

BEHIND THE SCENES

BITS

ISSUE 04

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Check out more exciting stories
on #WeAreSUTD blog at
wearesutd.sutd.edu.sg

 sutd.edu.sg

  SUTDsingapore

  SUTDsg

SO YOU THINK YOU KNOW SUTD?



Every year, our senior-year students of different majors will work together for their Capstone to design solutions that tackle real-world challenges faced by our industry partners. At what we call our Capstone Showcase, they present their ideas and prototypes as a culmination of their journey at SUTD.

Seen here is NURSERY, a modular shelving system with a focus on incorporating nature indoors. It brings plants into classrooms through automated systems and fosters a greater connection with the environment.



SUTD ANSWERS THE *REAL* QUESTIONS



SUTD is a very young university, what is its reputation like?

Well, we **topped the list of emerging engineering schools in the world** in a study* commissioned by MIT.

Also, we are ranked the **5th-most influential scientific research institution in telecommunications**†. SUTD was the only non-US institution to make the top 10 list, ahead of Princeton University and Carnegie Mellon University in the US. How's that for perspective? 😊

*"The global state of the art in engineering education" by the Massachusetts Institute of Technology (MIT).

†"The State of Innovation Report 2017" by Clarivate Analytics.



As with other engineering schools and programmes, are the number of male students at SUTD significantly higher than the females?

Not at all! We're proud of our gender diversity where 40% of our #SUTDents are females.



I'm worried that my grades won't make the cut and that I don't get a place at SUTD.

Don't worry! At SUTD, we have a **holistic assessment of all our students**. Grades are not the be-all and end-all, we look into every student's portfolio consisting of their CCAs, recommendation letters (by teachers), blogs and videos (optional) to assess if they're a good fit for SUTD.

We are inspired by students who pursue their passions and hobbies while juggling their academic studies! **This is also why SUTD does not have Indicative Grade Profiles!** 😊



I'm not sure what to expect of the culture at SUTD...

SUTD has a very **close-knit and collaborative culture**. A few main reasons for this are our multidisciplinary curriculum and unique pedagogy, and the fact that all students stay in the hostel and study in small cohort classes of 50 students in their first three terms.



I want to pursue my own interests but I am afraid I don't have the time to do so...

Wednesday and Friday afternoons are set aside for you to participate in Fifth Row activities (aka CCAs) and pursue your own passions.

The **Independent Activity Period (IAP)** in January is an extension of this objective! Before the new semester begins, you can participate in a myriad of activities; from conducting classes to share your knowledge on an area you are passionate about, to participating in competitions. Our students have held a crash course for French, introductory dive classes, wine appreciation sessions and even made their own acoustic panels for the jam room. Pretty cool, huh?



Being a young university, are the career prospects of SUTD graduates limited? 😊

We have over 1,000 internship partners. And we don't mean to toot our own horn but here's a look at our **Graduate Employment Survey (GES)** statistics. Our graduates go on to better the world and if you would like a glimpse, check out page 31!



Employed within 6 months of graduation

*Overall employment rate.

†Mean gross monthly salary.

‡Based on the Economic Development Board's list of Singapore's industries and key activities.

S\$4,071



Graduates secured jobs in 78.6% of Singapore's key industries‡



More questions? Chat with us at sutd.edu.sg





COMMUNITY MAKES A HOSTEL A HOME

Axiom Kosasih
Junior
Anglo-Chinese Junior College alumnus



What is unique about the SUTD hostel experience?

Every floor has a mix of people from different academic levels and backgrounds. You've got professors, staff, exchange students, Freshmores, Seniors and even postgraduates! Not only do you get to know them personally, you get advice and help whenever you need them. This creates a tighter bond among the SUTD family.

Could you share more on the sense of community while living in the hostel?

We have many bonding activities that promote camaraderie among hostel residents. I previously organised a food 'Amazing Race' for my hostel peers. Hostel residents solved clues together as a team that led them to various food spots around Singapore. They not only got to know one another better but were also introduced to hidden food gems as a reward for their teamwork!



What do most people not know about hostel living at SUTD?

The SUTD design thinking spirit extends to and permeates the hostel. We have meeting rooms and study rooms with whiteboards and TV screens everywhere. Even our rooms have a whiteboard so that we can discuss and ideate anytime. The next life-changing innovation might come from one of the SUTD hostel rooms!

How does living in the hostel help you thrive in your studies?

I believe in learning by teaching. Fortunately for me, I love helping my peers with their studies and likewise, I'm grateful for friends who also help me understand concepts better. The whiteboards and TV screens in the hostel meeting and study rooms also help us in facilitating discussions. Being in such a conducive environment helps me a lot in my studies!

How is living in the hostel a home away from home?

SUTD hostel makes me feel at home because not only does it have facilities that help us thrive in our studies but also facilities that allow us to have fun. For example, there are recreational rooms where we can play video games on the big TV screen or organise a movie marathon. We also have communal kitchens for those who enjoy cooking or baking with their friends.

What are some of the interesting hostel events you've organised and experienced?

I was previously in charge of organising interest-based events and one event that I find very memorable was a kite making and flying workshop at Marina Barrage. It turned out to be more than a workshop!

Hostel residents of all backgrounds had a fun picnic under the sun while some were running around flying the kites they made. There are also hostel events that cater to different interest types. For instance, we had a calligraphy workshop and a coffee painting workshop for those with artistic interests. We also had an archery workshop and a self-defence workshop for those who enjoy physical activities. For those who enjoy cooking, we had a mug cake and Vietnamese rolls making workshop. There's really something for everyone!

What do you love most about living in the hostel?

Definitely the convenience of meeting your friends! When I have food to share, I can just knock on their door and when I need help or a listening ear, I can just hit them up. I will miss this most when I graduate next year!



- 01 Meeting rooms within the hostel are conducive for discussions anytime
- 02 Supper at Simpang Bedok
- 03 Making a kite from scratch at the kite making and flying workshop
- 04 Flying the kite we made at Marina Barrage
- 05 Some fine penmanship at the calligraphy workshop
- 06 Whipping up a storm at a culinary workshop
- 07 All smiles before getting ready for the Vietnamese rolls making workshop

UNFAZED BY COVID-19

INNOVATIONS IN THE FIGHT AGAINST COVID-19



CARBON CAPTURE COMPOSITE (C³)

Led by SUTD's Engineering Product Development (EPD) faculty, Associate Professor Low Hong Yee and Associate Professor Tan Mei Chee have been working on C³, a film membrane that is capable of air filtration and capturing carbon dioxide (CO₂), potentially alleviating the shortage of physical ventilators and oxygen supply.



ENHANCED WORKER DORMITORIES TO PREVENT CROSS CONTAMINATION

A collaboration between Assistant Professor Peter Ortner, Faculty Fellow Zheng Kai and Leader of the SUTD Architect-in-Residence Team, Andrew Lee; the trio aims to fight COVID-19 spread in migrant worker housing by studying hygienic ventilation, crowd movement and washing protocols.



MODELLING TOOL FOR VIRUS IMPACT ON HOSPITALS IN THE USA

Together with members from Weill College of Medicine in New York City (USA), Head of SUTD Engineering Systems and Design (ESD), Professor Peter Jackson is part of a team behind an easy-to-use tool to estimate the demand for critical resources in hospitals.



TRACETOGETHER

SUTD alumna and GovTech software engineer, Janice Tan was part of the team that developed TraceTogether, the community driven contact-tracing app that helps stop the spread of COVID-19 with faster contact tracing.



Read more COVID-19 related research stories

RIISING ABOVE THE UNCERTAINTY

DEEP DIVE INTO VIRTUAL COACHING

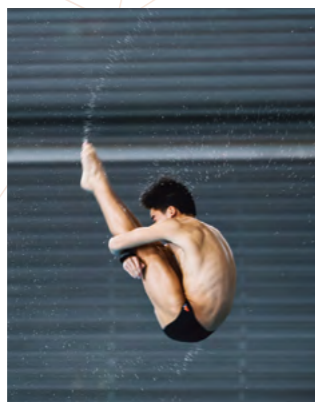


Jonathan Chan Fan Keng
Junior
Anglo-Chinese School (Independent) alumnus

BOUND FOR TOKYO, JONATHAN IS THE FIRST SINGAPOREAN DIVER TO QUALIFY FOR THE OLYMPICS. HE SHARES HOW HE HAD TO REMAIN IN TOP FORM EVEN DURING THE CIRCUIT BREAKER.

During the circuit breaker, could you share how your training schedule had to be adapted as you stayed at home?

Training from home meant adapting a lot of things. For one, we didn't have the pool to dive into anymore. So the bulk of the training focused on what we could do on land. Contrary to popular belief, divers don't just jump into a pool continuously for 3-4 hours. We actually spend half of our training time on land. This includes things like somersaults, cardio and diving related exercises. It's also pretty independent, we only checked in with our coach once a week for him



to update us on things he might add on to our training schedule. Other than that, I did occasional video calls with my teammates to work out together, and made sure to keep each other on track!

UGLYFOOD WITH A BEAUTIFUL PURPOSE



Yeo Pei Shan
Director, Operations at Uglyfood Pte Ltd
SUTD Class of 2018
Dunman High School alumnus

A START-UP BY SUTD ALUMNI, UGLYFOOD OFFERS AFFORDABLE AND HEALTHY FOOD WHILE REDUCING FOOD WASTAGE IN SUPPLY CHAINS.

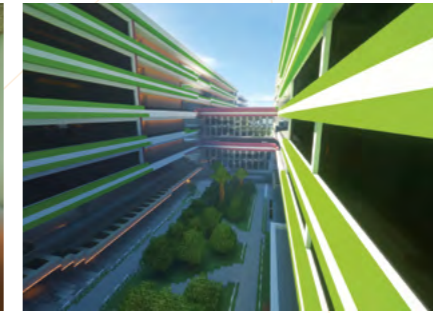
family bonding activity through craft. As part of the kit, we included an education pack on the bottle cap which provides information about the fruits and vegetables – the health benefits and how they can be used.



We created a DIY fridge magnet kit during the circuit breaker. Due to safety issues with reusability, we thought to convert the single-use metal caps from glass bottles into raw materials to make the fridge magnets, while at the same time create a fun

During the circuit breaker, we also partnered with The Lo & Behold Group in an initiative to feed our migrant workers. At a community kitchen set up by private members club Straits Clan, chefs prepared 450 meals daily for migrant workers at the Goldmine Energy Tuas factory-converted dormitory. As regulated, each meal can only be produced at a cost of no more than \$2, and we were happy to support through the supply of ingredients. At the heart of what we do is to minimise food waste and make the most of resources. Therefore, it was meaningful that we could contribute to this initiative, yet stay true to what we stand for as well.

REINVENTING SUTD OPEN HOUSE



WITH JUST 14 DAYS TO REINVENT OUR OPEN HOUSE INTO A DIGITAL EXPERIENCE, SEE HOW OUR COMMUNITY CAME TOGETHER AS ONE IN THEIR INNOVATIVE WAYS.

SUTD CAMPUS IN MINECRAFT

Our students built SUTDLAND, a virtual recreation of the SUTD campus in Minecraft so that visitors can experience and explore the campus. Check it out at sutdmc.opensutd.org/

DISCORD CHAT

100% managed by our students, various student groups connected with prospective students to give the lowdown on what goes on at SUTD. No face-to-face interaction? No problem!

DESIGN WORKSHOPS

We brought our Open House signature hands-on Design Workshops to visitors virtually. From a QR code activity that illustrates basic computing concepts to designing different types of thermometers, visitors could still experience our #makerculture from their homes.



Photo credit: SUTD Minecraft

MOVING FROM PHYSICAL TO DIGITAL CLASSROOMS

GETTING USED TO A DIGITAL CLASSROOM

When the circuit breaker started, we moved all our lessons to Microsoft Teams where each cohort had its own Teams meeting. A multi-functional teaching tool, all instructors used it to share their slides, show live demos, or used the software's whiteboard to doodle. With two instructors teaching each class, one instructor could lead while the other instructor answered students' questions in the chat.

Oka Kurniawan
Senior Lecturer, Information Systems Technology and Design (ISTD)

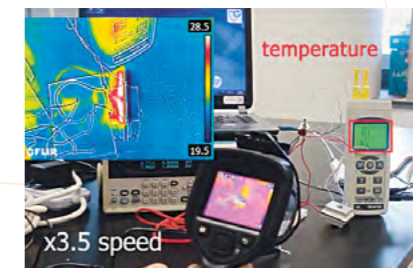
KEEPING UP WITH QUESTION-ASKING

When we learnt that classes would switch to an online format, I asked myself, "How can we keep the habit of students asking questions?"

I turned to Sli.do, typically used at events to solicit questions from audience members. Students can ask questions anonymously. This is important because students could ask uncomfortable questions they might otherwise not raise.

Students embraced the technology. We had reviews of key concepts where they "dug into" the details of the tools we covered. I was happy to have lively engagement around topics like whether the Singapore Dollar would drop due to COVID-19 related economic disruption.

Douglas Streeter Rolph
Senior Lecturer (Finance), Engineering Systems and Design (ESD)



A 4-min YouTube video on a HoA pre-recorded for students

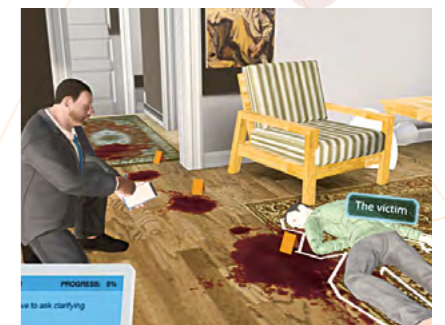
ONLINE HANDS-ON ACTIVITIES

For 10.008 Engineering in the Physical World, in preparation for full remote learning, we started converting two out of three hands-on activities (HoAs) in Week 2 to be online. Students watched pre-recorded HoA videos on how the experiment and data were conducted and collected respectively. Students then analysed the experimental data and completed the worksheet.

Apple Koh
Senior Lecturer, Science, Mathematics and Technology (SMT) Cluster



Behind-the-scenes recording of videos by instructors



Virtual lab simulations where students learn about polymerase chain reaction

LEARNING BIOLOGY À LA FLIPPED CLASSROOM

In 10.012 Introduction to Biology, the lesson plan for every class was blended. We did not want to be overly dependent on online synchronous lectures. Classes would start with a quiz, followed by an introduction to the topic of the day and the lesson plan. The lesson plan contained the exact duration they should spend on each mini-video recording for that class and every instructor was assigned to prepare video recordings for one week of lessons. Other than video recordings, we also used free open source tools and interactive online experimental simulations, allowing students to carry out lab experiments virtually!

Bina Rai
Senior Lecturer, Science, Mathematics and Technology (SMT) Cluster;
Programme Director, SUTD-CGH Healthcare and SUTD-Duke-NUS Special Track

THE POWERS OF DESIGN IN ACTION

The Discovery of Exceptional Design Affinities (DEDA) is an online experience to help you discover your potential design powers and affiliations in five Guilds. Each Guild possesses different sets of skills and knowledge, depending on your interests and values.

World Builders • Creators • Masterminds • Cyber Shapers • Augmentors

Below are SUTD students and graduates who have discovered and used their DEDA powers to create impactful projects. Curious? Take the test and discover your design powers.



Scan to discover your design powers



ARCHITECTURE AND SUSTAINABLE DESIGN (ASD)

Ong Wueng Kee
SUTD Class of 2019
Serangoon Junior College alumnus



'The Loft' is one of my studio projects. It's a meditation space in One-North Residences. Think of it as a treehouse complex for adults. As adults, we can't crawl through small spaces like we did as children. In this space, I want people to relax by going back to their childlike ways: crawl through small spaces, take small steps, go down small slides, and sit in small rooms. But I kept the dimensions to adult-size — while the spaces feel tight, they are actually big enough for us to occupy. 'The Loft' was made by studying the physical and social context of the area around the site. **Using data we collected about the topography, traffic noise and prevailing winds, I was able to conceive forms more fitting for the environment.**



I have done quite a number of projects, ranging from **a simple line tracking race car to a completely new modular soft robotics kit**. I even collaborated with the EPD staff and students from the SUTD Organisation of Autonomous Robotics (SOAR) to create a **mobile coffee booth that serves coffee with its robotic arm**. We did this over one of the December holidays and hacked into a Nespresso machine to automate it. This project is now used at the university's outreach programmes, such as the SUTD Open House, to show prospective students an example of a cool project they can do here.



ENGINEERING PRODUCT DEVELOPMENT (EPD)

Yos Yohannes Hausjah
SUTD Class of 2019
NUS High School alumnus



ENGINEERING SYSTEMS AND DESIGN (ESD)

Bharat Atul Desai
SUTD Class of 2019
National Junior College alumnus



One of the most interesting projects I've done is a consulting project with DBS for my 'Statistics', and 'Manufacturing and Service Operations' courses. **We worked with their chief analytics officer to build a model to predict when and how many customers would visit their branches, so that DBS can allocate their manpower accordingly.** In order to build this model, we had to study four years' worth of data on customer arrival times, weather, and traffic conditions.



INFORMATION SYSTEMS TECHNOLOGY AND DESIGN (ISTD)

Joshia Seam
Senior
Anglo-Chinese Junior College alumnus

Ethcert.io is a project I did for my 'Elements of Software Construction' course at SUTD. It is a primitive attempt at putting certificates on the Ethereum blockchain. Why is this idea useful? Because if certifications are stored on the blockchain, you cannot fake them. And if you ever lose the physical copy, there is a digital copy to fall back on. Since it is on the blockchain, there is a single source of truth. **The Government Technology Agency of Singapore is now working on a similar project called OpenCerts (and SUTD is a partner too!).**



DESIGN AND ARTIFICIAL INTELLIGENCE (DAI)

Dr Kwan Wei Lek
Senior Lecturer, Science, Mathematics and Technology (SMT) Cluster

How are DAI students expected to hone their design powers from the curriculum?

Students will get lots of hands-on experience working on design projects in the AI Design Innovation Studios. These studio classes will

A QUICK LOOK AT THE NEW DAI PROGRAMME

expose students to different industry sectors and areas in products, systems, services and built environments. **This allows them to make connections between AI and design thinking methodologies that are crucial to "better design" with AI.** The additional Business and Humanities, Arts and Social Sciences (HASS) subjects will equip students with the understanding of commercial needs and value-creation while inculcating ethical and social responsibility in their design-creation. With a flexible, customisable curriculum, students can choose their electives and have a varying concentration in Design/AI/Business.

What are some of the possible projects that DAI students can create to better the world?

We are working with different industries to bring in company-sponsored projects for added realism to the studio experience. For example, in one of our student projects, AI was used to predict city growth patterns using data of real cities. This can be used to explore government policies and other city design decisions.

KICKING IT WITH FIFTH ROW (aka CCAs)

ARTS AND CULTURE



CHAMBER

@sutdchamber

What do we do?

Well, we do not "fiddle" around, that's for sure. Chamber Ensemble consists of four main instruments: the violin, the viola, the cello and the double bass. Using these instruments, we perform the classics from Hisaishi's Ghibli pieces to Vivaldi's 'The Four Seasons'.

What's one club activity that you'd like to share?

Movie screenings! We watched 'The Sound of Music' as we were going to play a Sound of Music Medley in our concert. Practice afterwards was nothing short of amazing. Have you ever watched a movie like 'Forrest Gump', 'Spirited Away' or 'La La Land' and just wished you could sing or play their songs in some way? When I played with the Ensemble after our screening, I had goosebumps. It truly felt like a cinematic, surround sound experience.

Describe your club in five words or less

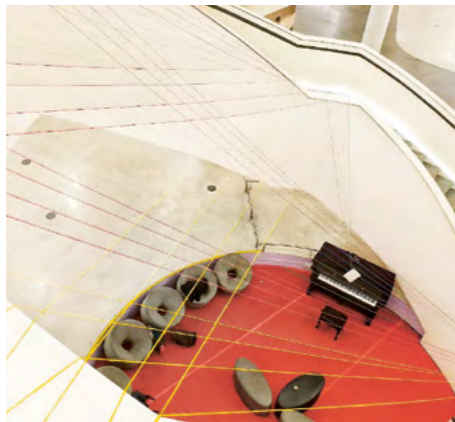
Where words fail, music speaks.

If you could compare your club to any team, what would it be and why?

I would compare the Chamber Ensemble to Queen. For starters, half of Queen lead double lives as both musicians and engineers, as do most members in the Ensemble. What made me feel like we were truly alike in more ways than one was when Freddie Mercury said of the band in the movie 'Bohemian Rhapsody', "We're family, we believe in each other. That's everything." That rings true for the Chamber Ensemble, and could only be understood if you've experienced it.



Chan Xi Levona
Freshmore
Victoria Junior College
alumnus



SUTDio

@sutd.io

What do we do?

SUTDio aims to explore the world of architecture through arts and craft. The club holds a myriad of workshops for students to join and serve as their creative outlet. We also participate in events to build art installations.

Why join us?

If you are interested in arts, craft and architecture, join SUTDio to experience working on projects, mingle with ASD seniors and pick up some design software skills.

What's one club activity that you'd like to share?

SUTDio kickstarted a programme called ASD Initiative, which aims to introduce Freshmores to architecture through films, workshops and projects. In Term 1, Freshmores created art installations to add vibrancy to the school grounds and redefine what the space can be used for. The students learnt to design with some basic form exploration and made scaled models in Term 2. In preparation for summer internship, architecture software workshops were organised for students in Term 3.



Valent Tan Wei Ren
Sophomore
Ngee Ann Polytechnic
alumnus

SPECIALISTS



MAKERSPACE

@sutdmakers

What do we do?

The core of SUTD's maker culture is at SUTD Makerspace. We engage in a myriad of projects, ranging from making arcade machines for public display at Parking Day to building systems to facilitate health screenings in Cambodia.

Why join us?

Makerspace is where you make your dreams a reality, no matter how colossal or seemingly trivial your ideas are. Here at Makerspace, you can find many like-minded counterparts that will be more than willing to guide and learn with you.

Describe your club in five words or less

Today's Tinkerers, Tomorrow's Inventors.

If you could compare your club to any team, what would it be and why?

Our club would be like the team of doctors in 'Hospital Playlist'. In the drama, the team of five each excel in their respective specialisations at work, and after work, they come together as a band to have fun playing music. Similarly, our club is made up of a smorgasbord of different individuals who are each proficient in their own fields, be it software or hardware, however when we come together as a Fifth Row to pursue our similar interests, we work hand in hand to let our embryonic ideas take shape.



Sharmayne Lim Zhiyu
Freshmore
Raffles Institution alumnus



UNI-Y

@uniysutd

What do we do?

As a community serving communities, Uni-Y's mission is to develop and empower youths to be servant leaders who will impact the local and international communities. We are partnered with YMCA and hold programmes targeted at community service and volunteer development.

What's one club activity that you'd like to share?

At the end of every year, we partner with YMCA Myanmar to organise a 2-week long OCIP trip to Maubin, Myanmar. Maubin is a small town in the Ayeyarwady Division of southwest Myanmar. We serve the Maubin community by aiding in the construction of the road system to improve mobility in the village and organise workshops to teach English and computer skills to the children there. Most importantly, we are given the opportunity to bless the people of Maubin.

Describe your club in five words or less

A community serving communities.



Tiong Shan Kai
Sophomore
Meridian Junior College
alumnus

SPORTS



MUAY THAI

@sutdmuaythai

What do we do?

Known as the Art of Eight Limbs, Muay Thai is a combat sport originating from Thailand. Twice-weekly trainings (one led by our coach, one by our training captains) consist of technique, pad work, conditioning, sparring and the occasional supper.

Why join us?

Our very own coach, national fighter Lee De Jun, provides quality trainings at an affordable price. Whether for fitness, to relieve stress, or to compete in fights, we are open to everyone, so grab your buddies and come on down!

What's one club activity that you'd like to share?

We have this event called Fight Night; it is a small Muay Thai competition between club members where they get to put whatever they have learnt during trainings into practice. Fight Night is held on campus, open to the school to watch as audiences, hence it is also a chance for interested parties who want to try their hand at the martial art to gain some exposure and experience.

If you could compare your club to any team, what would it be and why?

Interestingly, we would compare our club to 'Scooby-Doo'. As a group, we are diverse, we have the ones who are more experienced, and then there are members who are likely new at the sport and are trying their best. While Muay Thai is ultimately an individual competitive sport, training together makes us a team, no matter if we are seasoned or a newbie, we help one another out where needed and improve as one.



Ong Lok Hen
Freshmore
Temasek Junior College
alumnus



ULTIMATE

@sutdultimate

What do we do?

SUTD Ultimate trains to take part in various Ultimate Frisbee competitions throughout the year and promote the spirit of the game in SUTD. Members will develop their individual skills, physicality and teamwork. We also organise recreational Ultimate sessions.

Why join us?

It's a great avenue for anyone who wants to challenge themselves physically and mentally, experience a new sport, find a close-knit support group or take a breather from studying. We are also a mixed-gender sport and have great alumni support!

If you could compare your club to any team, what would it be and why?

'Haikyuu!!', because we always support and motivate every member through thick and thin, ups and downs. University life can be challenging, stressful and uncertain. Be it sports, academics or future prospects, we know we have the team to turn to.



Koe Jia Yee
Senior
Anglo-Chinese Junior College
alumnus

BRIDGING HUMANITIES WITH TECH AND DESIGN

All #SUTDents take HASS subjects covering disciplines such as philosophy, fine arts, sociology and economics. These help develop critical thinking and an awareness of the social role and impact of technology and design innovations.



DIGITAL HUMANITIES

Gerald Lim Boon Hao

Sophomore
Singapore Polytechnic alumnus

When I was first introduced to HASS, I had a hard time trying to figure out how HASS can value add to my field of study - Computer Science. My first HASS module was 'World Texts and Interpretations', the content was difficult to understand and comprehend because I was not used to reading such profound ideas and thoughts written by people who think outside of the norm. It was through the encouragement of Professor Alastair Gornall to persevere in reading the texts and his ability to break down difficult concepts to easily digestible ones that allowed me to have a glimpse of what HASS is.

As I learn to appreciate HASS, I saw myself applying concepts learnt in a sociology module by Professor Gabriel Tusinski in my 03.007 module. It was not about just creating any fancy product infused with the latest technologies, but a lot of thought is poured into brainstorming a product that can impact a cause. Applying concepts learnt, we carefully analysed the deep embedment of symbols and their meanings in our society and found that there are certain needs that have yet to be solved. Therefore, we then decided to devise a solution that can solve that particular problem. We did not create a product just because it is cool, but we created it for a cause. I opted for the Digital Humanities (DH) minor because it is a fusion of technology and humanities. I am passionate about technology but to be able to apply my technical skills to humanities is the best of both worlds. For my first project in Digital Humanities, my partner and I leveraged a few APIs and implemented sentiment analysis to understand the true meaning of rock music. HASS has indeed helped me open up a whole new perspective about technology and hence, I feel that I can design more purposefully.



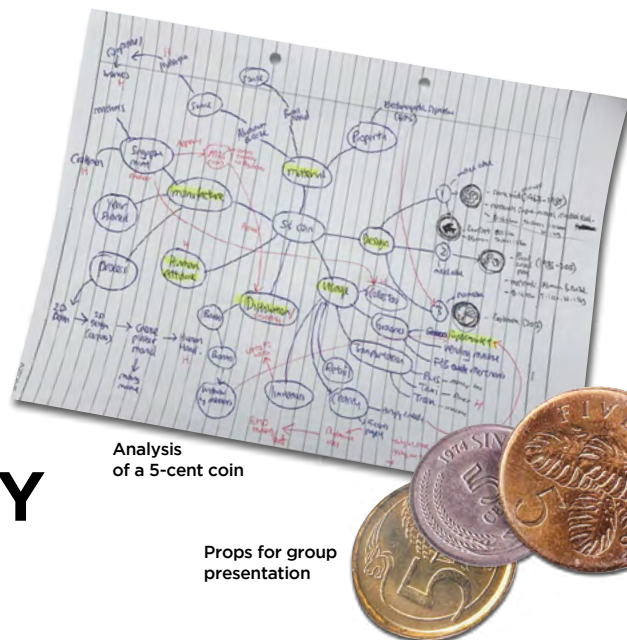
DIGITAL SOCIOLOGY

Kang Jun Yan Karyl

Junior
Nanyang Junior College alumnus

To be honest, I did not know what to expect from HASS initially. In freshmore year, we were taught various theories and readings that would serve as the basis for future HASS courses. I really enjoyed HASS lessons as they were something different from other courses we took.

As a student in a technology and design school, HASS supports and adds to our education. I was interested in exploring more about how design and technology impacted our society and hence I took the Design, Technology and Society (DTS) minor offered by HASS. One of the electives I took was Digital Sociology, which was very relevant, especially with digital transformation emerging, and the digital world we live in today. The projects and assignments enabled me to better understand the impact technology and digitalisation have on individuals like us



Analysis
of a 5-cent coin

Props for group
presentation

and the society. For example, I worked on a group project on 'Fake News', which is increasingly prevalent in our society today and its impact exacerbated by digitalisation. Furthermore I was able to develop my own analysis of topics I was interested in such as 'Fake News' and the 'Digital Divide'. Another interesting HASS course I took was 'Interventions in Design, Technology and Society', the core course for the DTS minor, where I was exposed to various concepts and even got to explore the form of a 5-cent coin, something I never thought of before!

I believe that as design and technology students, we need to understand the impact technology can and will have on individuals and society so as to better utilise our design skillsets to bring about necessary change, and HASS equips us with the needed analytical skills.



Group discussion on fake news

AROUND THE WORLD AS AN #SUTDENT

Every year, our #SUTDents take off to a world of possibilities out there for academic and cultural exchange, while some put their design ideas to the test, give back to the community or participate in international competitions. Here, you'll have a glimpse into some of the many exciting opportunities #SUTDents can choose to pursue.

*Note: The experiences in this section took place before the suspension of exchange programmes in light of the COVID-19 situation. All exchange programmes have been suspended until further notice.

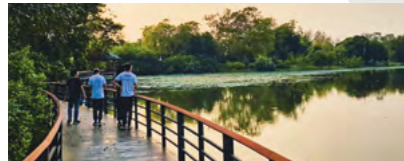
#SUTDent JOURNEYS IN ASIA

Subsidised by SUTD, all Freshmore students are offered the opportunity to expand their learning overseas in their first year. FACT is incorporated into specific Freshmore courses where you can learn alongside students from partner universities.



Feng Zhengqing Mark
Sophomore
Yishun Junior College alumnus

10.005 Physics II* at Mahidol University, Bangkok, Thailand



Mahidol University is so pretty! There's a nature park inside the campus – a perfect place for me to unwind and surround myself in the beauty of nature.



Every Friday in Mahidol University, there would be a “pasar malam” set up by external vendors, selling street food and clothes. Students will gather and visit the stalls during lunch time. Unlike SUTD, all Mahidol University students are dressed in white tops and black bottoms, as part of their uniform requirement.



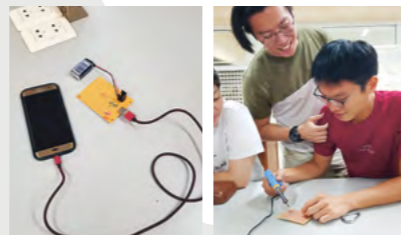
The Mahidol university students were great hosts – they were our translators, helping us with our orders when there were no English menus, and tour guides, bringing us around Bangkok. Without them, the experience would have been different!



Our science knowledge was put to the test during lab experiments on the fifth day of the programme. Dressed in lab coats, we conducted experiments in areas such as 3D printing, hologram, nano materials and colour changing materials.

As an engineer, it was my first time dealing with materials science and I gained a deeper appreciation of it. I learnt that the glass on our smartphone screen is made from constant research and development on materials science.

THAILAND



During our FACT programme, we were tasked to solder and assemble a simple powerbank, using a linear regulator, resistors, a diode, a stripboard and a 9V battery. It was my first time soldering and it was a lot harder than it looks! In the end, Professor Teo Tee Hui demonstrated to us how to solder properly.



Our KMUTT counterparts brought us around the university campus during sunset, and we got to witness a beautiful purple sky. It was definitely photo-worthy, so all of us were busy snapping away!



We went on a short trip to the nearby reservoir while waiting for sunset to test our solar-powered lights. We also saw pineapple farms along the way! At the reservoir, everyone was either taking pictures or skipping stones, the latter in which our KMUTT counterparts were professionals!



Everyone working together to install the solar panels and weatherproof boxes housing the components for the solar-powered lights. Toiling in the heat together brought both SUTD and KMUTT students closer together, despite the language barrier.



Thailand's National Children's Day (Wan Dek) falls on the second Saturday in January. We organised several fun games for this occasion, and the wide grins on the young Thai learners' faces made me miss being a child again.



Lee Min Shuen
Sophomore
Tampines Junior College alumnus

10.008 Engineering in The Physical World* at King Mongkut's University of Technology Thonburi (KMUTT), Ratchaburi, Thailand



Designing and deploying the solar-powered lights to make the school environment more welcoming and safer for the staff and students that stay in school past dusk was truly an embodiment of SUTD's tagline - “A Better World by Design”!

This was an eye-opening experience as I learnt how solar PV (photovoltaics) could be used as a source of alternative energy, especially in rural villages where the electric power infrastructure is less developed. Beyond the classroom, I also learnt how despite a language barrier, we can combine our knowledge to solve problems together.



Break time! After having lunch together, the UCSY students would bring us around to explore their campus. Over drinks and snacks in the canteen (spoiler: great canteen food!), we joked and bonded over academics, pop culture and memes.



In the UCSY canteen, we were introduced to laphet yay – a classic Burmese tea made with evaporated milk, sweetened condensed milk, and black tea. I was so amazed at the creaminess and flavor of the tea that I brought back two packages of the drink to Singapore.

FRESHMORE ASIAN CROSS-CURRICULAR TRIPS (FACT)



Caryl Beatrice Aragon Peneyra
Sophomore
Jurong Junior College alumnus

10.009 The Digital World* at University of Computer Studies, Yangon (UCSY), Myanmar



Running parallel to Strand Road, a major road in downtown Yangon, is the Yangon River. We trekked along Yangon's riverfront to catch an amazing view of the sunset from one of the river docks.



On our last day in Yangon, we ventured to the amusement park at People's Park, where we saw (and even rode!) several thrilling rides together with our UCSY friends. Definitely an exciting way to end a trip!



During lessons, we learnt the basics of Python programming. Although I already had some familiarity with Python, I was still able to learn new skills from the lessons such as data visualisation, web scraping and good programming practices.

MYANMAR



One experience I will not forget is our outing at Taman Mini Indonesia which was a theme park showcasing Indonesian culture from all parts of the country. The highlight of the trip was us zooming around in tandem bikes. It was the first time I rode a 3-seater bike and it was thrilling!



On the penultimate day of our trip, we had to present our idea to a panel of professors from the university. Our design was inspired by the Komodo dragon, the national animal of Indonesia and was to be used as a deck chair of sorts.



Aaron Soares
Sophomore
Catholic Junior College alumnus

03.007 Introduction to Design* at Prasetiya Mulya University, Jakarta, Indonesia



At Prasetiya Mulya University, we were given a task of designing a chair catered to the Indonesian market. After exploring Jakarta first and interacting with our local groupmates, we finalised our design and started working on our prototype using cardboard. Here you can see us trying to get the right shape for our chair based on our body posture.



We had such an enjoyable time at Taman Mini Indonesia riding bikes, playing laser tag, boating at the lake and eating local delicacies that we lost track of time! Here is a picture of the folks I spent time with that memorable day.

INDONESIA



SAVOURING FAVOURITE SPOTS IN THE GOLDEN STATE

GLP AT UNIVERSITY OF CALIFORNIA,
BERKELEY



GLOBAL LEADERSHIP PROGRAMME (GLP)

SUTD's premier signature programme offers an at least 8-week, funded, fully immersive summer experience at Stanford University, TU Berlin, University of California, Berkeley, and Zhejiang University.



Chua Jia Li Julia

Junior

Ngee Ann Polytechnic alumnus



Chong Chin Hong

Junior

National Junior College alumnus



Yeo Ying Xuan

Junior

Dunman High School alumnus



Golden Gate Bridge, San Francisco

Ever felt a sense of satisfaction just by being somewhere? That was how it felt to be on the Golden Gate Bridge. It was an indescribable feeling to be able to walk across the bridge and enjoy views of the bay from an engineering marvel. The Golden Gate Bridge once held the record of being the world's longest and tallest suspension bridge. Its unique reddish orange colour was picture-perfect against its natural topography. We had so much fun just posing and taking pictures on the iconic landmark that half of our day was gone when we got to the midpoint of the bridge. It was truly an unforgettable experience. I cannot wait to revisit the bridge and to experience the inexpressible sense of content again!



Six Flags theme parks, Los Angeles and San Francisco

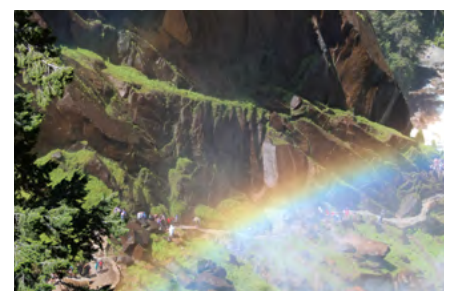
I really love roller-coasters and Six Flags Discovery Kingdom in San Francisco and Six Flags Magic Mountain in Los Angeles are the best! The rides are super addictive (seriously not for the faint-hearted) and there is a huge variety of rides to go for! From backwards-moving roller-coasters to DC Comics themed rides, I sat in the front seat for almost every ride! Warner Bros. Studio is in the vicinity of Six Flags Magic Mountain, so it is super convenient to tour both places!



Yosemite National Park, California

A great weekend road trip during the summer sessions and be back in time for lessons the following week! Many scenic and picturesque viewpoints including Vernal Falls, Half Dome, Tunnel View and Glacier Point. Be ready to get completely drenched on the Vernal Fall Trail by the splash of the waterfall. There is a large selection of hiking trails catering to hikers of all abilities, and many climbing locations at Yosemite Valley, an expansive playground for climbers out there!

It would have been great to have one or two more days to explore more areas of Yosemite as it was rather crowded with families on weekends. Do remember to check the operating status of the different locations in the park and road closure updates.



WE KNOW WHAT WE DID LAST SUMMER AT STANFORD



Abu Bakar Bin Othman
Junior
Temasek Junior College alumnus

The initial buzz of stepping foot in Stanford in Sunny California never really faded despite my 10-week stay around the West Coast. There was just so much to do, so much to explore: from trekking through the Grand Canyon, to visiting Los Angeles' landmarks like Hollywood, to visiting Stanford's National Accelerator Laboratory, I was constantly in awe at the opportunities and beauty it offered.

Of course, learning in one of the world's most reputable institutions was central



Going shopping on the back of a truck

to my experience there too. I took the opportunity to explore a life-long fascination with the stars, taking a course in 'The Origin and Development of the Cosmos'. From characterising stars to decoding the mystery surrounding black holes, the course culminated with an open project of our own interests, where I proposed a statistical method to determine viability of life in extra-terrestrial planets based on extremophiles on Earth, micro-organisms that could withstand life in volcanos or ice-sheets.



We were definitely NOT wearing the right shoes to trek Grand Canyon...

Besides learning, along with the SUTD peeps, we went on a road trip to hike through some of California's great national parks such as Sequoia and Yosemite. Taking short rests to absorb the awesome natural beauty that stood before us, all the while being humbled by the eerie silence that blanketed the vastness of the mountains, is definitely one to remember for life. I think that was the peak of my adventures in the West Coast.



Conquering Heather Lake in Sequoia - my first time seeing snow!



Lizabeth Mirabel Tukiman
Junior
National Junior College alumnus

One project I had at Stanford was a paper on the Global Financial Crisis as part of my 'Principles of Economics' course. I learnt more about the process of finding and validating sources. To support our analysis, we not only had to find multiple journal articles, but also had to justify that these journal articles were from a reliable source.

To help us with our paper, the professor invited a banker who witnessed the crisis firsthand to give us a guest lecture. This gave us many insights into the event that we may not easily find online.



The Green Library is only a short walk away from Branner Hall, where we were staying

In the process of completing this project, I also learnt about Stanford's Cecil H. Green Library, the largest library on campus. In addition to the interesting coursework, I

spent many weekends exploring Silicon Valley, which is located near the Stanford campus.

The main attraction at the Apple Park Visitor Center was a 3D model of the campus that incorporated augmented reality technology. We could even lift the roof off buildings to see what the inside of the buildings looked like.



The 3D model was a fun and engaging way to explore Apple Park



You can spot Donut, Jelly Bean, Lollipop, and Oreo here!

One highlight was the Android lawn statues, a bunch of large foam statues that are based on the code names for versions of Google's Android mobile operating system.

A ROUND-UP OF INNOVATIONS FROM THE PAST 8 YEARS

DESIGN AND TECHNOLOGY EXPERIENCE (DATE)

SUTD's collaboration with Zhejiang University (ZJU) includes a 14-week customised exchange where students work on hands-on projects revolving around a number of design themes, with interaction and engagement activities in Hangzhou. Students will also have a chance to interact with companies.

01

CYPRESS COUNTRY PARK (2017)

Theme: Landscape Planning and Design

A countryside park that is designed to not only be aesthetically appealing but also practical, suitable for all ages to unwind over the weekends. The use of man-made construction was minimised such that park-goers will feel a significant difference in the ambience of the bustling city and park.



Camping and barbecue area



High elements course



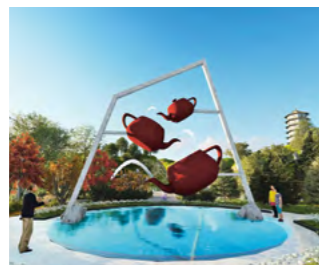
Restaurant dining area

05

ECOLOGICAL TEA GARDEN (2016)

Theme: Ecological Tea Garden

A virtually-designed tea garden that promotes sustainable development of tea production and culture in China. The tea garden aims to affirm tea culture and its importance to China's society while integrating its rich culture with the natural landscape.



Rendered images of the Tea Garden

02

RAIN N' ROSES (2016)

Theme: Visualisation of Environmental Data

An interactive web application for researchers and the general public that pulls real-time data from weather stations, tracks rainfall, wind data and various water pollution levels in both the atmosphere and rivers spanning the whole of China.



Participation in a data visualisation competition hosted by the Alibaba Group, in collaboration with China's Public Meteorological Service Centre



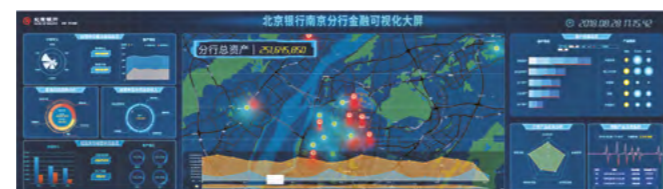
Classes focused on the fundamentals, design thinking and good design practices in professional data visualisation

06

BOBVIS (2018)

Theme: Visual Design of a Comprehensive Intelligent Large Screen

A data-driven interactive large screen for the Bank of Beijing (BOB) to be deployed at the monitoring centre of the new Nanjing branch. With the expansion of big data, there is a need for a unified data platform to sort, manage and analyse useful data to improve and monitor services and products.



Large screen display for BOB

03

BABY MAT (2017)

Theme: Music Emotion

A music mat segmented to produce a different song in each block on the mat, plays segments of alpha-wave music when the child presses on that specific area on the mat. The aim of this product is to allow the baby to listen to alpha brain wave music, which helps with brain development, in an interactive way.



Final assembly of mat with completed circuits



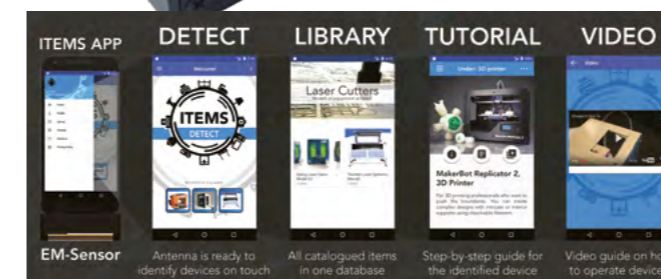
Cable management of the multitude of wires

07

ITEMS (2017)

Theme: Screens & Beyond: Design of Cross-Objects User Interface

A modular phone attachment developed with a device identification technology called EM-Sense. It comes with a unique application to guide users in the operation of any electronic equipment by simply making physical contact with it.



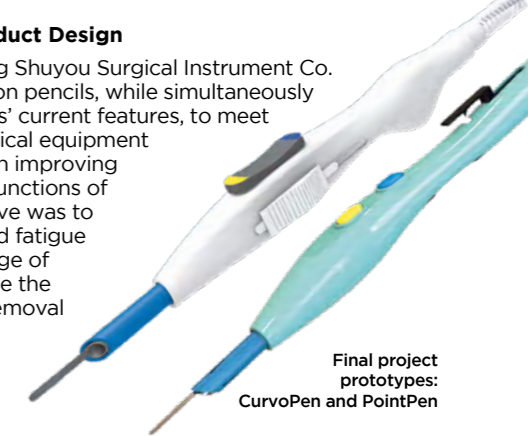
App interface

04

POINTPEN AND CURVOPEN (2015)

Theme: Medical Product Design

A redesign of Zhejiang Shuyou Surgical Instrument Co. Ltd's smoke evacuation pencils, while simultaneously building on the pencils' current features, to meet China's medical electrical equipment standards. Focused on improving the ergonomics and functions of the pencil, the objective was to reduce surgeons' hand fatigue during prolonged usage of the pencil and improve the efficiency of smoke removal and uncontrolled movements of the pencil's electrode.



Final project prototypes: CurvoPen and PointPen

08

CALISTHENICS, NETBALL, MODULAR AND REFLECTIVE COMPRESSION SPORTSWEAR (2014)

Theme: Healthcare Engineering and Healthcare Products

Four variations of compression sportswear that unite aesthetics with functionality. The Calisthenics suit was inspired by Bruce Lee and his extreme training routines. The Netball suit drew inspiration from the result of greater comfort and safety with specialised equipment. The Modular suit was derived from the modern athletes who personalise their exercise outfits and routines. Finally, the Reflective suit aimed to provide safety for athletes who prefer to run at night.





SOAKING UP BERLIN'S START-UP CULTURE

Joanna Saw Khai Sing
Senior
Hwa Chong Institution alumnus

The 8-week TU Berlin Value-added Innovation and Enterprise Work (VIEW) Programme is an exclusive collaboration between TU Berlin Summer University and SUTD. Learn from industry experts and meet with mentors from Berlin's entrepreneurial start-up scene as you embark on a human-centered innovation and hands-on start-up learning experience.

How is the entrepreneurship scene in Berlin different from Singapore's?

While Singapore is striving towards having more start-ups, Berlin is known to be one of the world's best start-up hubs. The entrepreneurship scene in Berlin is bustling, with multiple co-working spaces found across the city. Berlin is known to be a vibrant city full of different cultures, attracting many talented individuals from around the world. I managed to visit a few co-working spaces and go to various entrepreneurship events where I was able to talk to many interesting entrepreneurs. While Berlin is a small city like Singapore, I found that the number of co-working spaces and accelerators present seemed to be higher in Berlin. These co-working spaces were often more than a place to do work. They often had cafes, sleeping pods and recreational spaces. One of the co-working spaces I visited even had a space theme!

Three memories from your trip?

Staying together with the other SUTD students was definitely a memorable experience for me. I went from living alone to living in a house with 10 others! It was fun bonding over dinner and playing games like Just Dance together. Cooking dinner for 11 people is an unforgettable memory.

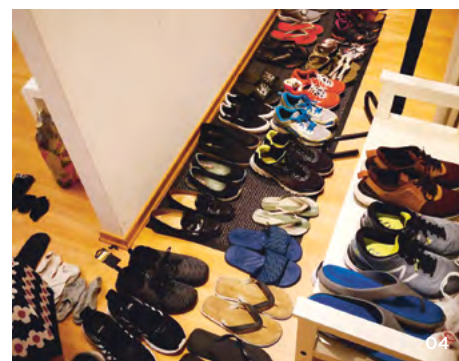


Another great memory would be when I visited Copenhagen on my birthday weekend. I took a bus (which went on a ferry!) there and explored the city. I went to Tivoli Gardens, the second-oldest operating amusement park in the world, and experienced the theme park that is said to have inspired Disneyland. I also had the opportunity to ride around the city on a rented bike, visiting both the scenic tourist spots and some hidden gems I found from cycling around.

My ultimate favourite memory of Berlin would be buying a bicycle and cycling around Berlin. Cycling in Berlin was convenient and safe, as they have a great network of bike paths and considerate motorists. Those of us with bicycles often cycled to school every morning and around the city. It was a fun way to get to places fast, enjoy the scenery and work off those döner kebabs!

Any advice to juniors who are intending to sign up for the programme?

To anyone thinking of going for this programme, just do it! It was undoubtedly one of the best summers I have ever had. Learn a bit of German before going there and definitely try to bike around to feel like a true Berliner. Enjoy the döner kebabs because I'm still missing them one year later. And while it's tempting to fill your weekends with trips out of the city, don't neglect exploring Berlin and enjoying a chill day at a park.



- 01 Winding down with an outdoor movie
- 02 Bungee jumping at Tiergarten
- 03 Exploring Copenhagen beaches on bicycles
- 04 How many pairs of shoes do 11 people need?!
- 05 Döner kebabs that I miss



BASKING IN SUSTAINABLE SWISS ARCHITECTURE

Benjamin Chong Mun Choen
Senior
NUS High School alumnus



SUSTAINABLE DESIGN OPTION STUDIO

The module builds upon and continues the Architectural Core Studio sequence. Each option studio culminates in a speculative final project that will articulate architecturally specific positions regarding sustainable design in real world projects.

Daylightful Mixity was one of the ASD Sustainable Option Studios offered last fall, conducted by visiting Swiss instructors Marilyne and Igor Andersen. I was one of thirteen students who had the opportunity to travel to Switzerland as part of the studio to learn about Swiss architecture and our project brief, a yet-to-be-built spatial formalisation of the main entrance of blueFACTORY, an emerging zero-carbon innovation district.

Before the start of the actual study trip, a group of us visited Lucerne, a town south of Zürich known for its picturesque riverside and mountains. We later joined the rest to visit Zürich, Basel and Fribourg.

Switzerland has one of the most overlooked collections of modern architecture, juxtaposed against historical buildings. The Swiss are known for their high level of workmanship, from the material and building finishes, to even their roads and pavements. The country is also increasingly recognised for its successful government efforts to encourage sustainable building construction by using renewable, local timber and minimising energy usage. We were fortunate to have lead architects as our guide for many buildings we visited, which gave us a unique insight to their design process. We visited sustainable zero-energy buildings, repurposed warehouses and milk factories, as well as several cooperative housing projects, the Swiss take on affordable social housing.

The last day of our trip was to our project site in Fribourg. Our studio aimed to question the evolving working and living typologies through programmatic mixity and sustainable systems. At the end of the studio, our designs would be presented to blueFACTORY, who also covered much of the trip expenses.

The best part of the trip was being able to visit the Novartis Campus in Basel, guided by Marco Serra, master planner for the project. Novartis is one of the largest pharmaceutical companies, and visits to the Basel campus are very restricted. Not only were we allowed inside the campus, but we also walked through many of the buildings, designed by world-renowned architects, from Herzog & de Meuron and David Chipperfield, to SANAA and Frank Gehry. With Marco as our guide, listening to his stories behind each building added even more insight to what was already a unique experience.

- 01 Morning trek up the Lucerne mountainside
- 02 Kalkbreite Cooperative housing, Zürich, constructed on top of an operational tram yard
- 03 Incredible sunset in Fribourg, on the last evening of our trip
- 04 Asklepios 8 in Novartis Campus, Basel, by Herzog & de Meuron
- 05 Transilager, Basel by BIG, an adaptive reuse of a railway warehouse
- 06 Toni Areal, Zürich by EM2N, an educational mixed-use center in a refurbished milk bottling factory
- 07 Zwicky Süd cooperative housing, Zürich, by Schneider Studer Primas



One benefit you can get as a KAIST student is to kayak for free at the Gapcheon River and it is only 15 minutes away from school! Just present your student ID to them and you are good to go! As you walk from the school to the river, you will pass by huge, colorful flower fields as well.



Can you believe that this samgyetang (ginseng chicken soup) was bought from the school cafeteria? Of course I knew the food in Korea was going to be good but never was I expecting the school food to be as good as well! The school food was really affordable, usually ranging from S\$2-6.



Being thoughtful, the inter-relations team from KAIST planned many cultural activities for us during the weekends. One of them was letting us don traditional Korean costumes, known as hanbok, and roam the streets for two hours. Shopping and eating while dressed in a hanbok was definitely an experience to remember.



Another cultural activity was letting us attend a cooking class and learn how to make our very own bibimbap! It was really fun cooking with the other international students, we even got competitive and tried to see who could make the prettiest and tastiest bibimbap!



HEAD OVER HEELS WITH SOUTH KOREA

Natasha Koh Bin Rou

Junior

Pioneer Junior College alumnus

An annual summer programme hosted by KAIST, KISS emphasises interdisciplinary studies, crossing over a variety of subjects primarily related to science, engineering, and design. Students from Korea and abroad experience innovative teaching and a blend of cultures in the programme, a unique opportunity that interlaces a tapestry of academic exchange.



The KISS programme allowed us to experience innovative teaching that broadens our cultural perspectives and intellectual horizons while building lifelong relationships with students from different backgrounds, and enjoying summer in the most unique way. Throughout my stay at KAIST, we were well taken care of and had many activities planned for us to learn more about Korean culture amidst my daily classes for the two modules that I took, 'Korean' and 'Big Data and Language'.



Have you tried bowing 108 times in one sitting to show prostration, a gesture used in Buddhist practice to show reverence to the Triple Gem (the Buddha, his teachings and the spiritual community)? How about staying a night in a temple and having a communal open shower? KISS included a temple stay for us and to make things better, it was not just any temple. It is a temple called Magoksa and it is a UNESCO World Heritage Site.



We usually end school by late afternoon so after class, we will visit famous attractions in Daejeon. This was taken at the highest point of Daejeon, Daedong Sky Park. Unlike Seoul Tower where there are tons of tourists, Daedong Sky Park is not known to many so you can enjoy the scenery in peace.



Of course, we cannot leave out fried chicken when we talk about Korea. For dinners, we will eat outside school and fried chicken with beer (chimaek) was always our top choice. It usually comes with free flow of side dishes like kimchi, salad, chips and pickled radish. Looks delicious right?



During the weekends, we will travel to nearby cities to play. I wanted to visit Busan during one of the weekends and thankfully, I managed to find other international students who were willing to join me. It was a short 3-day 2-night trip but many fond memories were made with new friends.



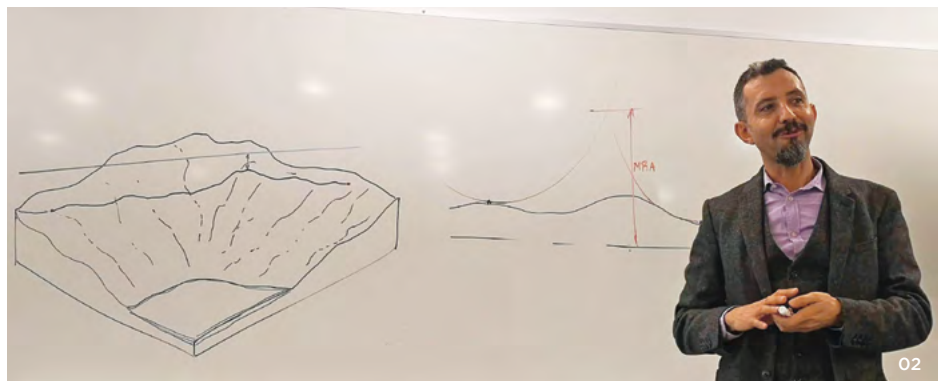
ADVENTURES TAKE FLIGHT IN MEXICO

Ng Ri Chi
Freshmore
NUS High School alumnus

Designed for international students interested in acquiring the basic knowledge and skills to venture as young professionals in the aeronautic industry field, the programme provides the opportunity to live in three vibrant Mexican cities – Querétaro, Chihuahua and Estado de México. Students will learn about the aeronautical industrial ecosystem, key technological trends, and the relevance of this Mexican industry in the international setting as they travel and work in multicultural environments.

Last winter, my friend Kai Feng and I went for an exchange at Tecnológico de Monterrey's (ITESM) iWinterMx aeronautics industry programme. We had little idea what we were signing up for, but we were also drawn in by the sense of adventure.

The programme involved us moving to different cities in Mexico every week, where we took aeronautical classes in the different campuses of ITESM. The lessons



included the different engineering systems in aeronautics, manufacturing processes as well as some rules of flight. Some of the lecturers had previous experiences in the aeronautics industry, and the experiences they shared with us really brought the lessons to life.

Part of the course work was also to build a model aeroplane, which had to be flown at the end of the course. The model looks deceptively simple to build but the process was very much more complicated and tedious than we thought. However, by building that, we also spent fruitful time bonding with our fellow course mates from Mexico, Korea, China, Denmark and Australia.

Being near the US and having lower cost of business means that it is a booming centre for the manufacturing and refurbishment in the aeronautics industry. Part of the course was also to visit aeronautic companies, including Bell Helicopter and Aeromexico. However, I was most impressed by ETU, a local SME that went from just manufacturing turbine parts to being Mexico's first company to be certified to AS9100C level.

Throughout our stay there we were well taken care by our student chaperones and the staff at each campus. They made us feel safe and at home, despite us being half a world away from Singapore. They also exposed us to a variety of Mexican food, which were all very different from what Singapore has but just as good. For example, corn is a major staple food in Mexico, and it is usually made into a torta or flat bread topped with different ingredients (for example, barbacoa or slow



cooked meat). Another really good dish is rice with mole sauce. The sauce is made of up to 20 ingredients roasted and ground together, and has a really complex flavour.

- 01 Every week, there was an excursion where we became tourists. Here we are at the ancient city of Teotihuacan, which used to be a cosmopolitan city 1000 years ago.
- 02 Impressive drawings by the professor who taught us aviation regulation and organisation
- 03 Everyone had a second serving of barbacoa (slow cooked meat) and sidral (apple cider)
- 04 Company visit to Aeromexico in the State of Mexico
- 05 The plane was flying!



OFF THE BEATEN PATH IN THE UK

Koh Zhi Xin
Senior
NUS High School alumnus

GLOBAL EXCHANGE PROGRAMME (GEXP)

The GEXP offers opportunities for students to spend Term 6 taking courses in world-class overseas universities with deep expertise in various fields.

My fondest memories in the UK include grey, dreary weather, and paying too much for microwaved meals at Tesco. As the only and first SUTD student to go on exchange at the University of Bristol, the experience was full of cultural shocks and a sense of general cluelessness. Nevertheless, I was immensely lucky; I made some great friends along the way, and explored some wonderful places. So if you ever find yourself in the UK, here's a list of places to check out.

London, England

Of course, we can't talk about being on exchange in the UK without mentioning London. A mere 2-hour bus ride away from Bristol (traffic and long waiting times notwithstanding), I visited London twice over the course of my exchange. Despite the suffocating crowds and screeching subway, I loved the city. It boasts a range of eclectic architecture, the most outstanding of which lie in the gothic styles of Westminster Abbey and St Pancras, and a diverse melting pot of cultures, evident in the numerous Michelin-starred fusion restaurants dotting the city.

Bath, England

Unsurprisingly, Bath is renowned for its historical, well, baths. Constructed as spas by the Romans in the 5th century, the original baths now exist as a museum, alongside a neighbouring modern spa. Besides the baths, the architecture throughout the city is notably Georgian,



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and being in Bath is oddly reminiscent of travelling back in time to centuries past.

Scottish Highlands, Scotland

This includes trudging through icy rivers in Glencoe, a 24-km hike on the West Highland Way, and visiting some hungry reindeers in Glenmore. The picturesque landscape of the Highlands is nothing like the mountain ranges seen in continental Europe; here, you get miles of vast rolling hills, misty lochs, and occasional flocks of sheep along the way. I visited just



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as winter began to set in, and the frost that sparkled on the coarse grass along the trails truly made for a mystical sight. Beyond the gorgeous views, I'd also recommend trying Scottish black pudding – it's a breakfast food you'd hardly find anywhere else in the world.

Giant's Causeway, Northern Ireland

A 1-hour flight west of Scotland, you get a 180° change in scenery. Along the northern coast of Northern Ireland, amidst the rocky cliffs and howling winds, you see Giant's Causeway. The home of Irish giant Fionn mac Cumhaill (or alternatively, the aftermath of a volcanic eruption), these interlocking basalt columns are iconic because of their almost-perfect hexagonal structures. Other than the basalt columns, a clifftop walk along the coast also brings you past other interesting geological features – look out for Fionn's chimney stacks and boot!

Bristol, England

Objectively speaking, Bristol is definitely less attractive than London, or any of the other major UK cities. But if you dig a little deeper, Bristol has a wonderfully unique underground culture. It's home to original Banksy graffiti and a vibrant music scene, from grungy techno clubs in cellars to old-school jazz pubs with brass bands.



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Going on exchange in the UK was a wonderful experience, but it comes at a cost – staying in the UK was undeniably expensive. Food, transport, and accommodation costs there far surpass those in other European countries, so do keep budget in the forefront of your mind when applying to exchange programmes.

- 01 Bath Abbey
- 02 Spotted reindeers!
- 03 Scottish Highlands
- 04 Graffiti
- 05 Some (literally) underground pub in Bristol, with people I've just met



EYE-OPENING JOURNEY IN TAIWAN

Caleb Lee Liang Heng

Senior
Victoria Junior College alumnus

During September last year, I had the privilege to spend 4.5 months in National Taiwan University. Despite having gone to Taiwan several times, this opportunity to live and talk to people from a range of ages, backgrounds, and nationalities was eye-opening and novel in its own way.

For example, I found the Taiwanese, even the younger generation, to be more politically aware and involved than most Singaporeans in general. This could be attributed to their complex history, polarised ideas among political parties, as well as complicated international relations. Talking to them shed some stark cultural and political contrasts between Taiwan and Singapore, despite sharing some



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similarities as a small nation of majority Chinese descent. As a Singapore citizen, I would feel grateful for being under a stable political system, yet wonder if we have taken it for granted, or have become passive and ignorant as a result of our comfort.

I believe this semester also had an impact on my direction in life to a certain degree since it was previously formed with a worldview confined to the horizons of Singapore. With my former lack of international exposure induced by the high level of comfort in Singapore, I could only see opportunities and possibilities for the future within the nation. Moreover, growing up in a society where meritocracy is the basis for allocation of scarce opportunities, it was easy to mindlessly pursue the common idea of "making it", mostly driven by groupthink and fear of falling behind in the rat race. Getting more exposed to individuals who valued passion and human connection over anything else brought so much life even from a simple conversation, and it felt like something I was deprived of living in a fast-paced cosmopolitan



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city. I believe it sheds light on my intrinsic motivations and reminded me to always keep the purpose of my pursuits in check.

All in all, this experience enabled me to immerse myself and see Taiwan from a local perspective - the natural environment, geopolitical scene, humour, slangs, school life and working culture, societal norms and social constructs, how they shape their collective worldview and become reinforced as a result, new trends and lost traditions, other intricacies of how it is like to grow up and live in Taipei and other parts of Taiwan, and how all of these tie in together in the end. I highly cherish such forms of cultural exchange and it certainly deepened my understanding of Taiwan more than just another go-to holiday destination!

- 01 Royal Palm Boulevard, National Taiwan University
- 02 One of the first few friends I met during a photography event
- 03 Cultural exchange with students of Tainan Neijiao Elementary School
- 04 Familiar "Singlish" of a Taiwanese who spent the past 20 years living in Singapore
- 05 Yang Ming Shan National Park, Taipei, Taiwan



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GOING BEYOND INTERNSHIPS

Every #SUTDent does at least one 16-week internship. With over 1000 industry partners pledging internships, it is a vote of confidence that the SUTD education meets industry challenges and is what the world needs right now. These local and overseas opportunities equip our students with the knowledge and hands-on skills required to prepare and help them make informed decisions about their future.

*Note: In light of the COVID-19 situation, all overseas internships have been suspended until further notice.



LEARNING TO DESIGN REAL-WORLD SPACES

Lynus Lim Ming Jun

Junior

St. Andrew's Junior College alumnus

P.A.C is an architectural firm that features a diverse range of projects spanning from Master Planning to the fabrication of commissioned furniture. The opportunity to work there has given me insight on design processes, as well as the reality of working on commissioned projects.

My daily work at P.A.C involved designing spaces such as hotel guestrooms, elevator interiors and public facilities for an upcoming ski resort in Beijing, China. Starting out was difficult since I had little experience in interior design and in the software used in the company. I had to broaden my knowledge of material pairings and the appropriate context to use each material. Luckily, the use of Unreal Engine in Term 5 helped to introduce materials and lighting. This gave me some basic understanding, which helped in translating the ideas to actual models to be rendered. Another thing I learned was the planning that goes into designing these developments, such as electrical setting out, different kinds of floor plans and signage placements.



Another notable task I was involved in was the renovation of a library for a local primary school. I was involved in the fabrication of wooden pieces for some feature walls and signages. My experience with laser cutting technologies in SUTD helped me to jump onboard and contribute right away.

The tasks I undertook help to develop my understanding of the hospitality

and residential architecture fields and will definitely aid me in making a more informed decision for my future career. This internship at P.A.C has been fruitful, and I am keen to apply the skills I have learnt here for the rest of my studies and beyond.

- 01 Render of the hotel's mini gym room
- 02 Render of the public washroom
- 03 Render of the elevator interior
- 04 Laser cutting the wooden signage



Changi
General Hospital
SingHealth



BEYOND THE ARCHITECTURE OF A HEALTHY LIVING SPACE

Sandy Low Yu Xian

Junior

Tampines Junior College alumnus

Healthcare in Singapore has evolved beyond care in the hospital to care in the community, including efforts to promote active living and healthy habits. With this as the focus, I had the opportunity to work with Changi General Hospital's (CGH) Community Development Office to conceptualise, research and design how community spaces can be optimised to promote physical activity. This is very relevant to my interest and pillar of study. Taking a design thinking approach learnt in SUTD, it allows us to understand the needs of those we are building for.

One of the highlights of my 16-week internship at CGH is the opportunity to network and work together with many healthcare professionals and community organisations. I also learnt from the SUTD Social Urban Research Group (SURGe) how architects collect data of their target population. I developed an online survey to better understand the spaces that Tampines residents use and partnered Northeast Community Development Council to reach out to almost 200 residents. I then organised and led an on-site mixed-method survey involving almost 60 residents, which was well received.

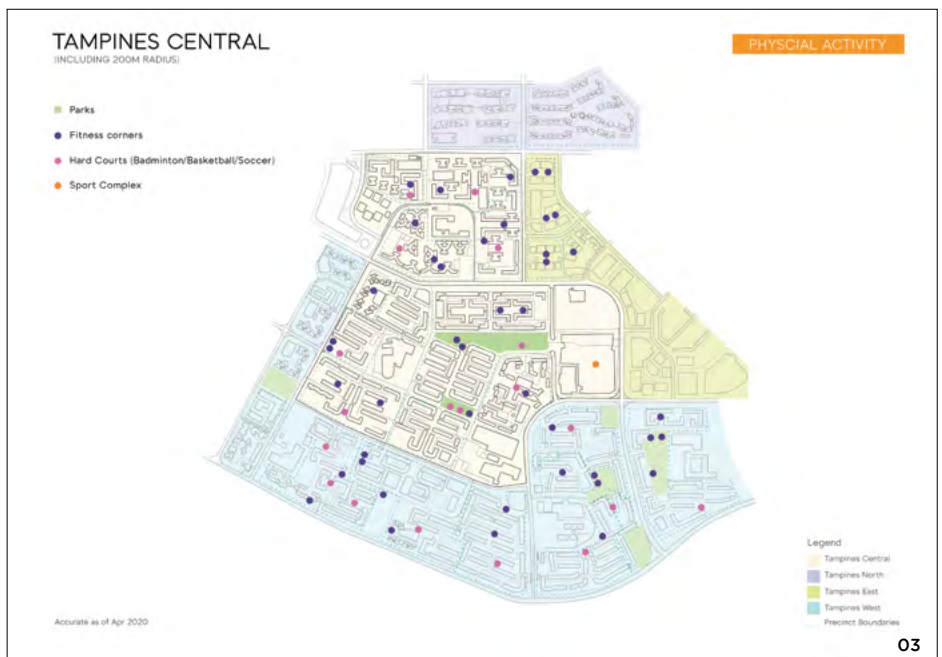
The findings are very impactful and I was able to present them at management meetings. With new knowledge and insights gained through my internship, I discovered how architecture and the opinions of users play a critical role in urban planning. Design thinking is key in urban planning. I am glad that at SUTD, "Design" is at the heart of our curriculum, and I'm able to apply that during my internship at CGH.



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- 01 Conducting the community engagement at Our Tampines Hub with an intern from People's Association
- 02 Poster designed for sharing of survey with Tampines residents
- 03 Asset mapping for Tampines Central and its surrounding precincts



EVOLVING IN AN INNOVATIVE ENVIRONMENT

Noorbakht Khan D/O Mohammad Ayub Khan
Junior
Meridian Junior College alumnus

“The problem-solving skills taught in our Freshmore year at SUTD as well as the Python fundamentals gained from ‘The Digital World’, a subject taught in Term 3, has helped me when it came to observing certain Demos and making meaningful tech suggestions.”

During the course of 16 weeks, I was attached to the Worldwide Public Sector Specialty Team in Amazon Web Services (AWS) as a Solutions Architect Intern. Though I managed this internship while working from home entirely, my internship experience was nothing short of AWSome! I found myself contributing to the team’s mission in many ways and learning various things along the way.

As part of my project, I was involved in observing technical demos including sessions on Machine Learning (ML), Security, Database, Microsoft, End User Computing, High-Performance Compute, Migrations and Amazon Connect (Cloud Contact Centre). The aim was to collect and evaluate these Demos

done by Solutions Architects across the Asia-Pacific & Japan (APJ) region and find ways to think big and further innovate.

Through this, I was exposed to different technologies as well as the cloud computing services that AWS provides. I also got the opportunity to communicate with other AWS professionals from the APJ region. The problem-solving skills taught in our Freshmore year at SUTD as well as the Python fundamentals gained from ‘The Digital World’, a subject taught in Term 3, has helped me when it came to observing certain Demos and making meaningful tech suggestions.

My greatest takeaway would be having the opportunity to experience the peculiar culture at AWS. At AWS, it’s different: you live and breathe every day the Amazon Leadership Principles, which is the company’s DNA. Through this experience, I had the opportunity to see how the builders at AWS apply the different Leadership Principles in their daily work life.

Overall, it was amazing to be surrounded by people who are driven, encouraging, supportive and passionate in what they do!



SEEING THE BIG PICTURE WITH BIG DATA

Tan Yong Da Dino
Junior
Meridian Junior College alumnus

I was a Data Engineer Intern at Unilever Information & Analytics Department (I&A).

My work focused on the development of a Trade Promotion Analytics (TPA) platform, a data-driven interactive dashboard that allows clients to analyse the performance of their products and promotions across retailer stores. It makes use of primary consumer data that is developed into structured dashboards and visualisations, enabling clients to adopt a targeted approach in their sales decisions.

As a data engineer, my main role within this TPA project is to process and transform primary consumer data into key business KPIs such as return on investment (ROI), market share, and promotion uplift, before handing over the data to business analysts for dashboard development. During this coding process, I regularly liaised with foreign clients to communicate data requirements, as well as rectify data quality issues. Given the large scale of the datasets, I had the opportunity to work with big data within a cloud environment as well as familiarise myself with its various applications.

Over the course of the internship, I acquired a technical grounding of R,

a programming language in both data processing and analysis, and developed a business acumen for the fast-moving consumer goods (FMCG) industry. The curriculum in ESD was useful in helping me adjust to the learning curve as a data engineer in Unilever. Courses like ‘Data and Business Analytics’ and ‘Manufacturing and Service Operations’ had client facing projects that allowed me to draw parallels during my internship, in both the technical and communicative aspect.

Overall, this internship at Unilever has helped me develop into a more task oriented and code-efficient engineer, and I am grateful for the experience.

“The curriculum in ESD was useful in helping me adjust to the learning curve as a data engineer in Unilever. Courses like ‘Data and Business Analytics’ and ‘Manufacturing and Service Operations’ had client facing projects that allowed me to draw parallels during my internship, in both the technical and communicative aspect.”



PUTTING ON THE DESIGN THINKING HAT

Kang Jun Yan Karyl
Junior
Nanyang Junior College alumnus

My internship stint with Changi Airport Group (CAG) was from May, and I worked on various projects with Airport Operations Management, Experience Creation Team. One of the projects I was involved in was "Redefining Cabs@Changi".



Ideas generated for one HMW statement

Cabs@Changi is an application taxi drivers use to pick up or drop off passengers at Changi Airport. Air travel demand has been affected due to COVID-19, leading to a fall in demand for taxis to and from the airport. CAG wanted to redefine and implement changes to the app to better engage taxi drivers during this difficult period and explore ways to encourage them to continue coming to Changi Airport to serve visitors at the airport.

Using design thinking methodology, I interviewed taxi drivers to gain insights and identify needs to craft user needs and "How Might We" (HMW) statements (which are questions that aim to reframe problems into opportunities or potential solutions). With my team, we brainstormed and evaluated various ideas, worked on prototypes, and finally, went on with user testing. Some ideas that were chosen to undergo a prototype

process included a Cabs@Changi intuitive info dashboard, a Food Delivery option and a Loyalty Programme for taxi drivers.

Throughout the project, I learnt new skills, knowledge and perspectives. I was able to identify areas I could improve on as well as excel in. I was first introduced to design thinking in the 'Introduction to Design' and 'Engineering Systems Architecture' courses in school, as well as in my Fifth Row (a term used by SUTD to refer to co-curricular activities), Design Odyssey, and it is something that I enjoy.

At SUTD, design thinking is incorporated into our curriculum and programmes. Every project I undertake in school adds to my skillset and it is a continuous learning process. At the heart of design thinking is the search for opportunities and focus on user-centricity, instead of finding problems and solutions from the start. With this approach, we can bring about better and needed change for end-users and is something I'll continue to uphold in SUTD and in my future career.



Stakeholder analysis using MURAL



DECODING EYE-OPENING INSIGHTS

Sean Lew Teng Siong
Senior
Dunman High School alumnus

With thousands of different languages and frameworks available in the programming world, SUTD designs each of their modules meticulously to make sure that content is always up to date and relevant to real-world technologies.

During my summer in 2020, I interned at Carousell as a Data Intern under the Growth Team which handles data related requests and projects that impact seller and buyer experience on the platform. On top of assisting product managers and other stakeholders in understanding weekly trends and numbers, I also helped to build pipelines, dashboard and conclude results for product feature A/B experiments. I was also given the opportunity to work on impactful side projects which makes use of machine learning models for predicting and forecasting business metrics.

Being in the ISTD pillar in SUTD, I was exposed to database and machine learning concepts in Term 6 which built a strong foundation for me going into this internship. With thousands of different languages and frameworks available in the programming world, SUTD designs each of their modules meticulously to make sure that content is always up to date and relevant to real-world technologies.

In terms of technical skills, I became more proficient in writing efficient and scalable Structured Query Language (SQL) codes especially since I was dealing with big data, and SQL is one of the most popular and utilised languages by data analysts to manage data. Throughout my internship I also realised that being an amazing coder was not enough to make you a good data analyst, it was also important to know how to present your data effectively and tell a story with it to different stakeholders.

I would like to thank Carousell for the amazing opportunity and everyone on my team for the guidance offered throughout my summer internship!

CAREERS IN A NUTSHELL

ARCHITECTURE AND SUSTAINABLE DESIGN (ASD)



Bianca Su Fen Gill
SUTD Class of 2016
Nanyang Junior College alumnus

Company: RSP Architects
Planners & Engineers Pte Ltd
Job: Executive Architect

“ My designs strive to establish a connection with history and cultures which are interwoven organically with technological and creative disruptions. ”

Goh Jun Yang Lester
SUTD Class of 2019
Hwa Chong Institution alumnus

Company: SUEP Architects
Job: Assistant Architect
Country: Japan

“ I take pride in architecture design that combines modern environmental simulation techniques with a keen eye towards aesthetic detail. ”



ENGINEERING SYSTEMS AND DESIGN (ESD)



Ang Shuyi Delphine
SUTD Class of 2015
Victoria Junior College alumnus

Company: Changi Airport Group
Job: Manager, T5 Planning

“ I rethink existing operations and explore how innovative technology could transform them to deliver a seamless experience for passengers. ”

Ng Zi Kai
SUTD Class of 2016
National Junior College alumnus

Company: Princeton Digital Group
Job: Business Strategy and Customer Success Manager

“ I ensure the perfection of our partners' digital infrastructure, providing the bedrock for the thriving global digital landscape. ”



ENGINEERING PRODUCT DEVELOPMENT (EPD)



Dexter Chew Xuan Han
SUTD Class of 2015
Anglo-Chinese Junior College alumnus

Company: Dyson Operations Pte Ltd
Job: Design Engineer

“ Leveraging design and engineering, I help develop revolutionary products that aim to better the landscape of personal care. ”

Isha Shah
SUTD Class of 2017
Victoria Junior College alumnus

Company: foodpanda
Job: Product Manager

“ I build an efficient and hassle-free self pick-up experience for our customers. ”



INFORMATION SYSTEMS TECHNOLOGY AND DESIGN (ISTD)



Isaac Ashwin Ravindran
SUTD Class of 2019
Raffles Institution alumnus

Company: Facebook Inc.
Job: Software Engineer
Country: USA

“ I design and engineer social media products that evoke meaningful interactions and content to bring the world closer together. ”

Cindy Ong Wen Ling
SUTD Class of 2019
Dunman High School alumnus

Company: Mastercard
Job: Product Manager

“ I build a world beyond cash - a world convenient and safe to transact in. ”



Joanne Tan Huishan
SUTD Class of 2016
Victoria Junior College alumnus

Company: ResMed Asia Pte Ltd
Job: Systems Engineer

“ I design lightweight and efficient portable oxygen concentrators for COPD patients, allowing them to remain mobile and continue active lifestyles. ”



Koh Jing Yu
SUTD Class of 2019
Dunman High School alumnus

Company: Google
Job: AI Resident
Country: USA

“ I tackle fundamental machine learning research to push the state-of-the-art in vision and language artificial intelligence. ”



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