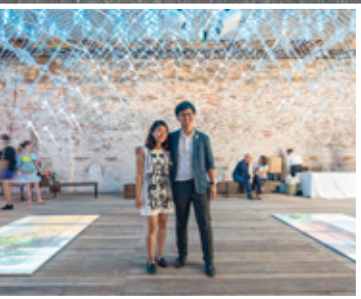


BEHIND THE SCENES

# BRS

ISSUE 02



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  [SUTDsg](#)

Check out more exciting stories on #WeAreSUTD blog at [wearesutd.sutd.edu.sg](http://wearesutd.sutd.edu.sg)

# SUTD'S GREAT FIGURES

Established in  
**2009,**  
we'll be celebrating our  
**10<sup>th</sup>**  
anniversary next year.

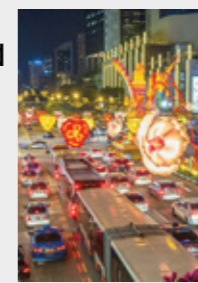
We're  
**1<sup>st</sup>**  
on the list of the top  
**10**  
emerging engineering schools in the world.\*

Our graduates earn the highest starting salary of  
**\$3700,**  
highest among NUS, NTU, SMU and SIT.\*

With close to  
**100**  
Fifth Row clubs, SUTDents get  
**2**  
afternoons each week to pursue their passions.



**7** The number of years our SUTDents designed the Chinatown CNY light-up. They also participate in other festivals like i Light Marina Bay and Singapore Night Festival every year.



Our SUTDents can start building a better world through access to research opportunities from



Source: The Straits Times © Singapore Press Holdings Limited. Permission required for reproduction.

**Day 1**

SUTDents have access to the Fabrication Lab, a world-class maker space for the next big invention  
**24/7**

With close to  
**500**sqm  
of incubation space, SUTD is an entrepreneurs' heaven and the birthplace of over 30 start-ups.

We take pride in attracting a

**40%**  
female cohort yearly.



**100%**  
of our scholarships are bond-free.

SUTDents have worked on  
**>5000**  
life-improving design projects since  
**2012**

**Down-Town Line 34**  
The Upper Changi Station is right at our doorstep.

One success story is Codomo - the brainchild behind the coding card game Potato Pirates.



- Raised over **\$250K** within 10 hours of launch on Kickstarter
- Sold more than **10,000 decks** within 6 months
- Awarded the **SG Good Design Mark** with a Special Mention
- Translated to **21 languages**

\*Source: 'The global state of the art in engineering education', a study commissioned by the Massachusetts Institute of Technology (MIT)

\*Median gross monthly salary. Based on the results of the annual Joint Graduate Employment Survey conducted by SUTD and four other autonomous universities - NTU, NUS, SIT and SMU

# THE FUN, THE LAUGHTER, THE SWEAT

They say that all work and no play makes Jack a dull boy. Well, not here at SUTD. With a vibrant range of dynamic Fifth Row clubs, there is really no time for Jack to be dull. **Fifth Row refers to CCAs, where we get our Wednesday and Friday afternoons off to do the things we love!** Today, there are **close to 100 Fifth Row clubs** ranging from arts to sports to special interests.



**See Yan Chee Benedict**  
Junior  
St. Andrew's Junior College Alumnus

## ARTS AND CULTURE



### SCRATCH!

Being a fan of electronic dance music, I joined SUTD Scratch! in 2016 with no prior experience in DJ-ing. When I heard that Scratch! members could join and learn the art from the ground up, I decided to give this unique form of art a try. Not only was I able to explore my passion in a safe environment, there were also many opportunities to perform at events. My most memorable performance was at the St James Power Station. It was truly an eye-opening experience to be able to take control of the energy on the dance floor.

DJ-ing is a skill often associated with males and there are far fewer female DJs, but that doesn't mean it's any harder for female DJs to bring on a great party! I'm proud to be a DJ and hope to inspire ladies to learn the art of DJ-ing as well! Anybody with a passion for DJ-ing has the potential to master the skills needed to rule a dance floor.



**Michelle Chandiari**  
Junior  
Catholic Junior College Alumnus



**Bands**  
(@sutdbands)



**Vocomotives**  
(@sutd\_vocomotives)



### SKETCHERS

I started sketching from the Urban Sketching module in SUTD. From there, I joined the Singapore Urban Sketchers community and was impressed by what people from different walks of life shared. I thought... why not start a community in our own backyard, and that's how SUTD Sketchers was born.

Every year, we organise an overseas trip to expose ourselves to a different environment. In 2017, we went to Jakarta and later this year, we are heading to Muar. Sketching is a way for me to calm my mind, relax, and discover new things that I have never noticed before. The process of creating a sketch will open your mind to see the world in a different perspective and now, we have a community within SUTD to do it!



**Hendriko Teguh**  
Senior  
Innova Junior College Alumnus



**Dance Derivativez**  
(@dancederivativez)



**Ballroom Dance**  
(@sutdballroom)



**Taal Indian Dance Club**  
(@sutdtaal)



**Chinese Orchestra**  
(@sutdco)

## SPECIALIST



### FLIPSIDE EXHIBITION BY 3DC X SUTDIO

3DC is the Digital Design and Development Club. We work on cool ISTD-related projects and spread our passion for programming throughout SUTD! I joined 3DC out of an unscratched itch to work on something interesting outside of class. At that time, I already had programming experience and wanted to work on a hardware project next.

SUTD is a tight-knit community and we have classmates who are active in SUTDio (another Fifth Row club that aims at building a close-knit, holistic and collaborative architecture community in SUTD). They found out that 3DC had done a similar project before - wiring up a staircase to play music, so they approached us to collaborate on an installation at Esplanade, which was to be bigger and better! We turned a staircase at the atrium of Esplanade into a piano using eight infrared sensors, one on each step, to detect the presence of a person stepping, and a Raspberry Pi to play the piano notes.

The other part of the installation was a James Bond-style tunnel made out of painted cardboard, with lasers that you couldn't touch, otherwise an alarm would go off. SUTDio even had a smoke machine to fog up the tunnel!



**Nikos Chan Wai**  
Junior  
Raffles Institution Alumnus



**Grub Club**  
(@sutdgrub)

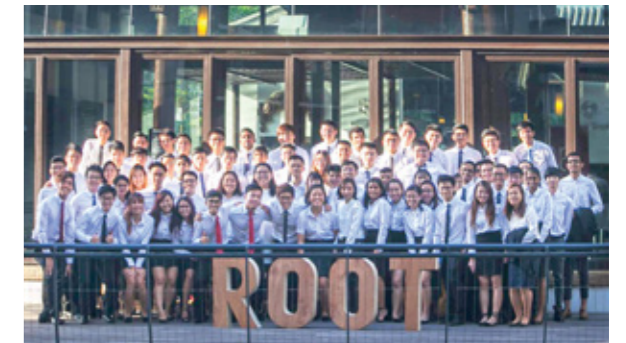


**Energy Club**  
(@sutd\_energyclub)

## STUDENT GOVERNMENT

The SUTD Student Government, also known as ROOT, is dedicated to enriching student life and acts as a bridge between the student populace and school management. ROOT is divided into the following committees: Communications and Public Relations, Events and Welfare, Student Initiatives, Orientation and Finance. Each has their own specialised set of tasks but they all ultimately come together to foster a spirit of innovation and openness to new ideas.

What makes ROOT stand out from the other Student Unions here in Singapore is that our SUTD family is a very close-knit community, thus no voice goes unheard. We are always open to your suggestions and would love to work hand-in-hand to make life here at SUTD better than ever!



### ROTARACT@SUTD

I joined Rotaract@SUTD because I like the freedom of being able to propose community projects that will benefit the underprivileged. As part of our International Service Projects, we organise yearly trips to villages in Vietnam and Laos to understand their problems and provide solutions to improve their circumstances. Crazy ideas were welcomed, like installing solar panels and water filtration systems for the villages.

Fundraising, pre-trip preparations, and local Community Involvement Projects were some of the really cool things that bonded our team. Our local projects include the YEAH! Programme, where we help to tutor students and Newton's Cradle, a science and technology workshop promoting a spirit of learning through fun ways (like Lego EV3) to children from lower income families.



**Charlene Boo Hsueh Ling**  
Sophomore  
St. Andrew's Junior College Alumnus



**eSports Club**  
(@sutdesports)



**Greenprint Club**  
(@sutdgreenprint)

## SPORTS



### CRUX 2018 BY SUTD CLIMBERS

Deep water soloing is a form of rock climbing where climbers scale a climbing wall, over a water body, without harness or rope. Upon completion of the climb, climbers will descend into the water. Deep Water Soloing is also known as "Psicobloc" which means psycho bouldering.

CRUX 2018 was held at Toa Payoh Swimming Complex in August. The event, which was in its second year, was part of GetActive! Singapore and Singapore National Games 2018. This year, we attracted about 150 competitors which includes both National and International climbers.

CRUX has revolutionised the Singapore climbing scene. Organised by SUTD students, we made use of technology to create our own live scoring system and laser engrave our event logo. Our club even painted the climbing wall ourselves. CRUX 2018 is a grand example of how hard work, innovation and a whole lot of passion can allow one to make the wildest of dreams come true.



**Teo Yi Liang**  
Senior  
Singapore Polytechnic Alumnus



**Cuesports Club**  
(@sutd.cuesports)



**Judo**  
(@sutdjudo)



**Ultimate**  
(@sutdultimate)



### SUTD VOLLEYBALL AT WORLD UNIVERSITY GAMES

I was first introduced to volleyball by my eldest sister during primary school. It used to be one of our daily bonding activities.

In 2015, I was scouted to represent Singapore in the Sea Games. Earlier this year, I made the decision to switch to beach volleyball and represented both Singapore and SUTD in the World University Championship (WUC). It was an amazing experience and definitely an honour to be able to don the Singapore flag on my chest and represent SUTD in such a prestigious competition. I managed to make heaps of new friends and learnt more about new cultures along the way.

With a training schedule of at least six sessions weekly, it is definitely a struggle with very limited time for my studies. However, I realise the importance to work around that and to capitalise on whatever remaining time I have. Presently, I'm really motivated and looking forward to participating in the next WUC 2019 in Spain.



**Kingsley Tay Zi Hao**  
Sophomore  
Temasek Polytechnic Alumnus



**Diver Jonathan Chan Fan Keng,**  
SUTD pride at #AsianGames2018





# HOUSE GUARDIANS, AT YOUR SERVICE!

**Gan Jia Min**  
*Junior*  
*Sunway College KL Alumnus*

We are a bunch of passionate kids intent on providing a lively, homely and memorable hostel life for our fellow students.

Our role as House Guardians (HGs) aren't just limited to ensuring the wellbeing of residents, but also to contribute to the vibrancy of the hostel through exciting initiatives and to be their mouthpiece in managing any hostel-related matters.

In short, we serve the residents in every possible way by being a friend, a listening ear and a voice for them.

**How do HGs welcome freshmores?**  
 On matriculation day when the freshies are moving in, the HGs provide a mini "concierge service" by welcoming the residents, and showing them how to access their rooms and the communal spaces.

Over the first two weeks of the term, while giving out matriculation gift packs to the new residents, the HGs of the respective floors take the chance to introduce themselves and get to know the residents. Through the floor events, the freshies get to meet their fellow floormates and interact with seniors. This helps them to adapt well to the hostel life and get valuable advice for the years ahead in SUTD.

**What are some key events organised by HGs?**  
 Each term, we have at least six events ranging from small to large-scale ones.

Floor events, held two to three times per term, include simple activities and supper hangout sessions which foster interaction between



floormates. We also have interest-based events almost every month to connect residents with similar interests and hobbies through workshops or outdoor activities. These include stamp carving, magic and coffee painting workshops.

Apart from these, we also have hostel-wide events where residents get to meet many other residents, participate in action-packed game rooms and even get free food and photos! All in a single night.

**What do you think is unique about SUTD's student housing compared to other universities?**  
 All students reside on campus in their freshman year. We have all the opportunities to build strong friendships, join various events or fifth rows together or mugging without the worry of missing the last train etc. Thus, it creates a strong sense of community and enriches our experience as students.

- 01 Floor event - A simple hangout session with floormates
- 02 Coffee painting interest-based event
- 03 Stamp carving workshop
- 04 Polaroid photo of summer HGs and the new batch of HGs



# BREAKFAST'S PACKED, LET'S BEGIN!

**Loo Jun Wen**  
*Junior*  
*Anglo-Chinese Junior College Alumnus*

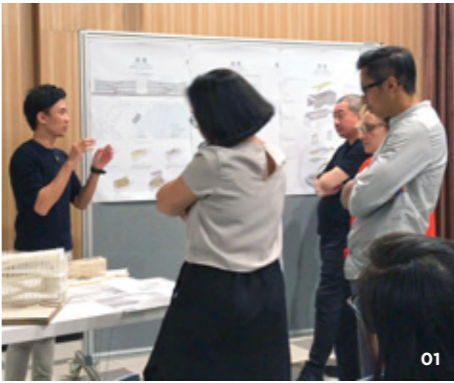
**0815hrs**  
**Rise and Shine**  
 As the sunlight lifted my eyelids, the day started with a simple cup of coffee in my favourite tumbler and some peanut butter bread to eat along the way to class!

**0900hrs**  
**20.212 - Digital Design and Fabrication Lecture**  
 Finishing my breakfast as I entered the lecture theatre, Prof. Stylianos Dritsas revealed the brief for our upcoming project, to build a wind tower as high as possible using wood! My bread almost took a u-turn back up my throat as being the first batch to ever embark on this, we aren't sure if this 1:1 model we are making will actually stand! Excited yet intimidated, I gulped down my coffee and uncertainties.

**1000hrs**  
**20.202 - Architectural Structure and Enclosure Design**  
 To make sure our tower don't end up like the one in Pisa, we were all intently following the computation and simulation class taught by Prof. Sam Joyce, making sure our grades stand as tall as our tower!

**1300hrs**  
**Lunch Break**  
 Lunch at this hour is usually the most hectic but having my favourite laksa yong tau fu with my ASD classmates and freshmore friends made the day less scary, knowing that we are in this together.

**1500hrs**  
**20.222 - History, Theory and Culture (HTC) 2**  
 We delve deep into the history of architecture, from the ancient Egyptian, Greek, Gothic, Victorian, Bauhaus style all the way to Brutalism and modern architecture!



**1800hrs**  
**Dinner Break**

**1930hrs**  
**Mountaineering Training**  
 Whether we are training to scale the icy peaks in China/Kazakhstan or just keeping fit, our training ground stretches from the hostel stairs to SUTD's state-of-the-art Sports Centre where the fitness corner and track are our usual hangouts!

**2130hrs**  
**Shower and Back to Studio to work on Core Studio!**  
 Powered up from training and a refreshing shower, time to return to my Studio as Core Studio work awaits with many more MOMA (Museum of Modern Arts) floor plans and designs pending to be realised on paper and models. Gonna start working!

**0100hrs**  
**Sleep**  
 Turning in to rest for the next day which is hopefully filled with new ideas and a miracle to complete all my work!



- 01 Final term 5 crit session with more profs than my hours of sleep
- 02 Bright lights and stage fright for Channel U's Hey DJ Top 10 finals
- 03 Glacier-deep and snow-capped peaks at Siemienova Glacier Base Camp, Kyrgyzstan
- 04 4-month internship with colleagues who are like my family in Sandowichi (SANDWICH) in Kyoto!
- 05 Ripped my jeans but totally worth it for our wind tower

**Life at SUTD**

- President of SUTD Mountaineering Club - climbed five peaks and led three expeditions including Mt. Dafeng in Sichuan, Ong Teng Cheong and Ong Siew May Peaks in Kyrgyzstan as well as Mt. Rinjani in Lombok Indonesia.
- Peer mentor and active member of SUTD Ambassadors.
- Represented SUTD and emerged as the 1<sup>st</sup> runner up in Channel U's Hey DJ competition.
- Led the design of the Chinatown CNY Lightup 2017 for the year of the Rooster, as well as workshops for Park(ing) Day 2016.
- Interned at SANDWICH, an arts and architecture studio by renowned artist, Kohei Nawa, based in Kyoto, Japan. Was part of the architecture team, working on the Familiar Flagship Store in Kobe, designing furniture, materiality and colour rendering of the restaurants, salons, café and main departmental store.

**Pursuing my passion**

- Founder and Pastry Chef of Baker.J, an online pastries platform.



# PROJECT SENTIENCE

**Loh Jian An Lionell**  
*Sophomore*  
*Hwa Chong Institution Alumnus*

Drowsy driving accounts for countless accidents around the world and Sentience is an AI-powered solution to combat that. We use a camera and computer vision algorithms to detect fatigue in drivers and to respond accordingly to keep them safe on and off the road.

The core team behind Sentience is myself, who is in charge of the software, Bryan, who does the hardware engineering and Aaron, who looks at the overall design of the product. We were supported by an extended team of three – Jia-Yee, Wen Qiang and Yue Yi.

## MAKING A DIFFERENCE THROUGH DESIGN

Design is literally everywhere at SUTD, with design experiences incorporated throughout the SUTD curriculum. At Freshmore year, **3.007 Introduction to Design** introduces you to the concepts of design at a variety of scales and through both engineering and architecture disciplines. You will also be exposed to core technology and design themes including principles, design processes, modes of thinking and analysis, relationships between form, space, structure and materiality, and the social and cultural aspects of design.

When we first started the 3.007 journey, we were both excited and apprehensive at the same time. Many of our ideas were guided by constraints like “Can we possibly build this?”. Naturally, many of our ideas were limited and unimpressive because our skillsets were limited too. Fortunately, the most initial ideation stage was about throwing caution to the wind. It was guided more by the problem we wanted to solve than what we could solve. We gravitated towards solving big, wicked problems because we all agreed that motivation was crucial for this project.

As time passed, we rose to the occasion and each learnt the skills needed to develop various aspects of Sentience. Be it designing, video-making or engineering, it was amazing to see everyone redefining themselves. As Sentience developed across various forms, we realised it had a competitive position among similar products because of its user-centric design and we decided to bring it out of school to test it.

Looking back, it was indeed important to be aware of our skills and limitations, but perhaps we could reframe the question from one of “Can we build this?” to “Can we learn to build this?” If you decided that the answer to the latter is “yes”, then kudos for having the courage to take the first step. To actualise it, you will need a whole lot of hustle and grit to bring you there. For us, there were countless nights when we stayed up, feeling worried and slightly helpless as we each faced our own obstacles. All we had then was each other, shreds of resolve, good Spotify playlists and Google sensei to consult. It will be tough, but teamwork always makes it easier and you will evolve in ways you did not imagine at the end of it all.

## OPTICAL SYSTEM

Measures and tracks eyelid movement of drivers in real-time

## BRINGING IT A STEP FURTHER

At SUTD, you have ample opportunities to turn your design ideas into reality. An example would be through **Design Odyssey**, established by the SUTD-MIT International Design Centre (IDC), in partnership with the JP Morgan Foundation. An integration of academia, industry and society, it aims to provide students a seamless transition to professional practice by developing a human-centric focus rooted in design, innovation and social awareness.

We joined Design Odyssey to get access to more funding to prototype Sentience, as well as advice from industry mentors. We first met our mentors, Jonathan and Aditya in a weekly mentorship session on 6 November 2017. In an hour's meeting, they helped us reorganised our pitch into a Design Thinking framework. We realised there were many missing steps, missing data, and unsupported assumptions that we have made. There was more work to be done in justifying Sentience then blind engineering.

The week of 6 November was crucial because we had signed ourselves up for three high-stakes pitches - Design Odyssey funding, Create4Good and STARTUP AUTOBAHN. In a short span of time, we made many adjustments to our slides and looked at the different ways we could pitch Sentience for different purposes. This iterative process helped us understand what Sentience could really be and how we want it to develop into.

Today, we have made many pitches in different contexts but the core and the fundamental flow of our pitch is always the same. Some time ago, we relooked our archived documents and saw the first pitch we ever made. It was radically different. Looking back at the iterations that were made in the week of 6 November as we figure out our project's identity, the story we tell for Sentience today was heavily influenced by the support Design Odyssey gave in our first meeting.

## VIBRATION + SOUND

Physical stimuli is applied as a last resort to wake sleepy users that cross the fatigue threshold

## COMPANION DEVICE / APP

Enables admins to view compiled statistics and perform macro fatigue management

## MILESTONES

2017

5 Nov

A memorable Sunday night where the three of us gathered to talk about our aspirations for Sentience

8 Nov

Pitching at Design Odyssey - awarded \$800 in funding

10 Nov

Create4Good semi-finals presentation - successfully entered Finals and awarded \$10,000 in funding

11 Nov

STARTUP AUTOBAHN, organised by Daimler AG - won the special prize and three tickets to exhibit our project at the Mobile World Congress in Barcelona

2018

28 Feb - 8 Mar

Had an unforgettable Barcelona trip with the Daimler crew

23 Mar

Design Odyssey - won Best User Research award

1 May

IdeaSinc 2018 - finalist

4 May

Create4Good Finals - won third prize and \$20,000 in funding

14 - 15 May

Exhibited at Tech In Asia Conference, Singapore

25 May

Won tickets to Runway to RISE at Hong Kong at a pitch competition



HISTORY
BENEATH
OUR FEET

Dr Sandeep Ray
Senior Lecturer
Humanities, Arts and Social Sciences
(HASS)

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.

Imagining the Japanese Occupation in the classroom
Early 1942 was a historically confounding time for Singapore. The Imperial Japanese Army had rapaciously made their way down Malaya, crossing the Johor Causeway within weeks.

Days later, a gaunt Arthur Percival, leader of the British forces, walked across the island in khaki shorts and surrendered the Union Jack to General Yamashita, much to the shock of Winston Churchill.

The British Empire had never fallen more spectacularly. Then, after a brief pause in the assaults, a systematic murder of local Chinese began.

Nothing washes away the memory of spilled blood, divided loyalties, and a lowered flag more effectively than a robust GDP and the promise of enduring peace. Singapore has risen.

Older citizens, nearing the end of their lives, walk around in a gleaming metropolis of steel and concrete with uncanny normalcy.

"My grandfather does not talk about it", says one of my students. "But I want to understand what happened."

Chronically underslept, the students - these overachievers in the sciences - have rarely missed a class.



We have now spent 14 weeks analysing that period of violent rupture in Southeast Asia, when Japan took over politically and militarily across Malaya, Burma, Indochina, the Philippines and Indonesia.

Airplanes frequently appear outside our classroom, low on the horizon, preparing for descent. We are close to Changi Airport and Changi beach.

One is a spectacular modern edifice, the other a former site of wartime mass killings.

Given that they are all training to become engineers or architects, this is an opportunity for them to be historians for a few months.

We don't memorise dates and proper nouns; students can check online sources any time, even during exams.

We look at films depicting that period—carefully curated newsreels, documentaries and fiction. We read and discuss diaries of survivors and aggressors. Weekly reviews of military history provide us with a useful scaffolding to discuss events as we grapple with the social consequences of war.

Many questions are debated: Was the Japanese invasion purely an act of aggression based on a top-down societal structure? Given knowledge of atrocities in Manchuria and Nanking, can one ethically justify the collaborations of Aung San, Sukarno, and Subhas Bose?

Who are the forgotten armies in post-war portrayals of the Japanese Occupation—have we glorified certain heroes and neglected others? Should surviving comfort women receive reparations?

Compared to my former students in the United States, this group takes the history of the Japanese Occupation more personally, perhaps because its legacy lingers at our doorsteps.

A visit to experience history
We made a trip to the former Ford Factory, now a repository for the history of the Japanese Occupation.

Led by veteran guide Jeremy Koh, my students quietly walked through the carefully curated exhibit, pencil in hand, fact-checking, comparing their notes.

Coming face-to-face with material objects was meaningful.

The evanescent feeling of history is hard to evoke in a classroom, the visceral realisation that events in the past actually happened right beneath our feet.

Careful not to oversentimentalise, the students are vigilant in considering how the past is presented in the present context.

Later, they reflect on various aspects of the exhibit. Most conclude that it is challenging to accurately represent the complexities of a war but that the very effort is a step in the right direction towards healing.

The students have since submitted their final papers. The topics were diverse and probing.

How does the Hollywood film The Bridge on the River Kwai compare to historical accounts of the construction of the death railway? What were the effects of the Japanese interregnum on nationalism in Southeast Asia? What was the role of 'fake news' during this time of war?

Chen You Liang, a sophomore, feeling constrained by books and films, has been interviewing survivors in Chinatown while playing chess with them.

One of his subjects, Lim Boon Seng, a roadside barber, begins his interview as follows: "The British started firing at the Japanese near my school and so we climbed up a tree..."

The 80 year-old's animated face fills the screen. The students watch the wrinkled man in the quiet peaceful lane, trying to imagine that moment from seventy five years ago.

Sometimes books aren't enough.



MEASURING THE UNMEASURABLE

Mardhiany Puteri Junadi
Junior
St Andrew's Junior College Alumnus

In January each year, students are free to pursue their personal interests. During this Independent Activity Period (IAP), some ASD students choose to use their skills to contribute to the world or to gain more exposure through overseas workshops such as this 10-day workshop held in Japan.

So what has data and technology got to do with architecture? Today, everything that we do inevitably contributes to data. No matter how significant or trivial the things we use and consume are, that data can provide a deeper understanding of ourselves. Architecture as a discipline has the responsibility of creating better environments for life. It thus makes sense for design decisions to make improvements in response to the needs, enabled by technology.



You might probably be thinking, how the hell are we supposed to tackle these big questions within 10 days? Well, the main takeaway from this workshop is just the first step in understanding human interactions with the environment – by collecting information about a place, then visualising it concisely into a map. Mapping itself can be a profound activity of representing something complex in a simple and indicative way.

Being an architecture student in SUTD equips us with the necessary digital tools to do that and, however small this may sound, exposes us to opportunities to be involved in such a collaborative project, as well as the chance of being able to interact with and observe Japanese architecture.



Our short school trip brought us to so many places! An observatory building whose backstory is "a spaceship that flew away", the interiors of restored machiya guesthouses and, of course, the art house projects on Inujima guided by the architect herself, Pritzker Laureate Kazuyo Sejima. It's inspirational to visit a country like Japan and experience their design and culture. There's so much to learn in this world and we should make the most of opportunities like these (which are aplenty within SUTD).



# SUTDents around the world

Every year, our SUTDents take off to a world of possibilities out there. Some travel to a foreign country for academic and cultural exchange, or intern at their dream company. Others 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.

📁 Internship   ✨ Summer Programme   🌿 Fall Exchange   👤 Other Adventures



## AUSTRALIA

📁 Excite Holidays



## CAMBODIA

📁 Golden West Humanitarian Foundation



## FINLAND

🌿 Aalto University



## FRANCE

📁 ExactCure



## GERMANY

🌿 TU Berlin  
👤 World University Beach Volleyball Championship



## BELGIUM

🌿 Université catholique de Louvain



## CANADA

🌿 University of Waterloo



## CHINA

🌿 Sino-Singapore Undergraduate Exchange  
🌿 Zhejiang University



## BRAZIL

📁 Embraer



## ITALY

🌿 European Innovation Academy  
👤 Palladio Studio  
👤 Venice Biennale 2018



## INDONESIA

📁 Medico



## JAPAN

📁 SANDWICH  
👤 The International Design Contest Robocon 2018  
🌿 Tokyo Institute of Technology



## NETHERLANDS

🌿 ✨ University of Twente



## SINGAPORE

📁 👤 Those who stayed in Singapore also kept busy, by interning in their dream companies or contributing to various events such as the PARK(ing) Day 2018, Singapore Night Festival and organising the CRUX Deep Water Solo Competiton.



## SOUTH KOREA

🌿 ✨ Hanyang University  
📁 Neofect  
🌿 Pohang University of Science and Technology  
🌿 Sungkyunkwan University  
🌿 Yonsei University



## UNITED STATES OF AMERICA

🌿 Leigh University  
🌿 Stanford University  
🌿 University of California, Irvine  
🌿 University of California, Berkeley



## PORTUGAL

👤 European Innovation Academy  
📁 Farfetch  
📁 Misk  
📁 Unbabel



## SRI LANKA

📁 Balmond Studio



## SWEDEN

🌿 KTH Royal Institute of Technology



## SWITZERLAND

👤 WAVE Trophy Switzerland 2018



## THAILAND

🌿 Mahidol University



## VIETNAM

📁 Keppel Land Vietnam  
📁 Koda Saigon Co., Ltd  
📁 Quodisys Co Ltd  
📁 Studio Bo Cong Anh  
📁 Transform Architecture  
📁 Wilmar International Limited

# GLOBAL LEADERSHIP PROGRAMME (GLP)

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

GLOBAL LEADERSHIP PROGRAMME AT  
UNIVERSITY OF CALIFORNIA, BERKELEY



## ADVENTURES IN THE GOLDEN STATE

**Brandon Joseph Lawrence**  
*Sophomore*  
*Anglo Chinese School (Independent)*  
*Alumnus*

Besides the opportunity to soak in the foreign academic culture at UC Berkeley, most of the great experiences that I encountered in GLP involved taking road trips to explore the great state of California. Before this, I had never truly experienced going on long road trips. On this trip, I learnt to appreciate renting a car, squeezing in it with other passengers, playing games during the drive to pass time and stumbling upon amazing places in the process of losing our way.

Among the numerous road trips that we took to the different parts of California, here are the ones that stood out the most to me:



I am very grateful to have been able to take a road trip to one of the world's most visually powerful landscapes, the Grand Canyon. It was an amazing experience to be able to see first-hand the plunging depths, temple-like buttes and vast, multihued topography of the Canyon.



Our road trip to Big Sur was a truly breath-taking experience as we got to witness the 90-mile stretch of rugged and awesomely beautiful coastline between Carmel to the north and San Simeon (Hearst Castle) to the south.



A fun-filled day at the Six Flags theme park in San Francisco.



After the road trip to the Death Valley National Park, I can now cross 'going to the hottest place on earth' off my bucket list. Though the heat was excruciating, the experience of being in a real desert is one that I will never forget.



# BRAINSTORMING, BUSINESS AND BALL-PITS IN BERLIN

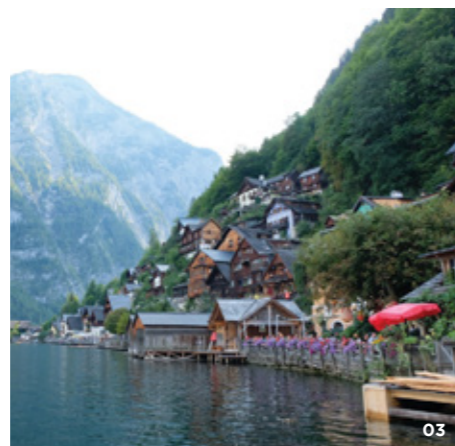
**Tanvi Ravindra Thombre**  
Sophomore  
National Junior College Alumnus

Through the TU Berlin VIEW Programme, eight of us took off for eight weeks to experience an international education beyond just technical knowledge, diving into innovation, entrepreneurship, human-centred design, business and leadership, all while soaking in the rich culture of Europe's "Cheap but Sexy" start-up capital, Berlin.

Over two months, we took three different courses:

## Innovation and Entrepreneurship: Developing the Idea

We rediscovered design thinking from a European perspective, and rethought the process of investigating opinions, defining pain points, and developing human solutions. With more emphasis on developing the idea than on delivering a tech-focused prototype, our international and multi-disciplinary teams were encouraged to approach familiar problems from new angles. We had a really great time stepping out of our comfort zones, from interviewing Germans out on the streets, to experimenting with new brainstorming techniques, and finally to pitching the group's idea to a real venture capitalist!



## Start-up Crash Course:

### Idea to Reality - Developing the Business

Offering a peek into how start-ups are formed in the real market, this course gave us free rein to add some business meat to our personal start-up ideas. We were first guided through a few sessions of multi-pronged soul-searching to find the overlap between passion, ability, and service. After finding a workable business idea, our eyes were opened to the multitude of complex business considerations that go into the realisation of any start-up. This course allowed us to develop our own individual ideas into business propositions which we then pitched to a panel of real angel investors and venture capitalists! Our greatest takeaway? The start-up founder's mantra: Team, Product, Market!



- 01 Walked into one of 48 co-working spaces (they have ball pits) in Europe's start-up capital
- 02 Took a 2am bus to Dresden, another exciting German city
- 03 Classic view at the classic village viewpoint in Hallstatt, Austria
- 04 On top of the world and above the clouds at Obertraun, Austria
- 05 Biked and had BBQ at a massive de-commissioned airport
- 06 Make friends from every continent on the globe
- 07 Post-it till you make it
- 08 Being a student is just our undercover job
- 09 Visiting Lucerne, Switzerland
- 10 & 11 Party in the third "most colourful" city in the world
- 12 Shop like crazy! Get 11% tax refund on your shopping.
- 13 Take your idea from imagination to market-ready, and pitch them!

## Leadership in the Entrepreneur's World: Developing Ourselves

"Why should anyone be led by me?" In search of the answer, we dug deep into each other's past experiences as leaders and followers, as we learnt about the four different types of intelligence as well as effective team building and decision making. Along the way, we spoke to entrepreneurs from the top 10 start-ups in Berlin, and even got to visit their offices! At the end of the two weeks, we each walked away with a personal leadership development plan that will see us through our future endeavours.

I loved the TU Berlin VIEW Programme. The eight weeks passed by in a flurry of school, new friends and new activities. We learnt about our international friends' countries and got different perspectives from them. Listening to guest speakers who were dedicated to their start-ups was very inspiring as it made us think about what we could do with our lives as well. It was a whole new world exploring Berlin after school, from abandoned airports to spy museums. Being in Europe, we had all the freedom to explore our neighbouring countries every weekend (from a miniature wonderland in Hamburg to towering mountains in Switzerland to concentration camps in Poland). We love you SUTD (and Ms Fideilis who came to visit us) and TU Berlin (and your very nice Summer University team)!

Special thanks to my teammates Safafisalam, Jeremia, Vieri, Xiang Qian, Jia Juen, Jeremy and Jinling who helped me with this article.



#### Running/exercise shoes

With a whole load of exercise and fitness facilities around (and mostly free for use!), you will be missing out if you don't try them out! Keep a pair of exercise shoes in your room so you'll be ever ready to work out and stay fit – it's a good way to bond with new friends too!

#### Pillow

Pillows (and bedsheets and blankets) are not provided so be sure to get one if you are a pillow user. They are readily available at the department stores and hypermarkets (e.g. Walmart, Target) just a 10-minute drive away.



#### Laptop

Having a laptop makes submitting work online or accessing the various digital platforms that Stanford uses easier. It's great for videocalling home too!



#### Reusable bag

In efforts to be greener, nearly all shops will charge you for a plastic bag should you request for one. Having a reusable bag will thus come in useful for any purchases.



## WHAT'S IN MY ROOM?

**Chiang Aiting Faye**

*Sophomore*

*Raffles Institution Alumnus*

While your room may not be where you're at most of the time, it's always nice to come back to a nice place after a long day of work and play. Here are some tips to maximise the comfort and coziness of your temporary abode for eight weeks in Stanford.



#### Fan

While the weather is great most of the time – not too hot and not too cold – there are occasional days where the sun shines a little too brightly. A fan comes in handy then to help you cool down!



#### Hot water bottle

A hot water bottle is good for when the nights get too chilly and you need something warm to hug. It can also double up as a pillow!



#### Kettle

In our hall, hot water was not readily available so this is perfect if you drink coffee, tea or just need something warm. It was really useful especially when we wanted to have cup noodles!



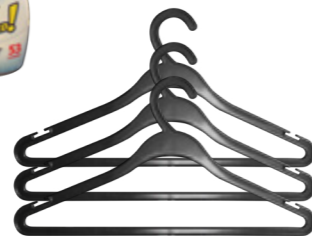
#### Snacks

Make sure you keep your snack stash stocked up! It's great to have something to munch on, especially late at night when you're too lazy to go out. Some may argue too that having cup noodles in particular is great for the times when you're missing Singapore food!



#### Detergent

Though washing machine and dryer facilities are provided at no extra cost, you need to get your own detergent so be sure to keep some in the room.



#### Hangers

Unfortunately not provided as well, it will be good to bring hangers if you're the kind of person that uses them!

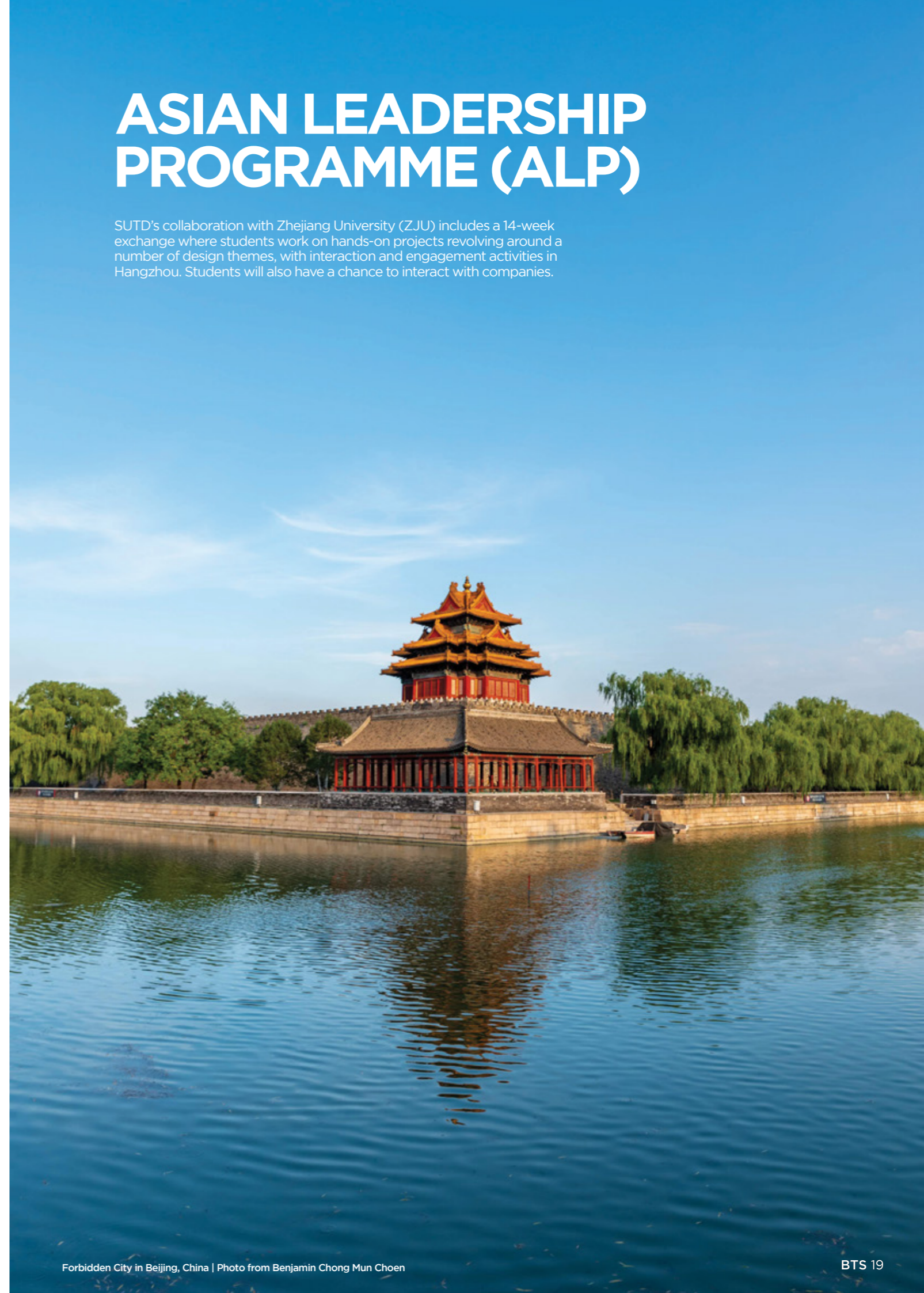
#### Plastic bag

Although we could borrow a lofting tool to lower our beds, they were mostly set pretty high up – it was troublesome at times to climb onto the bed only to realise you needed to come down again to put your phone aside. The solution: hang a little bag around one of the bedposts and drop your watch, spectacles etc. in for the night!



# ASIAN LEADERSHIP PROGRAMME (ALP)

SUTD's collaboration with Zhejiang University (ZJU) includes a 14-week 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.



# ALP THEMES AND PROJECTS

01

## AI EMPOWERED DESIGN

Machine learning is one of the most important and successful technologies in current artificial intelligence science. The “AI Empowered Design” team used AI to empower smart products and create new ways for people to interact with AI.



RapidML

05

## INTELLIGENT & INTERACTIVE SLEEP ASSIST LIGHT

Students explored the relationship between users and lighting, to create an intelligent and interactive lamp that aims to optimise the process of power napping through the use of smart technologies.



小睡宝

02

## SCREENS & BEYOND: USING MIXED REALITY TECHNOLOGY TO IMPROVE PARCEL SCANNING EFFICIENCY

In China, more than one hundred million parcels are processed every day. This project was to design a mixed reality wearable system capable of scanning the overwhelming number of parcels more efficiently.



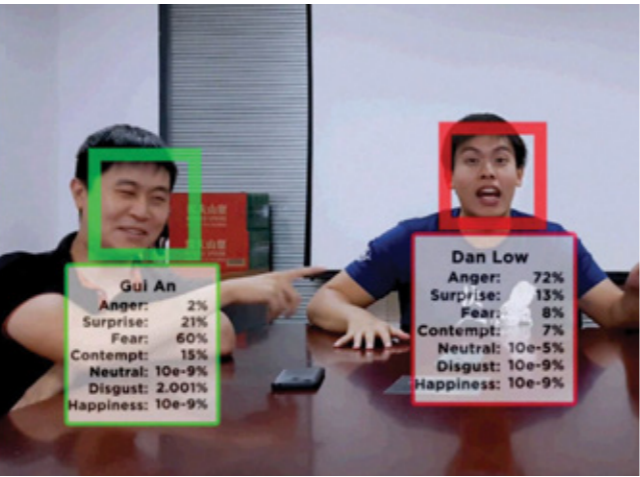
Partag

SmartInsure

06

## “WEREWOLF” AUGMENTED REALITY SYSTEM

Implementing computer vision, cloud computing and artificial intelligence on an augmented reality platform, students created a comprehensive, all-in-one system that can read player emotions and assist in game play for Werewolf, a highly popular game in China.



Werewolf AR System

03

## MUSIC EMOTION

This project aimed to create an environment that encourages deep experiential learning targeted at young children. Other than providing them with a better reading experience, it aids in developing better focus, visualisation and interpretation.



eMello

07

## VISUAL DESIGN OF A COMPREHENSIVE INTELLIGENT LARGE SCREEN

Students developed a data-driven interactive large screen for the Bank of Beijing which will 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.

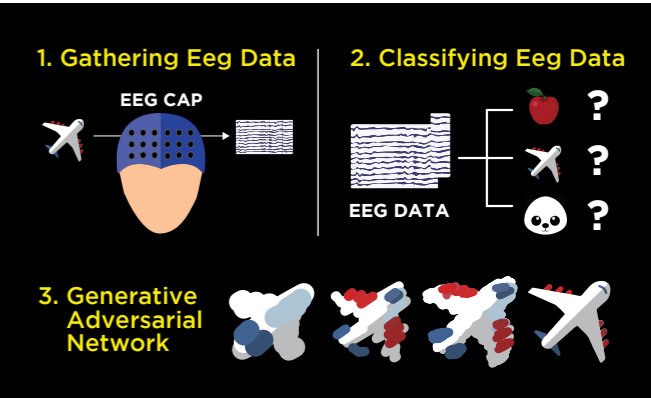


Bobvis

04

## DEEP LEARNING FOR DESIGN CONDITIONED BY BRAIN SIGNALS

This project aimed to make a significant difference in people's lives by capturing brain signals and processing them. The data recorded allows users to better understand their consumers, and design according to their preferences.



Brain Signals

08

## CHINESE ARCHITECTURAL ENVIRONMENT DESIGN STUDIO

Students designed an archaeological studio which functions as a rest point for visitors and a work studio for archaeologists in the Liangzhu National Heritage Park.



Information Box



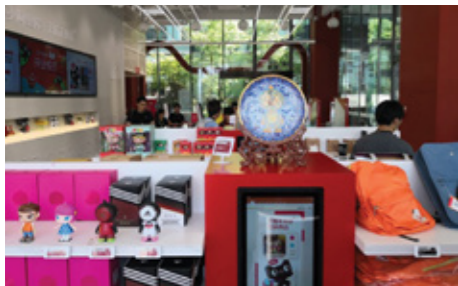
Mobile Workspace



Before we had weather reports, people had a slab of dali rock (大理石) in their homes. By feeling the moisture of the rock, they could tell whether rain was imminent in the coming hours.



Cycling is a way of life in Hangzhou; apart from being a form of exercise, it is also a convenient way to get around the city. Rental bicycles are readily available almost everywhere in the city.



"HAPPYGO!" – a smile detector that uses facial recognition technology to detect smiles; depending on how "good" a smile is, it then issues discounts.



Introducing "无人超市" – a concept store opened by Alibaba without cashiers or salespersons. Exit gantry cameras scan customers' faces and if they are holding any merchandise, money is automatically deducted from their Alipay accounts.



In Alibaba's More Mall, a giant screen displays information such as the number of visitors and cars for the day, vacant car park lots, the age groups and gender distribution of visitors, the heat signature of the floor, store rankings based on popularity, and the environmental conditions within the mall.



## SIGHTS AND TECH IN HANGZHOU

**Addison Chew Jun Wei**  
Sophomore  
Raffles Institution Alumnus

My ALP experience gave me an insight as to what living in a smart nation entailed and here are some of my interesting discoveries.



Why queue at the counter to place your order and make payment when you can do so at the comfort of your seat just by scanning the QR code with your phone using Alipay or WeChat?



Cai Niao – the logistics arm of Alibaba, uses algorithms to determine the most efficient conveyor belt path a box should take to collect its goods and the most optimum way of arranging the collected goods within the box.



Paper actuators take on different physical forms at different temperatures. Depicted in the photo is one of the completed works for our Design Thinking module, where the dog's ears and tongue would uncurl and become flat as temperature increases.



With toilet occupancy monitors like this installed, one can instantly tell if a toilet is fully occupied without entering the toilet.



## A TRANSFORMABLE SPACE FOR A HISTORICAL PLACE

**Benjamin Chong Mun Choen**  
Sophomore  
NUS High School Alumnus

Covering 908.89 hectares, our site, Liangzhu National Heritage Park, is located in Hangzhou, Zhejiang Province, China. It encloses ancient ruins belonging to the Neolithic Liangzhu Culture dating back 5,000 years, and contains numerous artefacts, from jade ware and pottery, to remnants of city walls and extensive water drainage systems.

Our brief was to design a mobile archaeological studio which was both a rest point for visitors and a workspace for archaeologists. The first main constraint was allowing visitors to observe archaeologists while they work, as a means of public education and interactivity. Secondly, as it had to be easily transportable via flatbed trucks, the studio could not occupy a space greater than 4x8x3.3m.



- 01 Our project team and teaching assistant at Longjin Village, during the first of the many field trips around Hangzhou
- 02 Working on our architectural scale model
- 03 Making friends at Changping Valley during our self-planned trip to Sichuan!
- 04 The final scale model of our transformable space



We began by researching case studies and existing solutions to understand what makes them feasible and using that information to build our concept. We settled on an expandable design which did not require disassembly, allowing for easy mobility. We then went through the tedious but necessary process of iteration, bouncing ideas around with our ZJU professor.

One challenge we faced was having to hand-cut almost our entire model, as the material we had to work with could not be laser-cut. While this proved laborious, it was a chance for us to think differently in terms of model fabrication.



Our final design tripled the original limited floor area and allowed for both visitors and archaeologists to have their own separate spaces within the building, while maximising the interactivity through a long glass screen.

In addition to the hours we spent designing in the studio, one of the perks of our project was the weekly field trips. We visited numerous places of interest around Hangzhou, such as Tangxi Ancient Town, Longjin Village, Xihu Lake, and the Chinese Academy of Arts. Through these visits, we had a greater appreciation of Chinese society and architecture.

At the end of the 14 weeks, it was bittersweet leaving Hangzhou. ALP was a great opportunity for us to see the world from a different perspective, enjoy local customs and take part in new experiences. It's one thing to read about another country from books or on the internet, but it's a whole different experience being part of it.



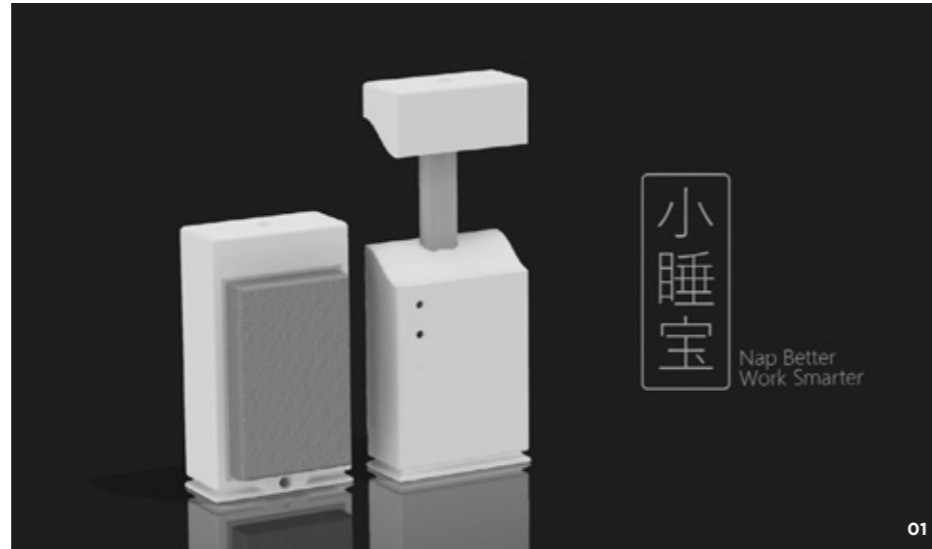
# WHAT THE WORLD NEEDS IS A LITTLE NAP

**Tan Mae-Sy**  
Sophomore  
St. Andrews' Junior College Alumnus

If there was anything that attracted me to this project, it is the word "Sleep" - not only do I indulge in it (almost like a passion), I also feel that sleep is something that our busy society sometimes underappreciates. As the project name suggests, our project requires us to design a lighting product or system that uses modern technology that allows users to enjoy better quality sleep.

To add to the excitement of this project, we also had a key stakeholder in this project, which is Klites, a LED company in China. This essentially means that we needed to design a product that not only functions but also is marketable. The need for the design to be marketable was the first obstacle that our group encountered during the ideation process as the market for sleep assistive lights is already highly saturated. Through weeks of ideation and looking at our project from different angles, we finally found an opening which is for us to target naps rather than long periods of sleep which many companies' products focused on.

With that out of the way, we also had to put our prototyping skills to the test - namely CADDING components and the exterior of our table lamp as well as coding for an eyelid tracking camera using OpenCV and Dlib. With our product heavily reliant on how well the software and hardware work together, my group found ourselves troubleshooting from start to end - even right before our product launch.



One week before we had our product launch, we also made a visit to Klites where we presented our product in Chinese!

Looking back at my entire ALP journey, I have learned so much more than I expected myself to - both hard skills and soft skills. This is one project that I really enjoyed working on. I am really lucky to have experienced something like that during ALP.

- 01 Rendered CAD of 小睡宝
- 02 Visiting Alibaba HQ for a workshop
- 03 Theme members, mentor and teacher assistant during a company visit
- 04 Prototype testing by representatives from Klites
- 05 Brainstorming session
- 06 Sketches of various designs during brainstorming phase



# FOR BOB THAT VIS

**Zhou Zhi**  
Sophomore  
Hwa Chong Institution Alumnus

We were tasked to develop a large screen display for the Bank of Beijing (BOB) at their newly established Nanjing headquarters. This is probably one of the toughest yet more rewarding challenges that I have faced. We can all plot graphs and charts, but data visualisation isn't as simple as that. It involved a whole new field of study into visual cognition, graphic design, data processing, and lots of coding. This field is also where cross-discipline learning comes in handy.

To be frank, it is a bombardment of knowledge. Within the span of three months or so, we learnt three coding languages of JavaScript, HTML and CSS, visualisation principles, banking industry jargon and more. And putting all these knowledge into the making of our screen from scratch leads to my best and toughest times. The endless debugging and revamping of design, though often frustrating and demoralising, sometimes brought the team new insights to the problem and alternative ways of coding and design.

Data visualisation is a tool that helps us see and understand the patterns and trends within big data. For BOB, we helped them in visualising their revenue and assets. For us, it is a visualisation of our ability and potential. A big thank you to SUTD for giving us such an experience. And that too, for BOB that we Vis-ed.



- 01 Large screen display for BOB
- 02 Our meeting with the representatives from BOB on the project brief
- 03 At BOB for our two-day meeting
- 04 (Not)Praying at where the emperors used to live



## A SUMMER IN TOKYO

**Leslie Tan Sheng**

Junior  
Temasek Polytechnic Alumnus

Each year, 50 students from differing backgrounds, specialisations, universities and nationalities are brought together under the team-oriented Cross Border Entrepreneur Cultivating (CBEC) Program to deliver innovative solutions on a common topic through in-depth user research and prototyping.

This summer, two SUTDents – Justinian and I spent eight weeks at Tokyo Institute of Technology under the CBEC Program, which utilises a Project-Based Learning (PBL) approach to inculcate Design Thinking, Entrepreneurship, and Business Administration fundamentals within students. We took two modules, Entrepreneurship Theory and Engineering Design Project A (EDP-A), where we had the opportunity to work with native Japanese students, as well as other international students from China, Germany, Thailand and UK.

The theme for this year's EDP-A module is *Designing an Innovative Meal Experience*. After rounds of research and interviews with local and foreign students, we found out that students in Japan prefer eating out rather than cooking their own meals at home. Besides convenience, this lifestyle choice is due to many other factors, one of which is that students find it difficult to multitask and prepare a nutritious meal given the limited kitchen space available in a typical Japanese apartment. Hence, my group came up with a simple prototype that can be attached to a frying pan, acting as a helping hand to assist the user in cooking multiple dishes simultaneously.

Unlike students in Singapore, whom tend to focus on the functionality and viability of prototypes, students in Japan are encouraged to let their creativity flow, often coming up with simple, out of the box solutions tackling a specific problem. All in all, it was an insightful and enriching experience working

with them, allowing me to better understand the Japanese design philosophy which emphasises simplicity and practicality!

### Meeting up with fellow SUTDents

On our second day there, Jason, who interned in a robotics start-up in Tokyo, invited us to the NHK Student Robocon competition, where Japanese universities battle it out in a traditional Vietnamese game of *Ném Cờn*. The objective of the game is to shoot three shuttlecocks through a hoop, landing in designated areas within the court. To make it more challenging, the teams had to design two autonomous robots, one acting as the “passer” to deliver the balls from the starting point to the other robot, the “thrower” which then attempts to score. It was a heated competition, and the University of Tokyo nailed the competition with perfect accuracy, completing the challenge in 15 seconds, a remarkable feat!

We also met up with Jun Wen, who interned in an architectural firm in Kyoto. He popped by Tokyo for a weekend, and we brought him around to try a Tokyo specialty cuisine – *Monjayaki* – a pancake-styled dish that bears resemblance to *Okonomiyaki*. It uses similar ingredients and is grilled over a hot plate, but the ingredients are chopped up and topped off with a broth made of flour and fish broth, giving it a runny texture and consistency. It is a unique dish that I would recommend everyone to try when you're in Tokyo!

- 01 Bringing Jun Wen around the campus of Tokyo Institute of Technology
- 02 We tried Monjayaki, a Tokyo speciality
- 03 Streets of Asakusa lined with decorations for Tanabata festival
- 04 Robots competing in a game of *Ném Cờn* at the NHK Student Robocon Competition



## HOW HALF A YEAR IN SWEDEN CHANGED ME

**Chua Yue Zhi, Russ**

Senior  
Temasek Junior College Alumnus

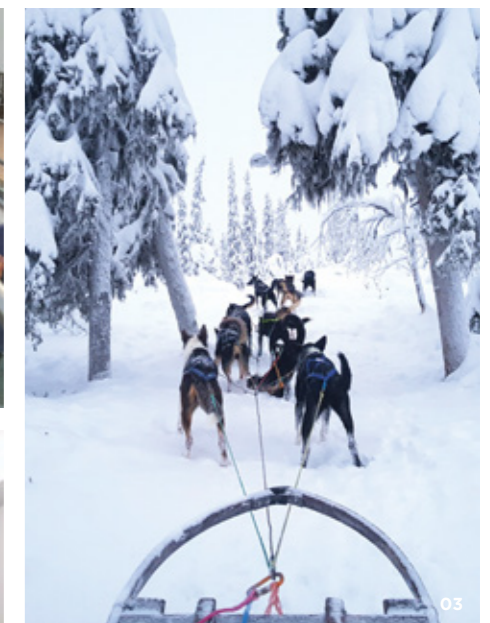
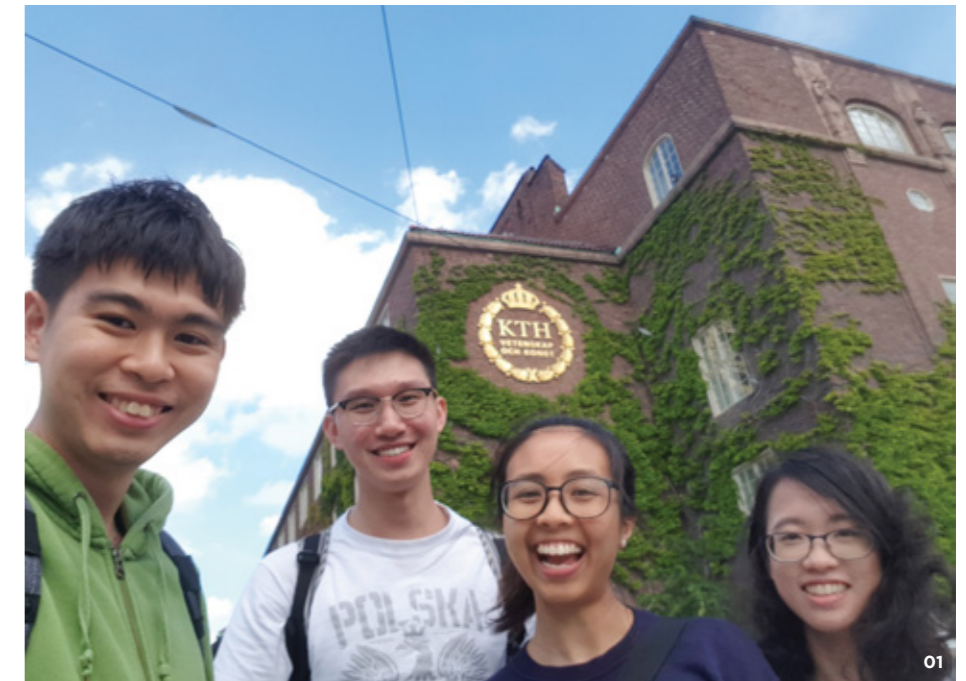
The Term 6 Global Exchange Programme (GEXP) offers opportunities for students to take courses in world-class foreign universities with deep expertise in various fields.

Tjena! There comes a time in every SUTD student's life where he or she dreams to experience the “outside world”. As a Healthcare Engineering Design track student in EPD, I had the interest to pursue dedicated biomedical courses. My chance finally came in Term 6 thanks to my participation in the Global Exchange Programme at the KTH Royal Institute of Technology in Stockholm, Sweden.

While exchanges are thought to show a slower pace of academic life abroad, mine was anything but “comfortably paced”. As classes began in KTH, expectations were laid down immediately. Within the first week, I was already informed to:

1. Produce a working pulse sensor prototype that communicates to a phone within two weeks for the Medical Informatics course.
2. Form pairs and ideate seminar topics for the Implants and Biomaterials course to study and present on an actual implant that is used in industry.
3. Study for an exam within the third week, covering over 140 pages of textbook content for my Medical Engineering course.

Besides gaining opportunities to take a wider spectrum of academic courses, I enjoyed the experience of living alone whilst abroad. Soon, I found myself managing many things that



I took for granted such as cooking, cleaning and grocery shopping all whilst studying for multiple master's degree biomedical courses. Over the course of the schooling term, I also co-organised weekly collaborative cooking and eating sessions with my many new friends from different countries. Witnessing their initial taste of durian snowskin mooncakes was quite the experience!

Last but certainly not least, I took full advantage of term breaks to travel around Europe. With considerably cheaper airfares, my friends and I travelled to popular tourist attractions and savoured a variety of different cuisines. My exchange journey truly was a life-changing experience!

- 01 Arrival at the KTH main campus
- 02 Mingling party with other students
- 03 Dog sledding
- 04 Collaborative cooking and eating sessions
- 05 Ice hotel in Kiruna



Learning to make kimchi for a nursing home.



Did my part to help Mother Earth by cleaning up the Pohang waterway canal and Yangdeok Soccer Stadium.



A day of volunteering at Pohang Protection Animal Yeongil Shelter. I fed them, cleaned their cages and made sure I petted each and every one of them.



Our first ever earthquake experience featuring a cracked wall.



# A TRULY KOREAN EXPERIENCE

**Nicole Chian Min Yu**  
*Senior*  
*Serangoon Junior College Alumnus*

My exchange journey wasn't a typical one as not only did I get to experience exchange life but was given the opportunity to give back to the community that was my home for the past four months. It was nothing short of amazing, and I know that I still have so much more to give and experience. Looking forward to my next adventure!



The annual POKA war that ended with POSTECH's victory



Volunteered at Pohang Nambu Police Station which involved us patrolling the streets with policemen to ensure the safety of residents.



# THE SPIRIT OF SILICON VALLEY AT EIA

**Liew Cher Don**  
*Sophomore*  
*Tampines Junior College Alumnus*

Building a start-up in just 15 days, EIA brings the spirit of Silicon Valley to you through speakers and mentors from the world's top institutions such as Google and UC Berkeley. Together with 500 participants from 75 countries, learn how to be a global entrepreneur here.

Olá, Bom Dia! Join me on my adventure at the European Innovation Academy (EIA), located in Cascais, Portugal. Having previously participated in more than ten hackathons in Singapore, I thought that EIA would not have much to offer. That was my first mistake.

Having lived in Portugal for the past four months for my internship, I realised that the transport system here needed much improvement, as the buses and trains were never on time. Hence, I joined a team aiming to solve that problem. Everything was going smoothly until we found a competitor that was already on the market, solving the problem with the exact same features we ideated. This is terrible seeing how we were already three days into the programme.

The morale of the team was low. But with a little teamwork and brainstorming, we decided to create a chatbot that could solve all legal issues. Our product, Paralegal Bot, would be an AI chatbot that would answer all your legal questions and schedule lawyers for you.

Being the only technologist in the team, this was a huge challenge for me, to build an AI chatbot in two weeks. I had to also read legal documents to craft a privacy policy for the start-up, since we did not have a lawyer on our team.



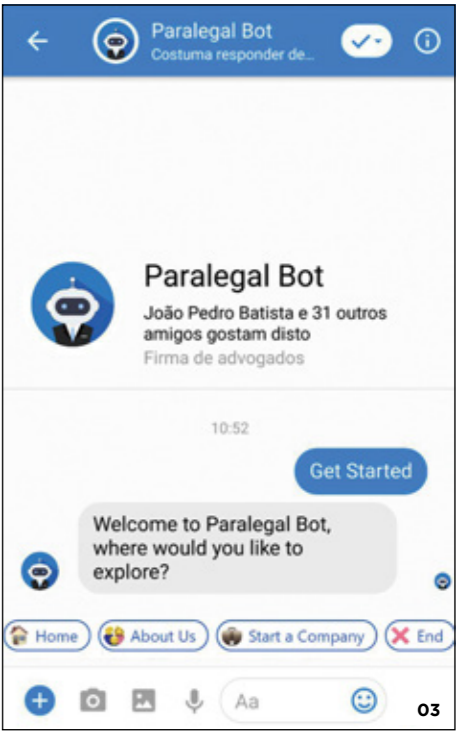
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In the end, we managed to emerge as the Top Team, and we are currently talking to investors in Portugal. This experience further piqued my interest in technology, inspiring me to start my first tech blog.



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- 01 Celebrating the end of showcase day on Day 10!
- 02 EIA team photo, together with our Chief Mentor, Dennis
- 03 Final prototype from EIA, Paralegal Bot
- 04 SUTD students at EIA, enjoying ourselves at the beach on a weekend



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## ROBOTICS FEVER IN JAPAN

**Loy Yong Yi Wendy**

*Sophomore*

*River Valley High School Alumnus*

The IDC Robocon is a global robotics competition held annually. Students from top universities all over the world gather to share ideas and knowledge on robotics and develop a winning robot design within two weeks.

The IDC Robocon 2018 was held at Tokyo Institute of Technology in Japan. This year's theme was "The World Star Hunting Swallow" and we had to build two robots – a land robot and a sea robot. The land robot needed to transfer balls from one point to another horizontally while the sky robot needed to reach a lift within 45 seconds before releasing the balls down a slope into the collection point.

None of my team members have any robotics experience so we could only rely on our engineering knowledge to build the robots. Machine design was challenging for me as there were many restrictions in terms of size, materials etc. My team's land robot was



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- 01 A scene during the finals
- 02 My team's sky robot in action
- 03 Our team working on our robots
- 04 SUTD representatives during the welcome party
- 05 The beautiful skyline of Akihabara at night
- 06 Dinner in a traditional Japanese restaurant with our friends

inspired by a claw machine. It could catch a few balls at a time before releasing them into the collection zone. Our sky robot had tunnels to safely transport the balls from a higher to lower point as required.

After two weeks of designing and building robots, the day of the competition finally arrived. Interestingly, the lift to the sky area was broken. The rule was then amended and all sky robots could start at the sky area instead. My team was very happy upon hearing the news as we were not confident that our sky robot was able to reach the lift within the given time. Although my team was eliminated in the preliminary round, we were glad to achieve the goal we had set for ourselves - not scoring zero points.

Of course, my trip to Japan would not have been complete without the cultural immersion. My team and I visited the convenience store almost every day for lunch (since my Mexican teammate loves *conbini* food). At night, the Japanese also brought us around to places like Akihabara and Shibuya, where we indulged in good food and fireworks displays.



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Our ride for the week, the beautiful Tesla Model S. Efficiency, power and beauty. All dressed up and ready to go.



It's not all cars - fun entries like this solar powered bicycle made an appearance too!



Huge line-up of cars at a local town. Pleasure talking to other owners and engineers about why they love their cars.



My teammate Richard's lovely family, who joined us for the Formula E in Zurich!



Taking a ride in the Swiss-made Kyburz e-rod, an all-electric racer for the road. Who says electric cars can't be fun?



Flying the SUTD flag halfway across the world. Go SUTD EV!



## WAVING THROUGH THE FUTURE OF MOBILITY

**Wong Zheng Xun Charles**

*Senior*

*NUS High School Alumnus*

WAVE Trophy is the world's largest electric vehicle rally. Electric car enthusiasts, companies and universities gather to drive eight days across some of the Alps' most spectacular scenery.

My travels took me to Bonn, Germany for the Hack4Climate 2017, a block chain/climate change hackathon held in conjunction with the UN Climate Change conference. It was there where I met Richard Ulrich, a Swiss software developer and block chain enthusiast. We presented our project at the hackathon finals to an audience of delegates and attendees from around the globe.

We have been in touch after the hackathon and earlier this year, Richard invited me to join the WAVE Trophy Switzerland, an incredible journey across the Swiss country about experiencing, learning and advocating for the future of electric mobility. From local start-ups building sustainable energy solutions, to large businesses fabricating tiny



The Tesla having a electron drink at the supercharging station. Slurp.



Some local kids having a ride in the Tesla. Cue the rap music and questions about electric power.



Richard and me! Snow blindness is a real threat on the slopes of Rhone Glacier.

motors for the Mars Rover - Switzerland was a hotbed of cutting-edge mobility technology.

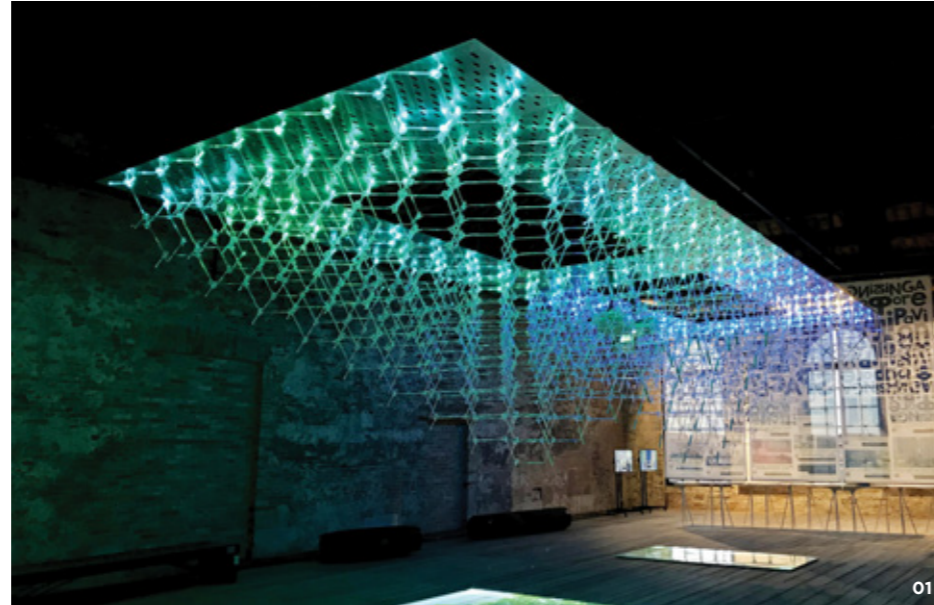
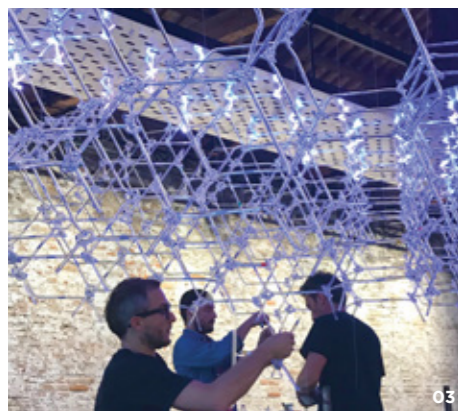
My strong foundation as a software engineer in ISTD and heavy involvement in automotive engineering as a team manager in the SUTD EV Club allowed me a much deeper insight into the future of electric vehicles. As a hyper-developed economy, Singapore can do more to further the adoption of electric vehicles, a move that suits our image of a clean, futuristic society. It's up to change makers like us to build a sustainable future for the generations of humanity who will come after.



# VENICE BIENNALE

**Inez Ow**  
Class of 2017  
Hwa Chong Institution Alumnus

SUTD is honoured to lead the curation of the Singapore Pavilion at the 16th International Architecture Exhibition, La Biennale di Venezia. Titled "No More Free Space?", the Singapore Pavilion tells the story of how, despite the lack of free space, Singapore-based architects, urban planners and place-makers have creatively found ways to bring delightful free spaces to the city's everyday life.



The Venice Architecture Biennale (pronounced as be-en-nah-leh, in case you were wondering!) is easily the most well-recognised mega architectural exhibition in the world. Held once every two years, it serves as a platform for countries from all over the world to showcase works related to issues of our times.

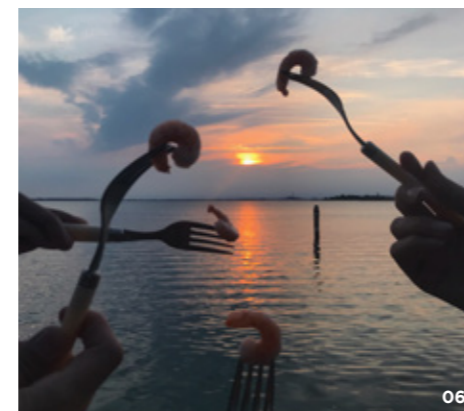
Upon graduation, I interned for TakahashiLim A+D, a design practice led by two of our ASD adjunct professors, Asami Takahashi and Jason Lim. During my time there, I had the rare opportunity to be part of the design team for our Singapore Pavilion at the Venice Biennale, titled No More Free Space.

Our goal was to design rope-like knots using acrylic rods, and it took us three months of rigorous experimentation to achieve this. It was a challenging but fulfilling feat, considering the rigid nature of the material. We conducted multiple fabrication workshops with SUTD students, NUS students, and construction workers, during which we successfully handcrafted a total of 1600 acrylic knot modules.

Finally, I got the chance to spend a month in Venice, working together with the curators, programmers, Italian architects and builders, to assemble these modules to form the centrepiece of our national pavilion. Perhaps my biggest takeaway from this experience would be having the opportunity to witness and better understand the processes that go into the making of such large-scale events, from project management to budgeting and logistics — areas we do not typically engage with in architecture

school. Looking back on this journey, it was really quite a crazy experience living together with SUTD and NUS professors, students and architects, in our Lido home. I learnt a lot from them sharing their personal experiences over meals, while cooking, doing laundry, washing dishes, watching Netflix etc. I'm not quite sure I can imagine the next time I'll end up in a similar situation where a professor will be asking me, "Do you think we should take the chicken out of the oven?"

- 01 Light and projection tests the evening before opening day
- 02 Evening mood along one of the many canals in Venice
- 03 Davidi, Corrado and Enrico from SetBuilt assembling our modules
- 04 Al fresco breakfast in the backyard of our Lido home with Sarah, Sam and Tomo
- 05 The day we completed the first half of our pavilion, with Melvin from TinkerTanker coding in the background
- 06 Prawns by the ocean



# THE PALLADIO STUDIO

**Rebekah Low Hui Yin**  
Senior  
Meridian Junior College Alumnus

The Palladio Studio is a Term 8 sustainable design option studio led by Rene Tan, co-founder of RT+Q Architects. The studio aims to study the relevance of Palladian architecture in our modern context and apply the values of scale, proportion and hierarchy to meet the needs and challenges of architecture.

As I look through the photos from the recent studio trip to Italy, it brings back great moments of being in the city of Venice - learning about the great Renaissance architect Andrea Palladio (1508 - 1580), experiencing his architecture, and being inspired by the different places I have visited. The Palladio studio is one of the most interesting option studios I have taken. To be studying Palladian architecture taught by a classically trained architect, one can only wonder, how will it be relevant to architecture today?

That question never left the back of my mind even as I boarded my 15-hour flight and began my journey in Venice, our first stop in Italy. As



cliché as it sounds, I fell in love with Venice the moment I arrived. Quaint cafes by the seaside, houses of reds, yellows and pinks against clear blue skies and the occasional gondolas passing by on the still water. It was beautiful as people would have you believe. Palladio's churches in the Venetian skyline is an image that will always remind me of how architecture can be majestic yet simple and unadulterated. Palladio's Il Redentore and San Giorgio Maggiore were my highlights in Venice. Its complexity in negotiating scale and proportions, drawing influence from both Roman and Greek architecture, yet preserving Palladio's likes for minimalism in his designs were more than enough for me to see how he was such an influential architect in his time. He was able to take references from influences before him, create a style that was representative of him, yet at the same time foresee a movement that preceded him. It was truly an amazing experience being in his architectural creations, learning so much from a man

who was from the 15th century and seeing the relevance of his values in my studies.

Another memorable moment was when we visited the Basilica Palladiana in Vicenza. We were so fortunate to be able to enter and enjoy a display of David Chipperfield's works exhibited in the Basilica itself. Seeing works and the thought process of one great architect while in the presence of another's was a truly defining and inspirational moment for me. As I continued to explore and visit the works of other great architects, Carla Scarpa, Tadao Ando, and Rem Koolhaas, I grew a little more and more passionate about my field of study and about Italy itself. I mean, gelato, pasta and pizzas? Who can resist that Italian charm!

- 01 Duomo di Milano
- 02 Palladio's Villa Malcontenta
- 03 Brion Tomb by Carlo Scarpa
- 04 Details in the Brion Tomb
- 05 Palladio's San Giorgio Maggiore
- 06 My travel and studio mates!
- 07 Venice at dusk from the Rialto Bridge





# INTERNSHIPS

Every SUTD student does at least one 16-week internship. With over 800 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.



## IT'S OK TO BE SCARED

**See Wan Yi Faith**  
Sophomore  
Anglo-Chinese Junior College Alumnus

There are few things as challenging as interning in one of the world's fastest-growing companies. 11,775km from home, I learned far more than technical skills - I grew as a human being too. From working on innovative, game-changing products to picking up a new language (Portuguese), from surfing and bouldering to making friendships for life, it was an experience I will not soon forget.

Unbabel empowers its customers to understand and be understood by theirs, providing a "Translation as a Service" solution for removing language barriers in customer communications over email, chat and FAQs. I worked with the Labs Product Team, to enhance existing products and develop the game-changing products of tomorrow.

Unbabel was more than just a company to work for. It's a family of passionate, fun-loving and incredibly professional individuals who look out for one another. And they took me in as one of their own. I certainly did not feel like "just an intern" and it was incredible to work amongst friends on exciting projects. Everything was new, and everything was difficult, but I realised it was OK to be scared because it's the only way to learn and grow.



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- 01 At Unbabel's annual event
- 02 Lisbon Machine Learning demo day
- 03 Unbabel's weekly surf lesson
- 04 We brought our clients to surf with us
- 05 A group photo after a boat cruise with my colleagues and clients

Unbabel challenges the status quo of the translation industry and is on its way to global greatness. I challenged the status quo of myself and realised I am capable of so much more. What will you do to challenge yourself today?



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## INTERNSHIP AT GRAB

**Tan Yu Hui**  
Senior  
Victoria Junior College Alumnus



Being able to work with interns from different universities and different backgrounds broadened my horizons when it comes to the working world

Over the course of 16 weeks of my summer holidays, I was able to intern at Grab as a Cybersecurity intern in the InfoSec team. Due to the recent Uber acquisition as well as the introduction of many different new verticals in the market, I was interested to see what the company was doing in terms of dealing with security issues. I was able to work on a small project that aims to detect fraudulent behaviour through the examination of transaction parameters. At the end of the internship, I was also able to work on a research paper that will be used as foundation for building certain security frameworks in the future.

Overall, everyone at Grab was really helpful and friendly. YPIMP, which stands for "Your Problem Is My Problem", is one of Grab's core values. Colleagues will try their best to help you even if it means going out of their way. When I needed to speak to a few colleagues from other departments, my mentor was able to quickly set me up with many of them within a short period of time. This YPIMP spirit is what I believe spurs everyone to work hard towards a common goal in Grab.



In BP supply and trading, everything we do is based on data. As a Core Data Strategist, it's my job to provide direct technology support to analysts, combining my deep programming know-how with practical experience of analytics. It is that mix of technology, data and trading that makes every day so exciting.

**Yoann Brenet, BP Core Data Strategist**

## CREATING A CORE DATA STRATEGY AT BP

**Ryann Sim Wei Jian**  
Junior  
Sunway College KL Alumnus



At BP, I worked in the Core Data Strategy team, who are dedicated to improving the way the company looks at its massive amounts of data. Many oil majors tend to rely on outdated methods and software to keep track of their data, but this department aims to streamline all the data pipelines, while also improving on the efficiency of the company as a whole.

The first project I worked on was a dashboard that allows traders to automatically view and access historical price charts. After completing that, I created a framework that provided analysts and traders with a set of logical checks that could be used to validate data. Both the price dashboard and checking framework were built in Python using Jupyter Notebook.

Because these projects were so open ended, I used design thinking to generate insights from interviews with analysts and traders, which



One of many learning opportunities – a tour of crude oil tanker *British Serenity*

helped me create a prototype that satisfied all parties. The courses I took in ESD helped a lot, as a lot of what I worked on required statistical analysis and data wrangling.

Overall, the people were really friendly and there were a lot of learning opportunities provided to the interns. It was a great experience and I am grateful to BP and the colleagues I met along the way who guided me throughout this journey in the oil and gas industry.

BP's global energy trading business – commonly known as supply and trading – connects BP to the world's traded markets for oil, gas, power, refinery feedstocks and currencies.

## MOH HOLDINGS



## A FIRST LOOK INTO HEALTHCARE ARCHITECTURE

**Soh Jun Xian**  
Junior  
Serangoon Junior College Alumnus

I interned at MOH Holdings and was attached to the Healthcare Infrastructure Projects Division (HIPD). The division supports the development and building of public healthcare infrastructure projects for future demands.

Within the division, I was assigned to the Architecture, Interior & Medical Planning (AIM) team that develops design guidelines and references to support the review, evaluation and execution of Singapore's cost-effective public healthcare facilities, resulting in the delivery of quality and safe healthcare services.

I was drawn to the impact architecture has on the well-being of patients and the organisation provides me a good platform to do so.

At MOH Holdings, the AIM team does extensive research on the latest healthcare architecture-related topics and trends. I was involved in the study of various materials and creation of drawings for the team.



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Healthcare architecture is a complex and specialised study. Other than air circulation and workflow, the infrastructure design should also take into consideration the spatial requirements and special conditions for medical equipment and wards. I am lacking in this knowledge but I was able to assist the team after extensive research and studying the guidelines. However, the healthcare infrastructure scene is always changing to meet the different demands and learning never stops.

My colleagues at MOH Holdings were very friendly and willing to show me the ropes. My team also emphasised a lot on teamwork, having an open mind and active listening.

Although I was not directly involved in the designing of healthcare infrastructure, I was able to witness the process and work done from the perspective of the developer. I believe that this internship experience will help me become a more sensitive architect.



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01 A welcome luncheon with the AIM team  
02 A presentation on my internship experience and projects  
03 A farewell luncheon; last lunch during my internship

# dyson



## DESIGNING WHAT COMES NEXT

**Tan Qing Feng Chester**  
Junior  
Anglo-Chinese Junior College Alumnus

In Dyson, I spent the 16 weeks in the Mechanical Design team where I focused on designing for mass manufacturing. I was incredibly privileged to work on three different major projects that were in different stages of development. It is apparent how rapid prototyping and testing are vital in design, and being in SUTD has allowed me to operate and use machines with little previous experience. Having a wide exposure to various fields also opened opportunities for me to apply my non-mechanical engineering knowledge and expertise to influence mechanical design in real-world products.

Dyson also allowed me to truly experience what it is like to work globally. I was able to work with our teams based in Malaysia which involved travelling to the site, and with the UK teams over Skype meetings. I even had a one-week business trip with a design manager and some senior design engineers from the UK to prototype new products.

Designing a product for the market is a relentless process. We have to think about manufacturing considerations, profit margins,



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product claims, compliance, robustness tests - these are but a small palette that I have sampled during my internship in Dyson. It is safe to say that my summer internship has been a real eye-opener to the process after initial designs are created.

- 01 Group photo with fellow SUTD interns
- 02 Induction lecture
- 03 All interns coming together to celebrate our last day of internship on 31 August

# SEEK Sophie



## TAKING THE PATH LESS TRAVELLED

**Sean Ng Wei Liang**  
Sophomore  
Victoria Junior College Alumnus

What does travel have to do with engineering? I would say that it's the same spirit of adventure and courage to go out of one's comfort zone, that makes both the Traveller and the Engineer powerful world-changers. For both of them, taking the path less travelled is the best way to grow and make a difference in the world.

Seek Sophie is a platform created for travellers to easily compare and book off-the-beaten-path experiences from local guides. I performed Web Analytics using tools such as Google Analytics and Hotjar. I also did User Experience (UX) design. The data-driven process began with defining metrics to distil insights about users' behaviour. Then we would form hypotheses and refine them through user interviews, to optimise the website's information architecture and webpage designs. My toughest challenge was iterating through the design phase as it often felt disorganised. But through that process I've become a more disciplined and open-minded thinker, and a more patient and empathetic designer. The co-founders, Jacinta and Lina, always encouraged me to try new solutions. They even sent Sarah, a fellow SUTD



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intern and I on a jungle experience in Ketambe, Indonesia to teach us about going out of our comfort zones! But most importantly, they've taught me that technical skills alone will not make the world a better place - it's the heart to improve lives using our passions that will.

- 01 Off to the deep jungle - for the first time!
- 02 Trees in Ketambe are so tall! Like this 400 year old tree!
- 03 Sarah spots monkeys while cooking in the jungle
- 04 Just another day in the office for Sarah, Jacinta and Sean!
- 05 Thank you Lina and Jacinta for being such awesome mentors!



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