (WIE co-chair), Julie de Nooij, Esmé Galesloot, Esther Maas, Luca Visee and Thomas Lippens ■

Life (down under) after EE

By: Anjo Peeters

There have been twenty Connecthor editions since I last was on its editorial board. Since graduating from Electrical Engineering at the TU/e, I've worked at two different companies. My current job also brought me an adventure halfway around the world where I've spent one year working and having holidays. Now that I'm back in the Netherlands again, let me tell you about my time after EE.

As many students might be familiar with, rather soon after starting Electrical Engineering it will become more difficult to tell your parents what the courses you're taking, are actually about. Knowing that the content itself would fly right over their heads, I started to think of analogies between what I've learned and things which take place in 'their' world, to still be able to give them a rough idea about it. With this approach, I've been able to share my experiences with them, and it also challenged me to be creative in coming up with good examples. Later on, this actually turned out to be a very useful skill which still helps me a lot in my current job.

Another familiar experience might be that completing all the courses within schedule, doesn't leave you with much time for any other things. During my first year, I completed all my courses, but after that year, I knew for sure that I didn't want to continue like that for the next four years. So that's when I ended up connecting more with Thor; joining several different committees over the years, as well as being a Board member for one year. This turned out to be a much better balance between technical know-how on the one end, and interaction with people on the other end. Maintaining this balance also proved to be important after finishing my studies.

Finding the right job

So there I was, recently graduated from EE, with several job offers to choose from. I decided to join an engineering firm, in which I worked on advising customers on industrial automation. Although I liked the interaction with different stake holders, I was missing out on a technical challenge. The solutions were often rather straightforward and we were not involved in the actual implementation of them. So after one year, it was time for me to move on.

That's when I started within Vanderlande at the Integration department for warehousing, focusing on bridging the gap between customer and engineers, as well as seeking alignment between different parties within the organization. This was definitely giving me the technical challenges I was looking for, especially given the fact that I started on the largest automated distribution center they have delivered so far. And while the technical challenge was there, interaction with

Feeding wallabies (small kangaroos) in a sanctuary

people was never far away, either with many different parties within the organization as well as with the customer.

The project I was working on happened to be for the largest supermarket in Australia, who wanted a highly automated distribution center in Melbourne to fulfill deliveries for a couple of hundred stores. Looking at the system as a black box, there are vendor pallets (with a single type of product) which are going into the system, and pallets containing the deliveries towards their stores coming out.

Pallets built by the system, ready to be shipped
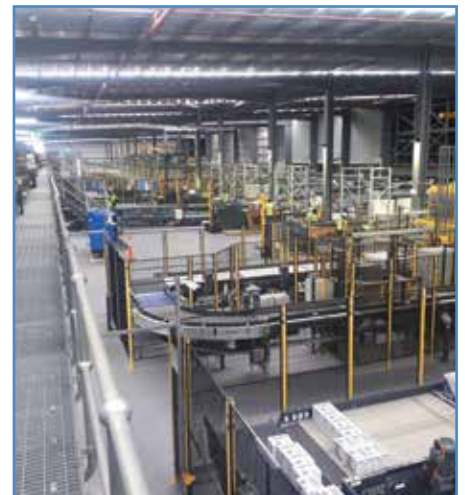
Part of the system in Melbourne

Hiking around LOTR 'Mount Doom' in New Zealand

Uluru, the famous rock in the Red Centre

About everything that happens within this black box was within our scope, and automated as much as possible.

Living down under

Although a lot of the work was done remotely, I got the opportunity to go to Australia. G'day, mate! One part of the job was to validate that all the bits and pieces of hardware and software would work together in the way that was agreed with the customer. Another part was to explain to the customer how the system works, and how they are supposed to be using it. As most of their employees don't have a very technical background, being able to come up with analogies between the automated system and 'normal life' again turned out to be really helpful.

In the end, I've been working in Australia for about one year, during which I've also been able to enjoy several holidays. As I've been living in the South East of Australia, most of my free time I've spent around that area, but I've also been in the Red Centre, with the famous red rock 'Uluru', as well as on the island Tasmania and to New Zealand. Since these locations are quite some distance apart, they all really had their own atmosphere and pros and cons. But they also shared a similarity which I've really loved, that is the vast nature with great views and interesting animal encounters, which you could quite often enjoy without running into other people. The only downside of visiting all these beautiful places, is that the Dutch nature now seems rather boring to me.

Looking back

So what did EE bring me to get to where I am now? Although I'm not using any specific technical knowledge from my studies, being able to know how to approach and analyze a problem is essential for my job. Furthermore, being able to make a bridge between technical and non-technical people is something I still use a lot, and enjoy doing. For both of these skills, a good foundation has been laid while studying Electrical Engineering. Apart from that, all my closest friends are people who I have met during my time at university, and they still play an important role in my life.

Looking ahead

I'm not the type of person who will plan what my life will look like over the next decades, but I do like to ask myself whether what I'm doing right now is still making me happy. As long as that is the case, I'm still in a good place. However, when I'm in the same place for a long time without any new challenges presenting itself, then probably it's time to start looking for something new again.

Having said that, if you had asked me five years ago to paint a picture of what my future would look like, I would have never expected to be working down under for such a long time. I don't believe I could have planned for that to happen, but it really has been a time I very much enjoyed. So, my advice to everyone reading this would be to open up to new experiences and aim high, then I'm sure that whatever the future will bring you, it will take you to a better place. ∎

Koala mother and joey in the wild

Hike with a rewarding view

Meet Thales!

Meet Frank

Frank studied Electrical Engineering at Saxion Hogeschool in Enschede, and has now worked at Thales for almost ten years. He started in 2009 at Thales right after his studies. "I started working here as a system test engineer. In this position I was responsible for drafting processes, testing systems and detecting errors in systems."

When Frank first began working at Thales, he only possessed the basic knowledge. After ten years, he started in a new position as IVVQ manager. "IVVQ stands for Integration, Verification, Validation and Qualification, which means that I'm responsible for the whole test process. This includes the moment that a product is built, assembled, then picked up to the product and finally, delivered to the customer."

Do you like your job?

"I'm in this position for one year now, so my current function is still a bit new to me. However, the test process as a whole is not new to me. That's what I've been working in since the beginning of my career at Thales. And now, I am responsible for a whole team. But what I overall experience at Thales is that I get a lot of challenges during my work and every day is different. For example, at one moment I am working with software and the other moment I'm working with hardware. I sometimes joke and say: one moment you are the plumber, the next you are an electrician and then you have to get to the system with your laptop to fix something. That versatility positively affects me."

What do you think of the corporate culture?

"At Thales there is a very open and casual atmosphere. Very relaxed actually. Many colleagues have also become friends of mine, because we often have to go abroad in our job. When you are on a work trip, you and your colleagues spend a lot of time together. Perfect to get to know each other a little better and build a connection."

Meet Ellen

Ellen studied Applied Physics at Saxion Hogeschool in Enschede. She has only been working at Thales for six months now. "Before I started working here, I did my graduation assignment at Thales. During my graduation internship, I worked on the thermal level, so I started working with dry air. We want the Thales systems, for example the radar, to continue to function optimally even in warm climates. After I graduated, they offered me a job, so I had the opportunity to stick around."

From July 2018, Ellen started as a Thermal Engineer. "I did not continue my assignment when I started as a Thermal Engineer, but I do notice that I can apply the knowledge to my new position. My graduation also helped me to get to know the company Thales itself. For example, some basics about the internal processes and which people I can ask for help."

What do you find characteristic of Thales?

"The openness of people. Everyone wants to help you wherever necessary and people are very friendly toward each other. Sometimes a colleague reaches out to you to ask you to join a certain meeting, just because it might be important or useful for you in the future. Your co-workers really want to think with you. It makes you feel connected to each other as a team. You also know that you have many opportunities for growth within Thales. People are being stimulated to develop themselves as much as possible."

Can you hold your own between all those men?

"We currently have two female interns at the department. So that's nice! But normally, I would indeed be the only woman. I am not really bothered by that. I don't have the feeling that my male colleagues look different at me because of the fact that I'm a woman. I feel part of the team and they are taking me serious. ∎

Puzzle

Complete the pattern

In the first picture, you see several pieces that can be used to fill a 5 by 11 grid. In the next pictures, you see a 5 by 11 grid with some of these pieces filled in, but part still left empty. It is your task to fill these empty places with the pieces that are left over from the first picture. Every piece can be used once and while the pieces can be rotated, you cannot change their shape. The solutions can be found on page25
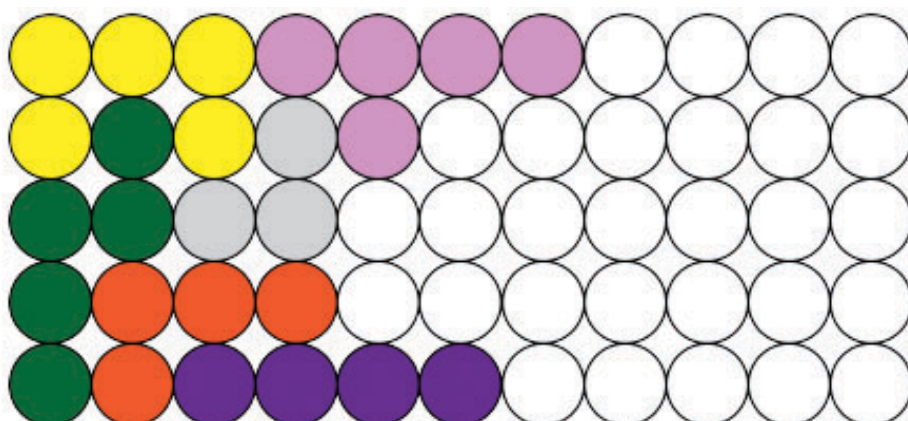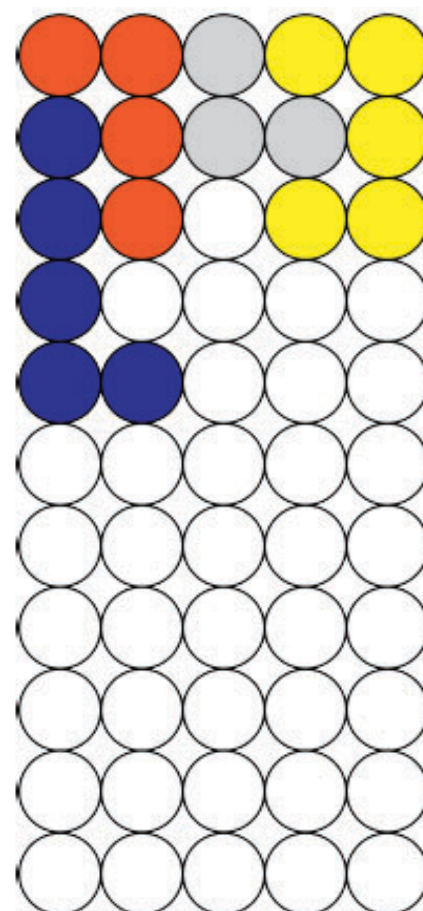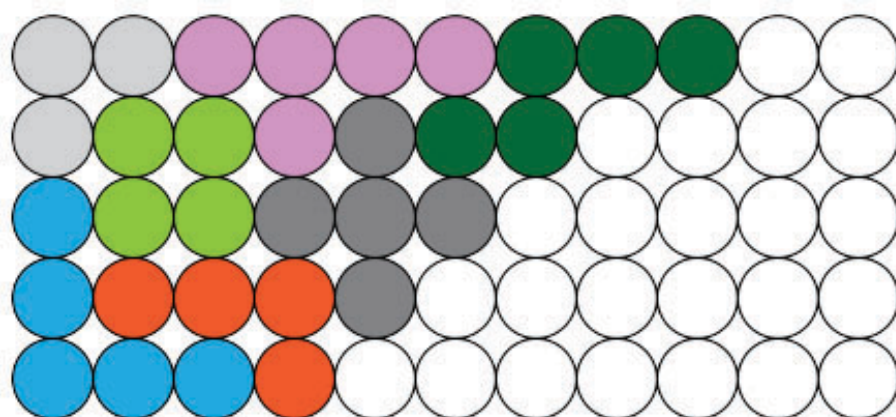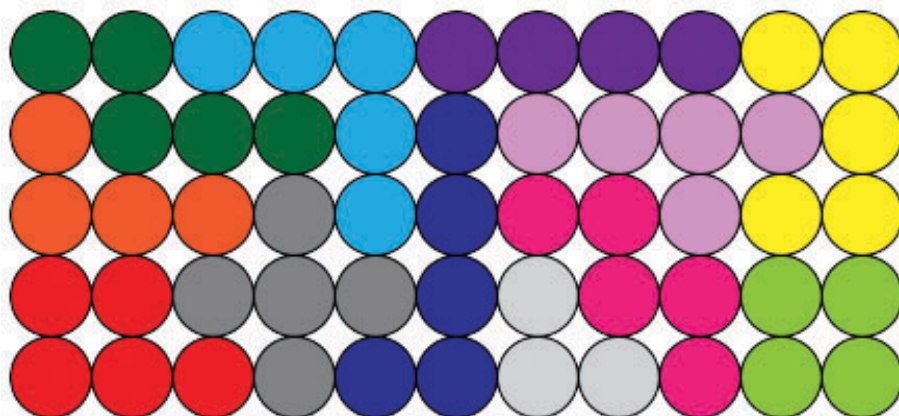
Photo contest

After the successful first edition of the photo contest, the photo committee of Thor decided to start a new edition with lots of new and fun themes. With the themes winter wonderland, colour, frog's perspective, electricity in daily life, architecture and art, the participants were once again invited to take a break from their work and go out to shoot the best picture they could get. The winners were decided by a vote on the website or, for the special electricity in daily life theme, which was organized together with the department to promote the NSE (National Student Inquiry), by a jury.

Winner of week 1, Winter wonderland: Mayk Thewessen

2nd place week 1: Milind Tripathi

3rd place week 1: Jasper Zwartjes

Winner of week 2, Colour: Cornelia Schmitt

Winner of week 3, Frog's perspective: Gerbrand Wit

Winner of week 4, Electricity in daily life: Alexandra de Boer
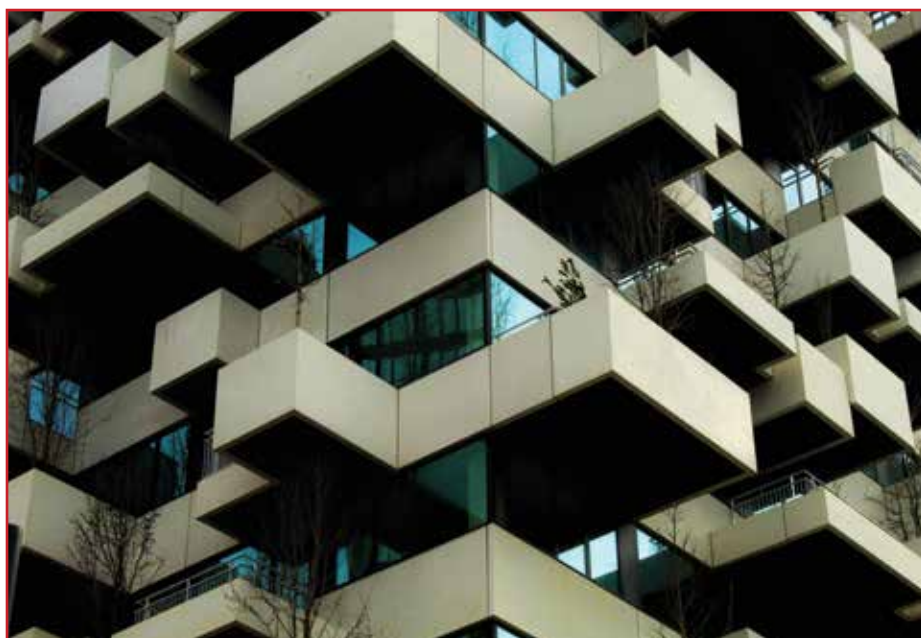
Winner of week 5, Architecture: Bram Lustenhouwer

Winner of week 6, Art: Fer Radstake

2nd place week 6: Gerbrand Wit

3rd place week 6: Jurgen Kok

Photo contest

2nd place week 2: Sonja Babac

2nd place week 3: Mariska van der Struijk
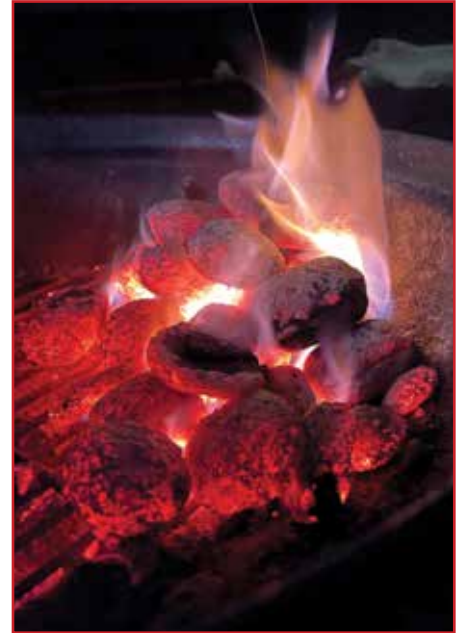
3rd place week 3: Ilgaz Tokuçoglu

3rd place week 2: Bram lustenhouwer

2nd place week 5: Nimr Abbasi

2nd place week 4: Roel Wijnands

3rd place week 4: Bram Lustenhouwer

3rd place week 5: Mariska van der Struijk

Puzzle

Black holes

Unfortunately it is not as exciting as real black holes, but we still have a neat puzzle to keep you occupied for a bit. The goal is to fill in the white circles, making them black holes, such that the number between the circles matches with the amount of adjacent black holes. The solution to this puzzle can be found on page 25
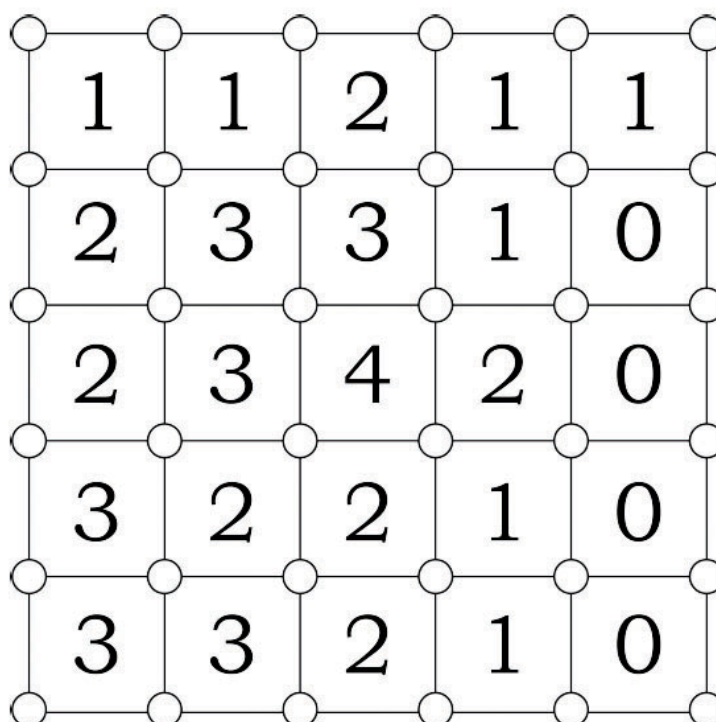
Sudoku

Something that you can't miss out on in your summer holiday, is making a sudoku of course, so you can find one on this page. Normal sudoku rules apply here. You can find the solution on page 25

Antifragile technology

By: Jan Vleeshouwers

Robustness is an important design objective for technology, so Nassim Nicolas Taleb's 'Antifragile – Things that gain from disorder', has been on my reading list for quite some time. Taleb wrote the book in 2012, and it became popular quickly. The idea of antifragility is attractive. It is one step from fragile to robust, and the next step is to antifragile: antifragile objects thrive by disorder. Imagine that our technology would be like that.

Diving into Taleb's account of antifragility is a journey with obstacles. Not because the book is voluminous (which it is), but because its core message could have been told in 50 pages, perhaps even less. Large parts of the book are side paths. There are nice little anecdotes, but much more often, Taleb takes the opportunity to scorn and humiliate his adversaries, of whom he seems to have plenty. What also distracts, is the casual showing-off: unnecessary big words, some extravagant math, semi-jokingly rephrased concepts with no other apparent aim than to devaluate them. There is little respect in this book for what others than Taleb have achieved.

But let me try to get to the core of the book nevertheless. In its essence, antifragility is a property of 'things', as the title of the book expresses. Things are subject to an environment which is prone to more or less random change. Their reaction to these changes may differ. Some things break, more or less easily; these things are fragile. Other things are more indifferent to change, they will keep working or living; these things are robust. Finally, says Taleb, there are things which actually gain from random changes in their environment. These things are antifragile. Taleb uses the word 'disorder' in a dynamic sense: 'things' are embedded in world which behaves unpredictably. The antifragility thesis states that these unpredictable surroundings may actually be favorable to things.

Now what are these antifragile things? And what is the exact profit they obtain from disorder? Quite unexpectedly, the book touches upon these questions only superficially. It states that antifragility is behind "evolution, culture, ideas, revolutions, political systems, technological innovation, cultural and economic success, corporate survival, good recipes (say, chicken soup or steak tartare with a drop of cognac), the rise of cities, cultures, legal systems, equatorial forests, bacterial resistance … even our own existence as a species on this planet", but I fail to see how these 'things' gain from disorder; there is no further explanation. Antifragility "determines the boundary between what is living … and what is inert …" This restriction to living 'things' is a little disappointing from a technical point of view, but perhaps 'living' should not be taken literally here, given the list of things cited above. Finally, when Taleb presents some concrete examples, he takes them from mythology: the Phoenix and the Hydra. Real-world antifragility is clearly not too obvious.

Taleb's intentions go beyond analysis; his wishes to present to us how we should deal with complexity. The behavior of society's complex systems (see the list cited above) cannot be predicted, so they all involve uncertainty and risks for who (or what) is exposed to them. Humanity tries to control and reduce these risks, but that is counterproductive. According to Taleb, intervening with the system results in ever larger but not less frequent system failures; what we should do is leave the system alone, so that the failures are smaller and less consequential. "And if you make more when you are right than you are hurt when you are wrong, then you will benefit, in the long run, from volatility (and the reverse)." It is easy to see that this originates from the financial world where Taleb's roots are. But Taleb generalizes to include all life's issues. "The mission is how to domesticate, even dominate, even conquer, the unseen, the opaque, and the inexplicable."

In taking up this mission, antifragility is the answer. Antifragility is the quality of a system to error relatively often but gently, as opposed to less often but catastrophically. This is what is meant by 'gaining from disorder': the system works better (i.e., to the greater welfare of humanity) if its behavior is more random. In Taleb's view, the quality of antifragility is built into complex systems, so we should not actively interfere with them to create it, but leave the system alone and let it function in its natural state. He takes this far. There is no need for specialized knowledge, simple inarticulate traditional knowledge will do. He marginalizes formal knowledge and university: "… [W]e know that collectively society doesn't appear to advance with organized education." "Education is an institution that has been growing without external stressors; eventually the thing will collapse." Technology figures as an example area of progress where formal knowledge is of little use: "… a very large share of technological know-how comes from the antifragility, the optionality, of trial and error, …". And "… the largest generators of wealth in America historically have been, first, real estate … and, second, technology (which relies almost completely on trial and error)." Of course, it is nice to hear someone advocate the special quality of engineering, but this sounds like a backhanded remark. Who simplifies technology like this, has no clue of what he is talking about.

The lack of examples and the simplistic antifragilistic views on education and technology make me wonder about this emperor's clothes. Technical systems are man-made, vulnerable and imperfect, and they need regular attention and maintenance to keep functioning. Although we are capable of creating technology that operates quite autonomously, eventually everything will break if left unattended. This holds for all human creations, also for nation states, language and markets (some philosophers call these creations technical as well). Nothing man-made can be left to operate on its own for a prolonged time: it will stop working or become dangerous, or both. There may be antifragility in man-made systems, but that does not enter into these systems automatically, and if present, needs permanent attending.

Taleb suggests that nature is antifragile, because the evolutionary mechanism works with many small errors (variations) from which the fittest survive. But how nature would 'gain' from disorder?
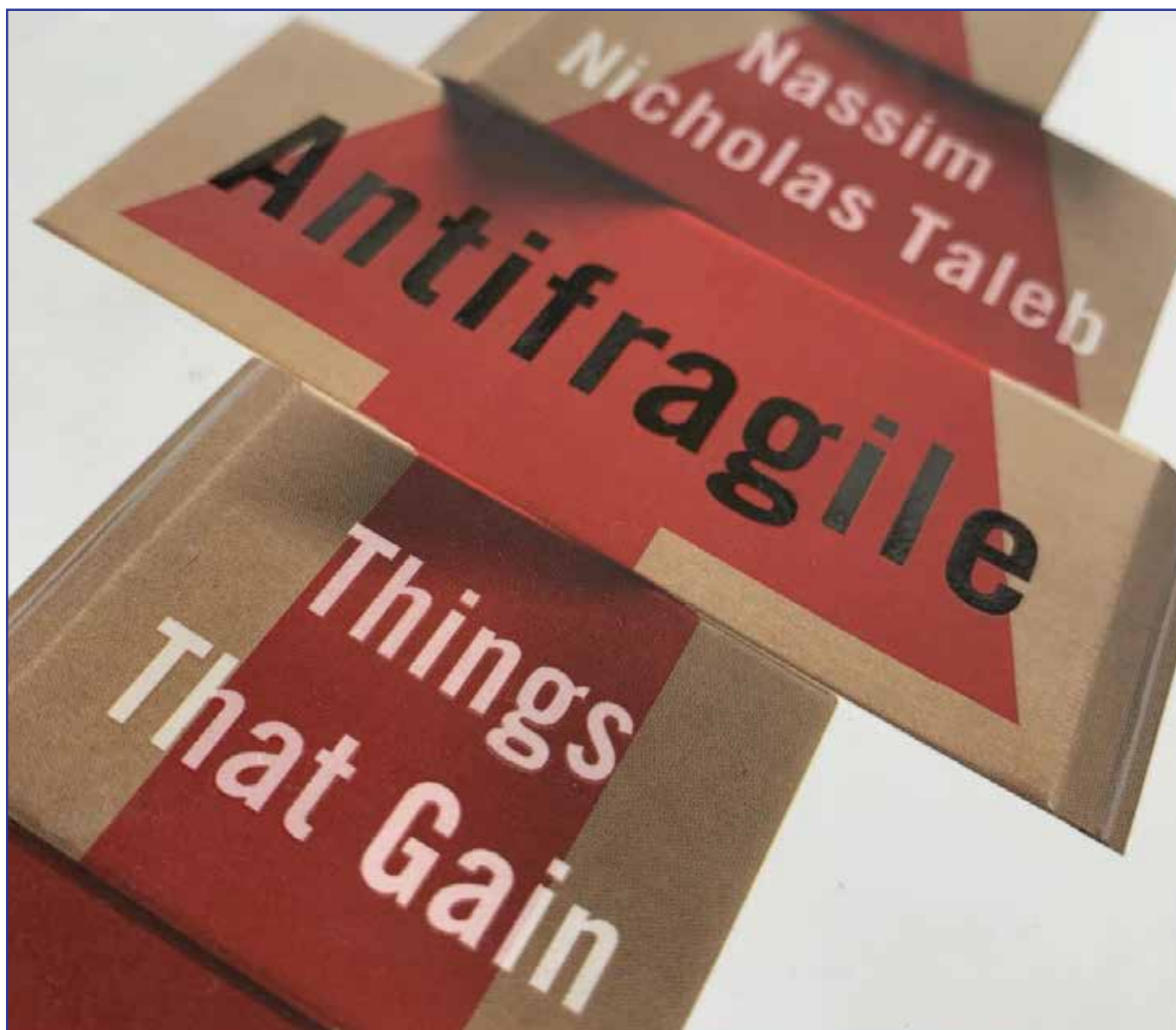
Attributing anthropomorphic properties to nature usually makes it more difficult and troublesome to understand how it works, so I'm hesitant to use the noun in this context. For the sake of trying: would nature's 'gain' be increasing complexity, or increasing biomass? I'd prefer to be safe and restrict antifragility to human creations. Nature is able to cope with change quite well, although still to a certain degree: life on earth will overcome mankind but will not be able to withstand the sun's turning into a red giant, five billion years from now.

Let me turn away from Taleb's romantic idea of achieving better functioning societal and technical systems ('antifragility') by relying on their built-in love for disorder and our everyday practical operating knowledge, and instead ask how to design and build systems which not just endure but are actively equipped to function in a volatile environment.

That man is able to make enduring creations is clear from history and archeology, but it is also clear that when abandoned, nature's wear and tear takes over. Societal constructs such as laws, religion and economy, use feedback to adapt to varying circumstances and have quite a long history. Technical creations which are explicitly equipped to handle a varying environment are of more recent date: they employ control systems and artificial intelligence. The general target of all these systems is to create stability in the presence of volatility. That comes at a cost, though: larger stability is almost synonymous with larger complexity, and more complex systems are definitely harder to design stably. Also, as a side-effect, complex systems invite manipulation, so that they may be tweaked to work for the profit of one but at a cost for another one; Taleb's crusade to fight this is understandable and just. But the answer is not Taleb's: essentially, to stabilize technical and societal systems and reduce side-effects, there is no choice but to turn to science and technology for solutions. The systems need maintenance, and need close scrutiny, preferably by making system knowledge public and educating a substantial amount of people to be able to understand them.

The systems must be under public control, precaution is relevant and a moratorium may be an important final resort. All of this is to a large degree scientific and technical.

The discipline of Electrical Engineering loves complexity, so it is not difficult to find research activities in the department which aim at making robust systems in increasingly variable environments. There is the Phoenix project of Peter Baltus, which tries to use accelerated evolution-inspired mechanisms to make his monitoring marbles measure increasingly accurate and relevant properties, although they are quite blank when they initially enter the system. In various areas of communication, signal processing and energy systems, the notions of adaptability and unsupervised learning have entered into the design process. The 4TU Resilience Center "wants to develop, apply and disseminate knowledge, methods and tools for making societies more resilient". By "resilient", the Center means "the ability of a socio-technical-environmental system to sustain, improve and innovate its key functions – through absorbing, reacting to, recovering from, adapting to or reorganizing – in response to chronic stresses, abrupt shocks, and disruptions." The Center "focuses on engineering solutions (technical solutions

and system designs) in interaction with social-ecological systems", exactly those systems which could use a little antifragility in order to prevent disasters.

Mitrofan Curti is a member of the 4TU Resilience Center and is assistant professor in the EPE group. His perspective on resilience is that we should try to incorporate into our technical creations more and more of the intelligence currently only available to their designers. In the 4TU Center he is one of the few involved in hard-core engineering, and resiliency in this context is still a concept which has a vast interpretability emerging from many disciplines. But the target, as he sees it, is better performance. Resiliency starts with technology which is robust and able to sustain large stresses. But if you take this one level higher, you arrive at technology which is sensing its environment and is able to adapt its way of working to external disturbances. If this reaches some level of sophistication, we might attribute awareness or intelligence to these systems. They may appear to "learn", and systems may even include actuating mechanisms to repair themselves.

Curti is convinced that the route towards resilient systems is by stretching the design scope: to be able to label a device

as a system, you need to see it as small modular building blocks and simultaneously address the system design at a higher level. To some extent, he is working in this direction with ASML and ABB which is building transformers for emerging electricity grids, but there is still a long way to go before the resilience concept is implemented at the component level.

What about systems which 'love' disorder? Mitrofan acknowledges that learning systems need a rich, varying environment, or else they will learn nothing. But he doubts whether that matches the concept of antifragility. It also seems that the boundaries between the definitions of resilience and antifragility are quite gray. It is unclear what the advantage is of designing technical systems which 'love disorder'; designing them to be robust against disorder is already difficult enough, and systems certainly do not obtain antifragility by themselves.

The prologue of Antifragile states that "We ... don't want to just survive uncertainty, to just about make it. We want to survive uncertainty and, in addition ... have the last word." However true that may be, we'll find the answer in resilience rather than in antifragility. ■

The first online excursion

By: Lucas van Bemmel

Kvasir is known for their lunch lectures and excursions, in pre-corona times we would have almost weekly lunch lectures with the beloved free sandwiches. But now the lectures and excursions cannot be held as usual, we are trying to find new ways to still be able to bring the lunch lectures and excursions to you at home, and so are companies.

Tata Steel was the first online excursion. They created a detailed 3D map of their entire factory grounds which we were guided through. The speaker showed us the process from the start, the ores coming in with boats at the harbor, to the manufactured steel at the end. Each aspect of the process had more detailed information as well as pictures to show how it looks in real life. They also worked

with QR codes leading to 360 degree videos. Which helped visualize the enormous scale that they operate at.

The 360 degree videos made it feel like you were really at the factory and helped to give a picture to what the speaker was talking about. This made it possible to have a lot of interaction between the listener and the speaker, which can be hard via an online platform.

After the guide through the entire plant grounds, one of the process engineers gave a talk about what can be done as an engineer at Tata Steel. Due to the factory grounds being very large, it is actually operated as a combination of different smaller factories, each factory with their own directors and goals. This makes factory-wide optimization not an easy

task. That is why a special team exists that tackles the challenges associated with this task. It involves talking to the different operators of the different operations within Tata Steel, and convincing them that certain changes might be negative on a local scale, but factory-wide will result in an optimization.

Although the lectures and excursions are in a very different format, they are for sure still very informative to join. They can help you get a better picture of what you can do after your studies or might even help you find an internship. So, make sure to keep an eye on the Thor site to see which lectures or excursions are coming up, so you can join them! ■

Showing the campus life

By: Esther Maas and Koen Dijkstra

As we all know, it is almost the time of year where we welcome new students to our university. However, it has been difficult for the soon to be students to grasp what student life is about and what it has to offer. For those who were enthusiastic to learn about student life, the university organized a day where 6 vwo students could come to Eindhoven and experience the campus-life.

The tour started in Atlas, where the participants were welcomed by a couple of Thor members. Our stand was easily recognizable by the sky-high banners proudly showing off the Thor logo. Of course, the stand couldn't be complete without an electro related project to show. To get into the mood, the participants were told about this project, which was of course, Mjolnir. After this, the Thor members took the soon to be students on a tour over the campus. During this tour, the first outside drinks were being held all over the campus, which helped show the 6 vwo students how life is on campus in Eindhoven. The campus tour ended with the arrival in the beautiful Flux.

The next stop was a quiz, which was held by a Board member and a candidate board member. The participants were tested on their basic knowledge of student life. The questions were about topics such as the meaning of the Batavierenrace and what a Dies is. There were also questions more focused on traditions in Eindhoven, like the annual MomenTUm festival and the introduction week for first year students. The

last question even had a demonstration of the principle "brassen". A candidate board member lost his tie and the Board member made sure to remind him of the importance of keeping track of his belongings by safekeeping his tie until he earned it back.

The final destination of the activity was, of course, our very own bar, Het Walhalla. The participants were welcomed by our President with a drink and some snacks. The President, accompanied by the candidate President, made the participants excited about our study association by showing some of the best activities organized over the past years. The 6 vwo students were told about the time we played Mario Kart in real life on the campus and the annual Dies pie opening. They were also made aware of the educational benefits of joining a study association. To end the evening on a high note, the roof terrace was shown. The activity was a big success and we will be welcoming a lot of very excited students next year. ∎
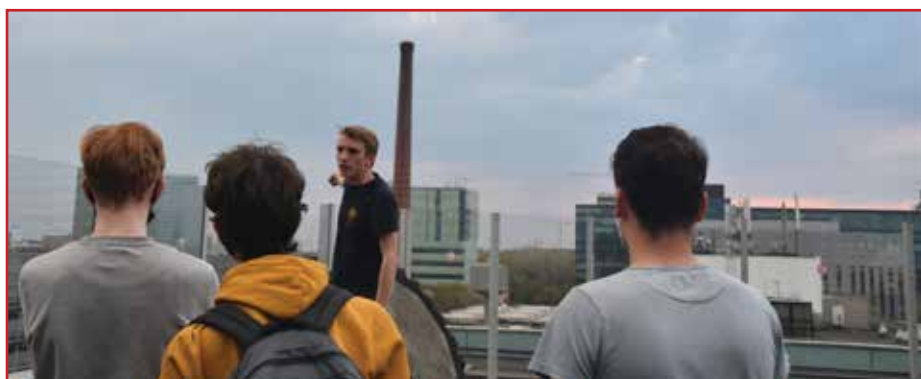
Student well-being

By: Lucia Kalkman

I am Lucia Kalkman, the Commissioner of Education of Thor, but also the first one responsible for well-being. This year, well-being has become more and more of a hot topic, and, in some way, that is at least one good thing what we can thank the whole COVID situation for. Well-being should have been at the table for way longer, but now, it finally has become an issue. Over the last year, we have seen that a lot of students indicate that this is a tough time for them.

This year, in November, about half of the students at the department of Electrical Engineering gave their mental well-being an insufficient grade and the waiting time for the student psychologists is about six to eight weeks. Simply said, that is not okay, and we cannot just do nothing and wait until everything is normal again. Luckily, the university sees this as well and is trying to take action. Now I could tell you a lot about all the initiatives that are set up and will hopefully start soon, but I wanted to reach something different with this article. I want to raise some awareness for the issue, and also show you that the words you say have consequences. To start off, I want you to read the following comment, and think what the consequences of words like this are.

Online activities brought some relief

'Keep in mind most of the students do not behave according the COVID regulations. I have seen a lot of incidents the last two partial lockdowns. For this moment there are hardly students in Flux.'

I read this comment in the minutes of one of the meetings the Department Board has where they invite the entire staff. This was a comment of a staff member after the Department Board announced that they would start opening up Flux for students more and more. When I read it, anger rushed through my body. most of the students are trying their best to behave according to the regulations and do sacrifice a lot for it. Furthermore, students are not the cause of the most incidents in Flux. When I calmed down a bit, part of me also started to understand the comment. I have also seen students not behaving according to the regulations and have been frustrated over the same thing. I can image when you don't have a lot of contact with students, it is easier to say things like that. However, these comments do have influence on the students who are still trying, and that is why I want to give you a little bit insight in how tough this period is. Beware, I am not talking on behalf of all the students, but this is the experience of me and what I have seen in the people around me.

As a student, you are not doing this for yourself, as getting COVID isn't any more dangerous than getting on your bike in the morning to get to the university and the risk isn't high enough to be really afraid. Most of us behave according to the regulations because we don't want to risk other people's lives. We want to keep the people around us safe, and don't bring any risk to our parents, grandparents, the parents of our friends and a lot of other people. However, this means that the past year has been very difficult. You don't want to visit your parents as often as you did before, you have to do a lot of studying from your own small student room and most social contact is prohibited, and let's be honest, online is just not the same as in person. I myself have tried to behave as much as I can according to

Extra lessons for Electronic Circuits 1

the regulations, and I have discovered that it is impossible, or at least for me, to always do so. Sometimes, you just need to see your friends, in person. Most of us don't have big houses or anything, so keeping distance isn't really an option most of the time. Meeting outside also isn't always an option with the weather we have here. So, unless you can go without social contact, you needed to break the rules. That doesn't mean that I just stopped thinking about the people around me, but I think the mental health of students should be an important thing to think about as well.

For students, typically 18-25 years old, this is the time of their lives where they discover who they are. Moving away from your parents, finding new friends and starting to discover who you want to be. For us, it feels like we are not allowed to live anymore, like someone pressed pause and we need to wait until someone decides that we can press play again. What makes it even more difficult is that everyone keeps announcing that we will press play very soon, and then postpone it.

But enough about the difficulty of this time. What I want to ask in this article is to start trusting each other again. There

are always people who stopped trying, but is it so hard to believe that most of us are really trying until we can't anymore? Is it really so hard to believe that most of us are trying to be there for the ones around us?

This call isn't only meant for the employees, I have also heard enough students making comments about lecturers not even trying, and about the university being too strict and about being forgotten. Although there might be some truth hidden in this, I think we need to start believing that we all have the same goal. That doesn't mean that mistakes are never made and that every decision is fair. But we can believe that

everyone has the goal to get the most people in the best possible shape out of this situation.

As a final word, I want to put in that we need to show this, we need to express sometimes that we are proud of the people around us, for everything that they have done the past year for each other. Keep looking after each other and be there for the ones who need it. I trust that you can all make the tradeoff between the mental health of you and others and sticking to the regulations. Let's keep doing everything we can, and remember that, hopefully, the end is near. ■

Answers Puzzles
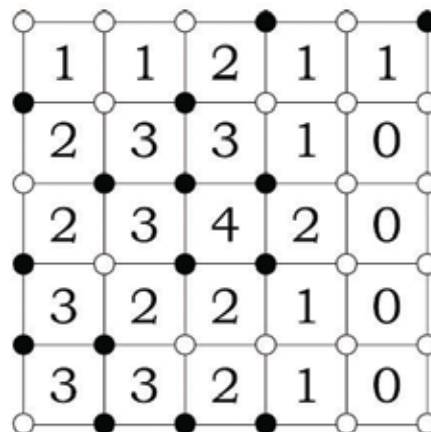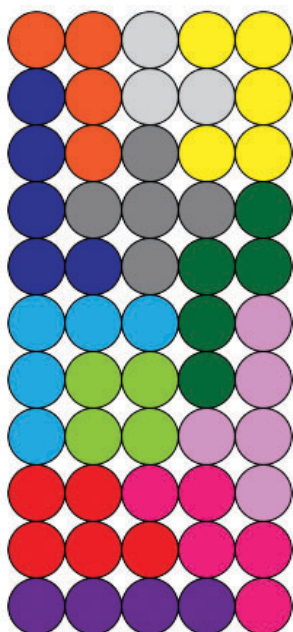
The GrEE/AT pub quiz

By: Bram Lustenhouwer

It has been a year already since we moved to online education. By now, a year of watching lectures online, working from home and not seeing friends in real life is taking its toll on students and employees. We as students have not seen our lecturers in real life for a year, and hence, missing the connection and discussion with the lecturers. But the other way around it happened as well. Lecturers have given lectures online, while not seeing many students as not many of them put their cameras on during the lectures. Therefore, we wanted to organize an activity where students and the department can reconnect again, in a fun and accessible way. Hence, we started to organize the GrEE/AT pub quiz!

But who are 'we'? The pub quiz is organized as a collaboration by students from Thor, StudentBody and the student member from the department board. As we started to organize this pub quiz, we wanted to do it different as was normally done. Normally, you would subscribe yourself as a team, where you already know the rest of your team. But that doesn't solve the problem of not connecting with your lecturer or students. Hence, we decided that you had the opportunity to subscribe with one friend, and one friend only. Some people tried to loop the subscriptions

in that way, but we still managed to mix up all groups, ending up with Bachelor students, Master students and department members (which included PhD students) in every group!

But what kind of questions would be good so that every team has a change to win? Of course, department members are not only lecturers, but also people from quality assurance, HR or any other sub team from within our department. They did not all take Electrical Engineering or

Automotive Technology classes, and do not always have the knowledge to calculate the total resistance of a circuit. But, also first year students, who did do some courses but do not have all knowledge yet. Hence, we kept the number of calculation questions on a minimum and had some questions about general knowledge and music. Apart from that, an Eindhoven and TU/e round was present to test the knowledge about our beautiful city and university. For the music round, we used the format from a radio show, where you start with an intro from a song which lasts 30 seconds, then move on to one with 28 seconds and so on, until you reach the 2 seconds. We did want to make sure there was a link between all numbers, hence every number has something in the name which links to electrical engineering (Hence a number from AC/DC or a song called electricity). For the Dutch people among us, you can link all the songs to Electrotechnique by the Jeugd Van Tegenwoordig.

On the 29th of April, it was time for the pub quiz itself. We presented the quiz in the Blauwe Zaal in Auditorium and were able to use the filming equipment of the university itself. To show the collaboration between the students and the department in this event, our program director of the Bachelor, Sjoerd Hulshof, was also presenting this pub quiz, together

with Bram for the first three rounds and with Jules for the latter two. In total 50 questions in the different rounds were presented, and some bonus questions were included in some of these questions. The quiz attracted 80 participants, and the distribution of students and department members was great. This resulted that we had 13 teams in total, all with different backgrounds and skill sets. As far as we have seen, the groups really bonded well together and a lot of fruitful discussions came from the presented questions.

And now for the prizes: we arranged prizes for the top 3 groups. In third place, you just did not do enough to became first or second, so we translated that to the well-known Dutch saying "meedoen voor spek en bonen", literally translated as participating for bacon and beans. So, the prize for third place was literally candy bacons and coffee beans. For the second place, you were just a little short to becoming first, and hence all participants in second place are gifted a book voucher. With this voucher they can gain more knowledge for the next pub quiz by enhancing their general trivia in the

form of a book. The team that came in first has shown that they know all about Eindhoven, the university, electrical engineering and some random knowledge. So, they get a tea light holder which has a city highlight from Eindhoven. When putting on a tea light, the shadows of that highlight will be projected onto the wall. If there was a tie, the team which answered closest to the number of stairs steps that Flux have would have won (thank you Jos for counting all 937 of them). In the end, the team in third with 35.5 points was: "Hemel van E-Hoog". In second place. with 38.5 points. was: "Marijn and his Angels'. And the first place with 41 points was: "The Tesla Fanbois"!

Of course, we kept track of some stats especially for you. There were some questions no team was able to answer correctly. These were "Place the historically important scientist in chronological birth order", "How many publications were made by our department in 2020?" and nobody knew that Donald Trump was talking about Rocketman in one of his tweets. There are also some questions that everybody got correct. Everybody knew how to calculate the value of x

and y in a matrix (luckily) and knew the questions "What is the smallest country in the world?" and "What is the biggest technology company in South Korea?". Everybody also knew the album from Pink Floyd and the song "Thunder" from Imagine Dragons. Overall, the best made round, with an average score of 8.86 points, was the 5th round, which was the music round. However, the worst made round was the random trivia round, with an average score of only 5.64 points.

Now that the quiz is done and the winners are known, it would be nice if this can be made a tradition, by organizing a large pub quiz for the whole department, and mix the groups in order to get more collaboration between students and the department. And hopefully it will be in real life again in Het Walhalla. It was a pleasure organizing this pub quiz, and we want to thank Sjoerd Hulshof for presenting with us and Sander for providing us with all the equipment to make this online version possible. ■

In RetrospecThor

By: Max Schoonderbeek

At Thor, a board of the association is usually referred to by their board number, ranging from the 1st board at foundation, up until the current 64th board. As we've recently passed the golden boundary of 50 Connecthor issues, we're closing in on 'recent' board years. In the upcoming Connecthor issues, we ask a member of the board matching to the issue number to look back at their time at Thor. What has this former board member done at Thor? Has being an active member been a benefit to life after Thor?

For this 54th issue, Max Schoonderbeek, Vice-President and Commissioner of External Relationships of the 54th Board of e.t.s.v. Thor, has written about his experiences in collaboration with his fellow Board members, Tom van Nunen and Anjo Peeters.

I am honored to write an article for the 54th edition of the Connecthor. And I am not the only one from the 54th board of Thor, since Anjo and Tom are also contributing to this edition of the Connecthor. The board year at Thor still seems recent for me, however, it's already 10 years ago!

During the introduction week, I was first brought into contact with the Board, candidate board and active members of the association. I have to say that was pretty overwhelming for me, because everything seemed to be possible. During the introduction week, we performed technical projects, rowed in the middle of the night and partied till the morning sun rises, and everyone participated. It was wonderful to belong to a group with so much energy! The students joke with each other, inspire each other, break barriers, and all this creates an energy-rich whole. With the right amount of challenge, you can tackle anything as a group!

I didn't have to think long to become active in the Open House Day committee (now Ivaldi) and the StudentBody year council. And after that, I didn't have to

think twice about running as candidate for the next Board. On a very early stage, Anjo and I were fantasizing about who else would want to be in the board with us, and who we needed to convince.

What I remember most about the board year is that it was a turbulent and social year. Every week, apart from the exam

weeks of course, we were having several parties . And with all the good intentions: I was unable to match visiting the same amount of parties after returning to study again. Going to a party during the board year also had several goals: Firstly, you have the opportunity to make contact with your members, and secondly, there was always something to be arranged or coordinated with one of the other associations.

And what do you really learn from being an active member of Thor? Basically, a wide range of social skills, which normally wouldn't come your way during you study. I will explain a few below.

People skills

The biggest difference between organizing and studying is teamwork. You find out that not everyone has the same standards as yourself, but you still must work it out together. For me personally, trust is very important. For example, if you indicate that you are going to do

Entertainment Technology

something, you follow up and you let people know what the status is. This can however also lead to disappointment if people don't meet your expectations.

During my time with Thor, I came across some interesting situations to set up activities with volunteers. For many volunteers, arranging an activity has a lower priority than passing a midterm test, submitting an assignment, or even the 'SOG' activities (Study Evasive Behavior). This leads to the fact that others take over and need to Thorganize the activity. Often, this works out fine but is not convenient for everyone. But on the other side, is it also difficult to throw someone, with proper intentions, out of a committee.

I learned from this that it's important to define actions concretely and make it clear when I expect a follow-up. Even within a company, people have more tasks than they can accomplish in a certain amount of time, so everyone must choose and be clear about the things they can and will do.

Another people skill I learned to be important is related to the story I told you about the introduction week. Within a company, you regularly need to create a new team. Under normal conditions, people just do their job, but under pressure, it's important that a team can rely on each other. The best way to create a real team is with enthusiasm and energy, and the right amount of challenges. This really starts from the onboarding on a team.

Teambuilding works best outside work environment. It's somewhat more difficult to organize this in a lockdown situation, but with some creativity, it works out fine. We for example organize a cooking workshop every two weeks with some colleagues, organized by one of the team members. And the advantage of an international company, is that we get new recipes from all over the world, like India, China, Brazil and Finland.

Brainstorm

In technical projects during the study, I participated in several brainstorms to come up with technical solutions. This helps to identify different approaches. But I always felt that there is a limited set of directions, due to limitations they gave us.

But the moment you start an activity, the craziest things come up, since the whole world is open. During the brainstorm for symposium topics, all kinds of things were discussed, because who wouldn't want to know more about the technology behind space travel, smart grids or artificial intelligence (at the time all of that received less attention). In the end, we choose as a committee what we wanted to know more about, since that made us enthusiastic and helped in making others curious as well.

Virtual and augmented reality were just emerging, and there were not a lot of articles published about it yet. We were interested in how this can be applied to improve quality of life. The moment you start asking around, you find out that there are quite some companies that are doing research about using VR to overcome trauma, perform operations, and train people.

Brainstorming about activities also brought us the idea to set up a competition against mechanical engineering: How can you best measure strength? By throwing tree trunks like real highlanders! Here I learned that you can implement the craziest ideas with enough enthusiasm and a little tenacity.

Friendship

I know it's a cliché, since the previous editions also brought this up, but friendship is one of the most important things you keep after your time at an association. Since you face so many challenges together, you get to know your friends within the association very well. You learn about both the nice and less pleasant qualities of your friends, which only contributes to the amount of jokes. We still go out for monthly drinks with the 54th board (at Het Walhalla when possible) and we go on a yearly holiday together. Last year, we went with a group of fourteen friends on a holiday to Ecuador to celebrate the marriage of Rob Verhaart (also from the 54th board). This is really one of the most special holidays!

And one friendship is very special: During the parties while I was board at the association, I was coupled to a nice lady, whom I happily married a few years later. Celebrating this with my friends was super special. ■

Puzzle

Answer and winner of the March puzzle
The answer of the March puzzle can be seen in the picture.

The winner of this puzzle is Marjolijn Kleijer! However due to corona, the pie has not been handed out yet. Luckily, with the restrictions loosening up, you can expect it soon!

New puzzle
Almost everyone knows the pleasure of making a relaxing crossword puzzle on their holiday, so for that reason, we have one for you to make this edition! If you have crossed out all words, you should be able to form a sentence. Definitely make this puzzle during the summer, but don't forget to send in the sentence to "ConnecthorREDACTIE@tue.nl" before the 23rd of July, if you want to have a chance at winning a pie!

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ANTIFRAGILE   PROFESSOR
AUTOMOTIVE   PUBQUIZ
BAR   PUZZLE
BEACH   READING
CAMPING   RESTAURANT
COCKTAIL   STUDENT
CONNECTHOR   SUMMER
DEPARTMENT   SUN
ENGINEERING   SWIMMING
EXAMS   TERRACE
EXCURSION   WALHALLA
FLUX   WELLBEING
OFFLINE   WIE
ONLINE

Crooked cauliflower

By: Tom van Nunen

Every now and then things just don't go as we planned, because it's just the way it is, or because we ourselves made a mistake. Not seldom, a stupid mistake. Let's say you're working in the lab, and the results are just not as expected. After a long and intense debug session, you find out that one of the cables is simply not plugged in. What would be your first reaction?

That's right: swearing. Nothing brings more relief in those cases than shouting a few curse words at the darn situation. Just a week ago, I realized that a I made a stupid mistake in a series of measurements, and no one and nothing was to blame except for me. My first reaction was: 'Jesus, what a retarded sack I am!' (for clarification, the exact Dutch words were 'Jezus, wat ben ik toch een achterlijke zak')

This exclamation of pure anger got me thinking: why do we use certain words as swearing words? Why is it so powerful to refer to someone (in this case myself) as a retarded sack in the Dutch language?

When I call someone a sack (zak) (optionally filled with hay) or a box (doos) (which can be dumb, but not filled, apparently), it's a bad thing. However, if I refer to someone as a closet (kast), it's a compliment meaning that this is a person with a strong physique. I mean, I get that calling someone a turd is considered swearing, but what makes other words fall in the same category?

It gets even better. In the Netherlands, we have many ways of swearing with food. For non(-native) Dutch speakers, pay attention, as this might come in handy some time. You can call someone a meatball (bal gehakt), poffertje, frikandel, pancake (pannenkoek), oliebol, or a weird haricot (rare snijboon).

I don't know why, but there's something that sparks my attention: all those words are items from the traditional Dutch cuisine. In fact: three of them are actual Dutch words and can arguably be considered food originating from the low lands. Did you ever hear someone get called a pizza, couscous, borscht, or a hamburger?

Even if you did, I bet it wasn't in the Netherlands. Another thing is that those words don't carry emotional ballast, but rather just mean something like 'I'm not spending my time on you'. Could this be a coincidence, or is this somehow normal for swearing with typical Dutch food?

We are not the only ones who swear with food-related words. Apparently, many other languages have this feature, such as Russian or German. In the latter, you can call someone an insulted liverwurst (beleidigte Leberwurst). It does have its charm in a certain way, don't you think?

I kind of like swearing with food: it's not deeply insulting, and it doesn't really carry a deeper emotional load, contrary to swearing with diseases, which in fact i

is a typical Dutch thing to do, for some mysterious reason. Thinking about it: I'm against swearing with for example cancer, which a lot of Dutch people do, but I must admit that I catch myself swearing with phthisis (tering) or typhus (tyfus) every once in a while. Maybe I'm being a hypocrite, maybe my morale works differently for diseases that are rare to me, or maybe I just shouldn't think too much about it.

I challenge you to come up with a set of creative swear words with no emotional ballast, such that next time you mess up in one way or another, you can call yourself a crooked cauliflower or a broken gravy spoon, which will not only relieve your stress, but might even grow you an instant smile. ■

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