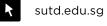
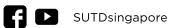


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Check out more exciting stories on #WeAreSUTD blog at wearesutd.sutd.edu.sg



Lessons with our Profs

Expectation: Lectures delivered à la junior college.

Assignments and Workload

Expectation: A heavy workload. A stream of examinations, tests and projects.

Fifth Row

Expectation: Fifth Rows were simply CCAs with a fancy name.

Hostel Life

Expectation: An alien environment where I'd not fit in and feel alone.

Overseas Experiences

Expectation: Exchanges are popularised to be mediums for stripping away the stress from university and enjoying in a completely different country.

Internships

Expectation: A daunting process of grilling interviews with the unrewarding experience of being a lowly intern.

LIFE AT SUTD:

EXPECTATION

Isaac Ashwin Ravindran Raffles Institution alumnus

Reality: I was pleasantly surprised on my first day as a Freshmore. There were three professors in class — while one delivered the content, the others clarified doubts immediately. This made it incredibly easy to understand the coursework.

Lessons were not simply dictated, they also involved extensive handson activities to get a better grasp of concepts — be it piecing together amino acids to form protein chains or creating catapults to learn about projectile motion.



Reality: While the workload was certainly challenging, we were always given enough time to maintain a healthy work-life balance. Project work was incredibly rewarding as we got to apply theoretical concepts in creating tangible and usable products. The Capstone project through Terms 7 and 8 was an

incredible learning journey as we

students from various pillars.

worked with industry partners and

For my project, I built a robot that aids doctors in performing needle biopsies by automatically positioning the needle in the right orientation - which saves the doctor a ton of effort while drastically reducing pain experienced by a patient.



REALITY Reality: There was much more to Fifth Rows. There was something for everyone. It even included independent research projects under the <u>Undergraduate Research</u> Opportunities Programme (UROP

Here, I was part of a project that built

a platform to combat the spread of

fake news on the Internet.

I joined the Squash Club (SUTD Squishies) with like-minded peers where we would engage in social activities like going for late night suppers at Simpang Bedok, further strengthening our bond.



Reality: Having a roommate turned out to be a great experience. Having someone to talk about the happenings of the day with was a stress-buster. I also spent a lot of time with my classmates and OG mates in the recreation rooms, studying and chatting through the night.

Living a stone's throw away from our classrooms and lecture theatres, we didn't need to wake up in a rush or worry about the commute.

The House Guardians would organise activities as well — haunted houses for Halloween and dinner and dances for Valentine's Day. It's true... SUTD does stand for Stay Up Till Dawn!

Reality: While I did not go on an exchange, a friend of mine did. He went to Berkeley, San Francisco and here's what I learnt from him. You get to experience a whole new culture - people, languages and their norms. It can be a life-changing experience that teaches you the importance of responsibility and how to adapt to different surroundings.



You also gain a global perspective while expanding your social network. While there were classes, he got to spend time exploring the country. And having the ability to transfer credits of some classes from Berkeley to SUTD allowed him to take other modules in their place and expand his understanding of his industry of interest.

Reality: To my relief, SUTD helped us greatly in our job hunt. Initiatives like the Career Fair and the Symplicity job portal made interfacing with companies a breeze. The <u>Undergraduate Practice</u> Opportunities Programme (UPOP) classes during our Freshmore year prepared me for interviews and gave me great tips on preparing a

I interned at Apple Singapore and the experience was unexpected. I was given the opportunity to build a product from scratch to improve office productivity which I presented to Apple's senior executives. My internship helped me deepen my technical expertise and I learnt to work with a team and picked up lessons on effective corporate communication.

GET WITH THE



Safafisalam Bohari Jaon Raffles Institution alumnus

GET JAMMIN'

As SUTD's largest Performing Arts Fifth Row, <u>SUTD Bands</u> brings music to the masses with internal and external concerts, as well as acoustic performances. We are the go-to Fifth Row for performance-related needs, offering sound and light support, and even equipment loans. We are a community of music-lovers, performers and crew members, and we make sure that school life is never quiet! Just this June, we organised the inaugural Intervarsity Jam 2019: Parallels, drawing a 400-strong audience across different universities.

SUTD Bands is all about building stages for performers to share their art, blending in SUTD's Do-It-Yourself culture and intimate quirkiness. There is nothing quite like being part of the Bands family!





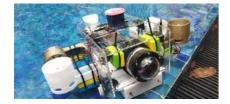
Sim Hong Kai Amos NUS High School alumnus

TOMORROW'S BOTS, TODAY

SOAR is a robotics club that's dedicated to exploring Autonomous Robotics. At every club session, we work on projects and share our discoveries with one another. Our ultimate goal is to construct a legacy robot with ever-expanding capabilities to be deployed for the annual SUTD Open House!

Singapore Autonomous Underwater Vehicle Challenge (SAUVC)

Team Bubbles, our team of first year students from SOAR, participated in SAUVC 2019 held in March this year. A young inexperienced team came back from many setbacks to pass qualifiers and finish in the top 15 in a pool of 40 crafts!



IT'S A FACT

Fifth row: CCAs



Wed & Fri afternoons dedicated time to pursue your passions



Wong Ye Qi Daryll Anderson Junior College alumnus

TAKE A HIKE

I joined **SUTD Mountaineering Club**

because I love breath-taking views of nature. I enjoy being in the outdoors and having to work hard for the scenic views at the summit with like-minded mountaineers. SUTD Mountaineering Club has an inclusive community of mountaineers that espouses the #SayReal Mountaineering Spirit to take on any challenge.



One of the highlights was the Kazakhstan trip (climbing Ong Teng Cheong & Ong Siew May Peaks) that was co-organised with NUS Mountaineering. We experienced the rich culture of the Almaty city and spent a week completely off-grid in Siemienova Glacier. We camped in the snow terrain, cooked outdoors, sipped water straight from icy streams (sometimes even boiling snow for water), and enjoyed starry skies! No regrets!

The ice climbing trip in Sichuan, China in the Siguniang range was also another once-in-a-lifetime experience where we climbed a different frozen waterfall every day. How cool is that!

If all these sound exciting to you, step out of your comfort zone and climb your first mountain with us! Everyone's welcome to join our expeditions that we organise during semester breaks.



Kuah Wee Ping Meridian Junior College alumnus

GIVING HANDS

Rotaract@SUTD is a community service club which focuses on service to the community and cross-faculty collaboration. We promote the community service scene in SUTD by working closely with the various

school committees and sourcing for volunteering opportunities.

Working together with our sponsoring rotary club, Rotary Club of Pandan Valley, we use our passion, talent and skills in technology and design to serve and make a difference to the community. Our Rotaractors are involved in community service projects, locally and abroad.

Vietnam & Laos OCIP

Every year, two groups of SUTD Rotaractors will embark on a 2-week journey to Laos and Vietnam. We really want to inspire children to innovate and expose them to technology. Also, we work to improve the living conditions of the locals by providing solutions designed by our Rotaractors.





Alexander James Fonseca National Junior College alumnus

BRING IT ON

Vertex Cheerleading is SUTD's very own cheerleading team that blends a potent mix of gymnastics, stunts and dance into lightning fast routines. We have put on mind-blowing performances for the school and beyond.

As a sports team, Vertex represents SUTD on the national stage too! We recently participated in the Cheerleading Association (Singapore) National Cheerleading Championships (CASNCC) and snagged 1st runner-up in the Team Cheer Open Level 5 division.

Beyond just a team, Vertex is a family too. Off the mats, we're brought together by our common love for food and fun. Last-minute trips, holiday gatherings, and regular suppers are part of the Vertex calendar — if you're ever at Simpang, and you find a particularly boisterous table, you'll know that's us.



FIFTH ROW





<u>SUTDio</u> explores the aspects of design thinking and participates in different craft-related activities, working with various materials!





At <u>SUTD squash</u>, we're a diverse, close-knit community united by the passion and love for the game















At NiHonGo!, we conduct cultural sessions to share our passion points on Japan. Plus, we engage in cultural activities like karuta and calligraphy.



It doesn't matter if you're an experienced player or holding a racket for the first time — there's always a spot for you on the SUTD tennis team.



(oh, and even monthly buffets!).



FAB TIME AT THE

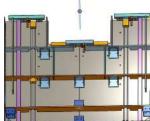
STAGE 1: BUILDING OF THE ALUMINIUM FRAME AT THE MACHINING SECTION

In our very first prototype, we built our table's frame using Scrapyard wood (Pro tip: you can always find spare materials donated by fellow schoolmates here) band-sawed at the Woodwork section and drilled using the screws on Level 2 (Pro tip: the friendly Fab Lab staff can even lend you a drill). However, our hands-on experimentation revealed that the wood was too uneven and weak to be a frame. We decided to use the Assembly Space to store our large prototype from start-to-end as it had easy access (and AC!).



Wood frame

For our second iteration, we decided to plan out the design using Computer Aided Design (CAD) on Onshape and Fusion 360. Using it as a reference, we cut 2020 Aluminium Extrusions at the Water-jet Machining Centres and attached them using T-nuts and L-connectors (**Pro tip:** these are popular at the Fab Lab, also easily available at Lian Fu Metals trading), tools from the essential toolbox every EPD student gets when they first join.



Aluminium frame

STAGE 3: 3D PRINTING

Fab Lab is every EPD and ASD student's second home.

30.007: Engineering Design Innovation (Term 5) is a

compulsory EPD module which is a step above the

three terms) year.

03.007: Introduction to Design (Term 2) course all SUTD students take in their Freshmore (a #SUTDent in their first

> We used the new Anycubic printers (Pro tip: take the training course before you use them) to print spirals for our vending-machine inspired tray mechanism, and to print inner table supports.

3D Prototyping



MDF tabletop Acrylic gears



STAGE 2: LASER-CUTTING OF MEDIUM

DENSITY FIBREBOARD (MDF) AND ACRYLIC

After the frame had been built, we laser-cut MDF to form the top and

bottom of our table-top as it was light and strong. We also laser-cut

acrylic circular and rack-and-pinion gears to increase motor torque and

attach to an Ikea sliding rail. The laser-cutter is definitely my favourite

Fab Lab machine — it has allowed me to make many artistic gifts!



Spirals and table supports (in white)

Ask any EPD student, "What is your fondest memory of Term 5?", and you'll get the same answer — "Grinding it out in the Fabrication Lab (lovingly called Fab Lab) for 30.007 and ending work just in time for Macs breakfast." Okay, I kid, but truly, the

X Stairs

Composite & Painting

Maker Space One

Assembly Space

Towards Canteen

Maker Space 2

our table!

My group for 30.007 was a group of four girls and I must say I am proud of where our hard work brought us, despite being one of only two 4-member groups. With my teammates — Ang You Shan, Foo Shi Wan and Tan Yi Xuan, we designed and fabricated a Smart Self Cleaning and Clearing Table for food centres to reduce the burden on elderly cleaners and cut back turnover time.

Introducing, our Table Kosong. It has both a table top which clears the tray into the centre hole and a tray stacking mechanism below it that stores trays.

It is a course which combines engineering and design in the way SUTD is famous for and allows us to apply all our



Section

Laser Section

Once our table had been set up, we had to test it with

H-bridges and wires from the E-Lab, we connected our

motors, WSB2812 light strip, sensors and buttons to the

main Arduino. Now we could press buttons to "chope"

all the electronics. Using the switches, capacitors,

STAGE 4: ELECTRONICS LAB

hands-on skills to produce a prototype we can be proud of.

alumnus

Tanvi Ravindra Thombre National Junior College

FINAL LOOK

After combining the above mechanisms and branding it (Pro tip: the Fab Lab has a Composite and Painting room for spray painting), we were ready to finally present our interactive table.



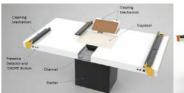
CAD renders of prototype



Final product

Ultrasound sensor

LED indicator

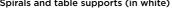


As a #SUTDent, the Fab Lab gave me the opportunity to bring to life anything I could dream up. With help

from the staff, we brought to life serious projects like design and UROP (Undergraduate Research Opportunities Programme), and passion projects like an infinity mirror and laser-cut tags. The Fab Lab is only limited by one's own imagination and efforts. So, what will you grind out at the Fab Lab?







A GAME **OF DIALECT**

Ignasia Hanny Nanyang Junior College alumnus

At SUTD you have plenty of opportunities to turn your design idea into reality. One example is through Desi Odyssey, established by the SUTD-MIT International Design Centre (IDC) in partnership with the JP Morgan Foundation.

PROBLEM OF "IT'S ALL GREEK TO ME"

Do you find yourself in situations where your grandparents speak to you in a dialect and all you are thinking is "Man! It's all Greek to me.'

It happens to us all the time and it got us thinking if this is just millennials not understanding dialects or is there a deeper social problem that can be addressed?

So, why is learning dialect important? First, many of the elderly are not proficient in Chinese or English. This isn't just in everyday conversations. It becomes crucial in understanding their needs for professionals such as doctors and nurses. Second, language is a part of our culture and identity, and that's why we feel that dialects should not be forgotten.

OUR SOLUTION

Through our project, our team discovered that 80% of millennials identified this as a problem. The existing means to learn a dialect are not practical and effective. But the most common reason that deterred them from learning was that it's

This is where Ahma! (means grandma in dialect) comes in. It's an interactive Hokkien card game that incorporates humour and design to learn Hokkien. It has Hokkien words written in a simpler Chinese phonetic system with English translations to further explain their context.

After testing our product with 100 participants, 85% showed increased interest in learning Hokkien and most importantly, at least 65% remembered at least 5 words after only 15 minutes of gameplay. The rest managed to remember even more!

2 and 3 of our Freshmore years using design thinking. As a social innovation product, empathy was essential in understanding and identifying the pain points of our target users. Our team spent days conducting user research, brainstorming to define the problem statement, and most importantly, working on countless rapid prototyping and feedback loops to improve our product.

DESIGN-THINKING APPROACH

Under the guidance of our Design Odyssey

mentor, Ahma! was developed during Term





CURRENT STATUS OF AHMA!

Currently, we have two sets of high-quality prototypes for users to play with. We hope to improve Ahma! in the future, keep dialects alive and your Ahma happy!

Project members:

- Ignasia Hanny
- Javier Pey Jia Jie
- · Tan Yong Da, Dino
- Er Ding Xuan
- Lim Jia Qi

IT'S A FACT!





Ang You Shan Hwa Chong Institution alumnus



Plants are almost like little people. They need enough attention and care — even if it's simple things like sunlight and water. Trouble is most people aren't aware of the basics. So, gardening tends to become tedious and ends in frustration — for both the grower and the plant (I've accidentally killed many of them, oops!). So, as part of Design Odyssey's Drive Programme, my team wanted to encourage more people to enjoy gardening. Hence, we decided to create Bud — a smart planter buddy.

BUD SOLUTIONS

Through Bud, we made gardening an interactive journey. Multiple sensors in the pot track the soil moisture level, amount of sunlight received, and other variables. Bud was capable of showing the plant's health level using emoticons — a smiling face when nourished or a sad face when thirsty. With Bud, one could connect with the plant like never before. Gardening is now more enjoyable!

DESIGN-THINKING ELEMENT OF BUD

The design journey for Bud started off with a big, mighty goal to encourage more Singaporeans to consume healthy and organic food. We needed to find out why people don't grow their own produce. So, we began on-ground research at different places including the Botanic Gardens. We also visited multiple indoor farms and the community gardens in Singapore, to get a better grasp of the gardening landscape and the true pains of an amateur gardener. Post research, we applied the learnings in our design thinking - which were critical when developing Bud through every version of the prototype





HOW HAS BUD DEVELOPED?

Bud is no longer just a help for amateur gardeners. It has embarked on a more ambitious direction as we found there were more pressing issues that we could address. Can Bud help clean up air? Can it help stressed-out office workers? With new problems to solve, we are currently working on a plant-based air purifier called HAVA rings which can clear pollutants in the air, especially Volatile Organic Compounds (VOCs) which cannot be removed by many commercial air purifiers. We are optimising the design of the product and making it user-friendly. When completed, it'll truly be your Bud that looks out for you.

Project members:

- · Ang You Shan
- Fariha Ahsan
- Tan Hui Min Grace
- Tanvi Ravindra Thombre

INCEPTING **IDEAS FOR A**

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.

Does seeing images of attractive people vaping lead people to develop a desire to vape? Does viewing Instagram images of food shape what you want to have for lunch?





Why does giving a step tracker to someone increase their likelihood to walk more?

At SUTD's Health Communication and Behaviour Change course, we try to uncover the psychological principles behind desires and behaviours, and tap onto them to design creative solutions that

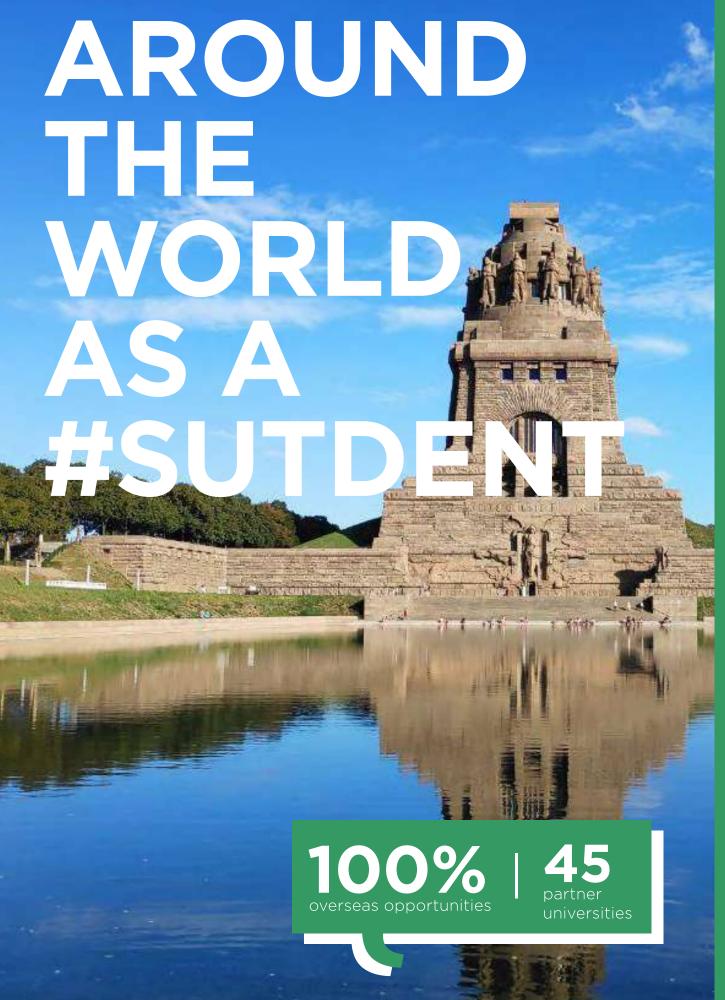


Dr Andrew Yee

Faculty Fellow Humanities, Arts and Social Sciences

can improve society's health and well-being. Tapping on their own pillar strengths, students have designed video games that try to inculcate a preference for healthy options among children, interactive toothbrushes that incorporate design elements aimed at helping children develop better oral hygiene and even a scent-emitting alarm clock that encourages tertiary students to eat a healthy breakfast. The course ends with an exhibition that showcases all student projects, and is attended by academic and industry stakeholders alike.

After taking this course, we hope that students will have a deeper understanding of what makes humans do the things they do.



THE ART OF CINEMA



Dr Sandeep Ray

Senior Lecturer Humanities, Arts and Social Sciences (HASS)

Compared to other art forms like painting, writing and sculpture, cinema had been around for a lot less - a bit over a 100 years. At SUTD we offer a documentary film elective: 'Non-fiction and Ethnographic Film: Theory and Practice'. The course, as the title suggests, is not limited to making films. We also learn about the history of the non-fiction tradition in cinema. The questions we explore include: What are the differences between documentary, ethnographic and non-fiction films? Can a 'documentary' have actors in it? How does archival footage play a role in the re-construction of events? There are screenings, readings, animated discussions, short exercises, and a group-based final film which is screened for the public.



Jiak 3 Hawker Stories

HASS runs a 'Non-Fiction Film Lab' which houses a lot of portable HD equipment for your use on and off campus, a state-of-the art projector. and computers to edit. We invite guests to talk about their professional work. Recent presenters include Ruth Smalley and Ray Yeh from Channel NewsAsia and Ben Gordon — a Spanish filmmaker.

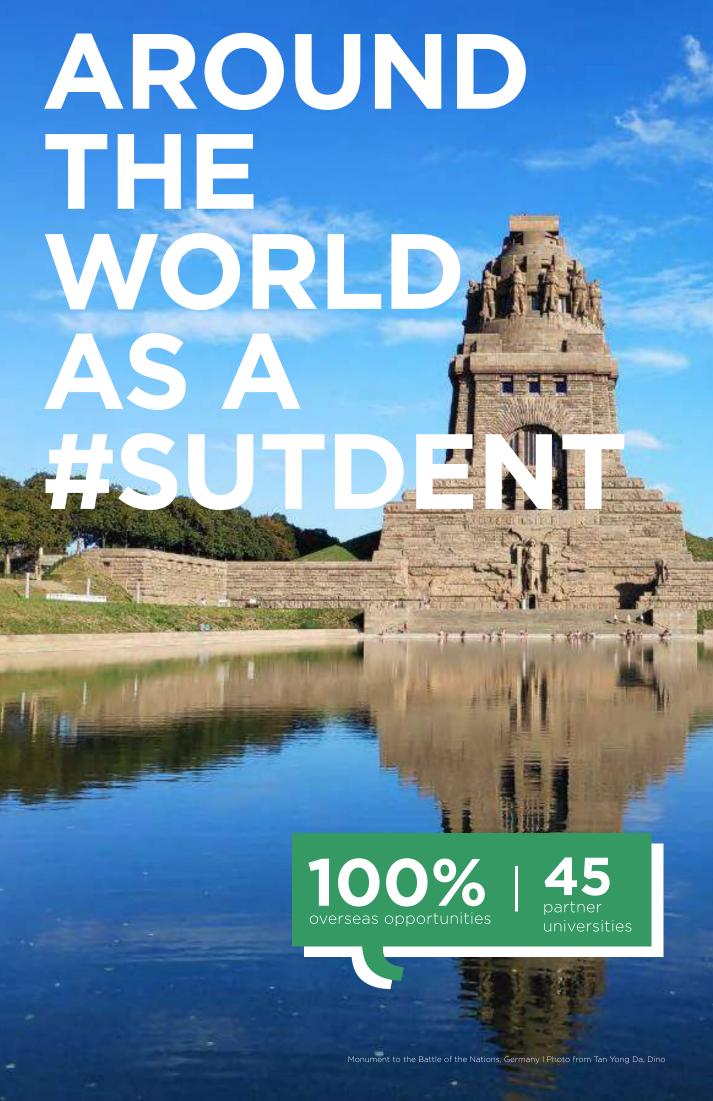
Making a film is a beautiful way of expressing your eye for perfection and love of technical rigour, combined with your creative aspirations.

It also helps you tell a story about the community you live in and care about.



Passion made Possible?

A particularly interesting student film was 'Kyra' (2018) that looked at the sensitive issue of societal perceptions of the transgender community. The filmmakers spoke to strangers on the street, asking for their candid opinions, as well as patiently documented personal insights into the daily life experiences of the main subject. It received the audience vote for 'best short doc' at the end-of-term public screening.



SEE BERKELEY LIKE #SUTDENTS





Clarice Chua Qing Yu Dunman High School alumnus

We spent a weekend at the 6th most

visited national park in the US, where

views of Half Dome and Vernal Fall!

we hiked and soaked in the magnificent

Yosemite National Park

VISIT



Koh Xian Ming Nanyang Junior College alumnus



Alcatraz

A unique experience that brings you back in time to a former prison. The excellent audio guide tells you about the grim, gripping history of the prison and the people incarcerated there.





Napa Valley

Known as the Disneyland for adults, Napa Valley offers some of the world's best wines and is only a 1.5 hour bus ride from Berkeley. We had an eye-opening experience visiting vineyards, wineries, and of course, drinking way too much wine!





Whale Watching and the Golden Gate Bridge

We booked a whale watching tour from Pier 39 and were lucky to spot some whales. The 2-hour boat ride was really worth it but I was so excited I forgot to take photos of the whales!



EAT Oysters from Hog Island Oyster Company, San Francisco

The oysters here are amazing! There were six different kinds on the oyster platter and each of them had a unique taste. The waiter even told us which order we should eat them in for maximum flavour.



Go on a road trip and explore the

and beautiful coastlines along the

of it will take your breath away.

breathtaking scenery of jagged cliffs

Pacific Coast Highway. Be sure to stop

by the Bixby Bridge — the sheer beauty

Scampi from Gypsy's Italia, Berkeley

Gypsy's Italia is considered cheap in the US, with prices all 12USD or less. I had scampi and was really impressed by the quality of the prawns and scallops — they were big, fresh and fragrant.



Ghirardelli Chocolate

San Francisco is the birthplace of Ghirardelli Chocolate Company. These chocolates make a great gift to bring home as they come in nice boxes. I recommend the Sea Salt Soiree flavour!



had in Berkeley!



Elizabeth Lum Ly-ern Raffles Institution alumnus

Photographer: Tsou Li Tian Matthew Anglo-Chinese School (Independent) alumnus

STANFORD

Tip 1: Get a bicycle

Stanford has a massive campus, and getting a bike from the nearby Walmart makes commuting around school and getting to class much easier. On top of that, it's great for short trips to the nearby Stanford Shopping Mall, Town and Country Mall, or downtown Palo Alto for a quick boba run!

Tip 2: Bring your own stationery

Most lecturers in Stanford advocate the use of pen and paper for notetaking. Be prepared to handwrite notes in class, so remember to bring your own stationery as the options in America are quite different from what we have back home.

Tip 3: Stanford resources

Stanford libraries contain a treasure trove of 9.5 million books. Many courses require external readings of your choice for assignments, so head down to the libraries and utilise the abundant resources for a head start!

Tip 4: Participate in class

It is part of the American culture to be very vocal. The local students ask questions whenever they have any doubts. Don't worry about your question appearing daft!

Tip 5: Get creative with your food

Although the Arrillaga Family Dining Commons has a varied menu with different cuisines available daily, the dishes are bound to repeat in your eight weeks there. To keep things interesting, make your own concoctions with their dessert facilities such as affogato, parfait, and toast!



SUMMER AT STANFORD

SURVIVING THE

02

900 US-9





09



EXPLORING

Tip 6: Rent a car

Stanford is conveniently located near a bunch of must-see attractions. The most convenient and cost-effective way to explore these places is by car, and Enterprise provides the most competitive rates! If the driver is below 21, they will need their own insurance from Singapore. It's best to book the cheapest tier of cars as Enterprise often offers free or discounted upgrades at the point of collection. Do opt for the Tier 1 Damage Waiver for peace of mind whilst driving.

Tip 7: Driving in the United States

Driving on American roads can be daunting, but Google Maps and a sturdy phone mount are your best friends. Some of the newer rental cars have Carplay/Android Auto built in. Interstates and freeways have complex exits and slip roads, so pay attention and don't drive over the speed limit. A credit card is the best way to pay for gas and most gas pumps require you to enter your "Zip Code" to authorise the use of your credit card — simply enter the first 5 digits of your 6 digit billing address that the card is linked to.

Tip 8: Layer up

The weather in the bay area and the rest of California can be unpredictable. Even within San Francisco, different neighbourhoods can have their own micro-climates so check the weather forecast! Dress in layers, and bring a jacket, especially at night, in case it gets chilly.

Tip 9: Get the Yelp app

California is a melting pot of cultures and offers a variety of cuisines. Yelp comes in handy as you can filter your searches by price range, locality and cuisine. This way, you can easily cater to your whole group.

Tip 10: Prioritise what you want to see in California

Every weekend, the school organises trips to notable attractions such as Alcatraz, Santa Cruz boardwalk, Yosemite, a Giants baseball game and a musical. Slots are limited each week, and if you've been on any of these trips, you get pushed down the list. So if you're interested, sign up early!

ENTREPRENEURSHIP IN THE HEART OF BERLIN











Tan Yong Da, DinoMeridian Junior College alumnus

The customised 8-week TU Berlin VIEW Programme gave 11 of us the unique opportunity to learn about Entrepreneurship, Business Innovation and Leadership in the start-up capital of Europel

Week 1 to Week 2 Innovation and Entrepreneurship

Under the mentorship of an experienced entrepreneur, we thought about design thinking and innovation from a new perspective. Learning in a global classroom, we got the opportunity to team up with international students from different fields. The integration of different school of thoughts during brainstorming made learning so much more invigorating.

In order to find the ideal product-market fit, our multinational teams conducted extensive market research to better understand our audiences. Conducting interviews with locals was slightly daunting, but was crucial in understanding a foreign market. We created novel solutions that targeted real problems, finally concluding the programme with a pitch. The course was thoroughly enjoyable and a great insight into entrepreneurship fundamentals.



- O1 Our international friends from all around the globe
- O2 Best way to spend a weekend in
 Berlin a trip to Mauerpark Flea Market
 O3 Pitching to real investors and VCs
- O4 Brandenburg Gate, Berlin's Symbol of Unity
- D5 Bike maintenance a part and parcel of our lives for two months















Week 3 to Week 6 Start-up Crash Course: From Idea to Reality

Taking a peek at the entrepreneurial scene in Berlin, we visited innovation labs and co-working spaces where entrepreneurs shared their experiences. Their entrepreneurial journey made us appreciate how we as technology students should pursue our passion rather than conform to societal influences.

We were each required to develop an idea into a business start-up. We were guided through the multifaceted nature of a start-up: networking, marketing, branding, financing. After developing our ideas for a month, we pitched our business propositions to a panel of angel investors and venture capitalists.

Week 7 to Week 8 Leadership in the Entrepreneur's World

This course revolved around the premise of the question "Why should anyone be led by me?". Through sharing of our life experiences and encounters with leadership, we gained an intrinsic understanding of our character and values.

With guidance from our mentor, we created a personal development plan, charting a course in achieving our pursuits in life. This course showed me a clearer perspective on what it means to be a leader and follower.

The TU Berlin View Programme was amazing in both its curriculum and opportunities provided. Forging international friendships, fun activities every week, exploring every nook and cranny in Berlin — the two months have become an unforgettable part of my life.

11 of us arrived in Berlin as mere acquaintances, but through our crazy adventures around Europe and living altogether in an Airbnb, we left the charming city as a family.

- Of Still cheery despite being lost in the woods of Saxon Switzerland
 O7 Never a dull day in class
- O8 Our first group photo at the former part of Berlin Wall and its Death Strip
- High Rope Course at MountMitteWeekend visit to Amsterdam, Netherlands
- 1 Experiencing Berlin on a kayak
- 2 Finally, a Chinese meal with international friends

LEARNINGS WITH AALTO



Chan Xi Ling Jocelyn Temasek Polytechnic alumnus

Koh Yan Hao Pioneer Junior College alumnus

FROM TERRIFYING TO EYE-OPENING

When we first set foot in Finland, we could not understand a word of Finnish. We were clueless about even where to board the bus. To sum up, it was terrifying!

The very next day was the start of the 3-month Aalto Information Technology Program (ITP). We gained a deeper understanding of designing with users in mind, employing methods such as user journey maps and personas to conduct iterative user testing. Tackling problems posed by companies collaborating with ITP, we eventually delivered our solutions to them.

Looking back, it has been a great journey interacting with Finnish companies and experiencing the different working cultures. It was indeed, well-invested time at Finland.







Chloe Liang Xiuling Anglo-Chinese School (Independent)

EXPERIENCE ARCHITECTURE IN A NEW LIGHT

Singapore Hawker Centres: Interacting Flows in Urban Systems is a joint options studio with Aalto University in Finland that can be taken by both Term 7 Undergraduate students and Term 9 Masters students. The studio aims to reimagine the concept of hawker centres in Singapore and look at ways the typology can evolve as Singapore presses forward.

As one of the flagship initiatives of SUTD's partnership with Finland's Aalto University, this studio has been a whirlwind of new experiences. After the Aalto students visited Singapore in Week 3 and got a taste of our hawker centres, it was our turn to make a trip to Helsinki! On the first night, Aalto professors told us about the ever-changing conditions that Finnish architects have learned to work with — for example. with their midnight sun in summer and polar nights in winter, their lighting strategies vastly differ from Singapore's equatorial climate.

Over the next seven days, I was constantly blown away by the beauty and diversity of the architecture in Helsinki. As a relatively young city, Helsinki's architecture varies from how many historic European cities struggle to be. Here, monumental cathedrals coexist with stern modernist structures, and buildings weave around huge granite boulders that have rested there since the last time glaciers covered the country. The architectural highlight of my trip was definitely the Temppeliaukio Rock Church, which was carved out of a solid outcropping of granite with dynamite — how cool is that?

We experienced our midterm critique with our Aalto counterparts where both SUTD and Aalto professors gave feedback on our projects. Seeing everyone's diverse projects and skills was made more memorable afterwards by our sauna expedition with the Aalto students, which was the best part of



Adam Idris Lim Wei Jurong Junior College alumnus

ENTREPRENEURSHIP THE FINNISH WAY

What was an iconic Finnish cultural experience you had?

Bubble tea and mala unite the masses in Singapore, but in Finland it's the sauna. Quintessential to Finnish life, the sauna is traditionally the first room built in a house. I had the chance to enjoy a sauna and it is truly magical how a little bit of steam can turn strangers into best friends.

What were the key skills you picked up?

The Aalto Venture Program (AVP) adds a third diamond of entrepreneurship to the double diamond model of design thinking. I learnt to conduct market research, create viable business models and pitch to potential investors. Furthermore, as we were from different majors, such as anthropology and industrial design, the ideas we came up with were meaningful on a multidimensional

Were there any challenges that you overcame?

Being alone was a scary thought. I remember thinking how crazy it would be being in Europe all alone. All that disappeared when I met my course mates. We adjusted to the new environment together — all while cursing in Finnish and designing in Adobe XD.

How has your education at SUTD impacted your experience in Finland?

SUTD had already taught me about design thinking. This came in handy during the ideation process at a later part of the programme.



- The port scene in Helsinki
- Aalto University's magnificent auditorium
- Temppeliaukio Rock Church



NATIONAL DESIGN CENTRE

27 NOV TO 31 DEC 2019

'HAWKERS IN OUR CENTRE'!





DESIGNING SOLUTIONS AT ZHEJIANG UNIVERSITY

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.

1. AI EMPOWERED DESIGN



Kuah Wee Ping Meridian Junior College alumnus

PROBLEM

When celebrities endorse multiple products via Taobao Livestream, the ads tend to run for hours.

SOLUTION

Our Automated Live Video Extraction (A.L.I.V.E) extracts product details from the live streams and combines them into a short video for Taobao's use on its product pages.



2. SCREENS AND BEYOND



Yip Weisheng Ryan Victoria Junior College alumnus

PROBLEM

Parcel sorting at Cainiao stations is a manual, manpowerintensive task

SOLUTION

Honeycomb is a modular system of hexagon-shaped modules with wheels to roll packages with the aid of Computer Vision software. Workers can simply leave packages on Honeycomb, and the system will organise, retrieve and regulate the rest.



3. AR + MUSIC



Kua Yi Jie Isaac Victoria Junior College alumnus

PROBLEM

The way we experience music has not changed for centuries

SOLUTION

Intereact is an app that uses augmented reality technology to create dancing characters, ranging from Elvis to Santa, that reacts in tempo to its user's choice of songs — thus allowing users to enjoy an entertaining mini dance while listening to their favourite music.



4. MEASURING CUSTOMER'S SATISFACTION WITH BRAIN SIGNALS



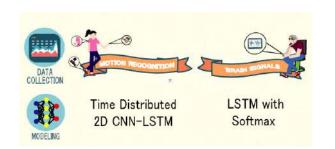
Ang Shuqin Micaela Temasek Junior College alumnus

PROBLEM

Today, Customer Satisfaction is a metric that's only measurable via customer surveys which only happen after they have experienced a business' product or service

SOLUTION

We created an algorithm model using data from brain signals and image recognition to measure customer satisfaction. By classifying these data into "satisfied" and "unsatisfied" groups of customers, businesses could potentially pre-identify possible areas of improvement to achieve maximum customer satisfaction.



5. AN INTELLIGENT COURTYARD SYSTEM



Cornelius Yap Yu Lin Meridian Junior College alumnus

PROBLEM

Generally, areas like courtyards can be dangerous due to being quiet and unguarded.

SOLUTION

We created an intelligent courtyard lighting system designed with facial recognition cameras that identify registered users and strangers. When a stranger is detected, the system will notify users of a breach via mobile.



6. DESIGNING SMART HOME PRODUCTS



Nurul Akhira Binte Zakaria Singapore Sports School alumnus

PROBLEM

Working adults in China do not see their parents often as they live in the city. This lack of communication can cause loneliness and worry.

SOLUTION

Vivi is a smart calendar that uses Convolutional Neural Network (CNN) to analyse a user's emotions to create custom day plans, control household items, as well as update users' loved ones via a mobile app to encourage open communication.



7. DATA2VIDEO



Jordan Tay Jin Jie Singapore Polytechnic alumnus

PROBLEM

The current methods and tools for presenting data for data journalism are rigid and visually ineffective.

SOLUTION

LET'S VIS (Load, Explore, Tweak, Share, Visualise) is a data-driven visualisation editing tool that allows users to explore, compare and annotate insights and critical events of different datasets across time — allowing for more flexibility in analysing and presenting data.



8. CHINESE ARCHITECTURAL ENVIRONMENT



Lynus Lim Ming Jun St. Andrew's Junior College alumnus

PROBLEM

In China, existing police and traffic police posts are not adequately equipped or designed to accommodate performance efficiency or essential human needs.

SOLUTION

A reimagined smart booth that features improved monitoring equipment and facilities such as lavatories and water dispensers to help policemen better efficiently regulate and pinpoint potential threats on the streets.



9. INTELLIGENT DEVICE DESIGN FOR LAST-MILE DELIVERY



Lim Jia Qi Temasek Junior College alumnus

PROBLEM

The current smart lockers are inefficient due to their fixed sizes regardless of the size of the package.

SOLUTION

A mobile modular approach that allows for better optimisation of space by redesigning compartmentalised smart lockers with new levers that can slide and clamp down to secure parcels of various sizes.





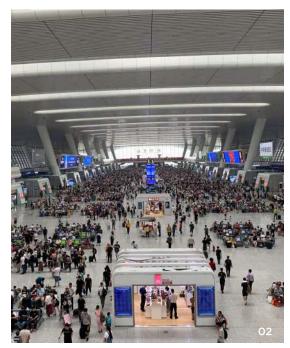
James Gan Sheng Wei Serangoon Junior College alumnus

CHINA TO THE WORLD

My group and I flew down to Shenzhen to learn about the technology landscape in Silicon Valley. I was impressed by the culture of innovation in Shenzhen, breaking the stigma of merely copying western technologies.



In China, the high-speed rail (HSR) network — the longest rail network in the world — was the transport mode of choice due to its punctuality, price and terminal's proximity to the city centre. Although crowded, the train terminals never felt messy — the ticketing and gantry system were catered to handle the huge crowds. In addition, the train cabins are clean and maintained by crew on board, making the journey very comfortable.





During one of our long weekends, we caught a flight to Beijing. While walking through Tiananmen Square, I envisioned the events that happened during the 1989 political crackdown and how it profoundly shaped the political climate of China, and the fight to control the history and image of the nation through censorship.





We also visited the province of Yunnan. In Shangri-La County, the local population identified as Tibetans and spoke Tibetan as their native language. It's interesting to see that many store signs had three different languages, showcasing the prevalence of their native language in the Han dominated population.





Unlike many countries, QR codes instead of credit cards are the preferred form of cashless payments. The QR code technology can be applied to a myriad of different uses such as payment, unlocking bikes, ordering food and placing reservation.





- O1 A scenic lake in a lesser known part of Zhejiang Province
- 02 High-speed rail terminal during rush hour
- O3 Jade Dragon Snow Mountain, Lijiang
- O4 Sleeper train en route to Lijiang, Yunnan
- 05 Forbidden City, Beijing
- O6 Bridge across Tiger Leaping Gorge, Lijiang, Yunnan
- 07 Ferocity of glacier water behind us
- 08 Wuzhen Water Town
- O9 Archery in the expansive grasslands

A DAY IN THE LIFE OF A #SUTDENT AT HANYANG



Goh Sing Yee Nanyang Junior College 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.



IN AUTUMN

It's the start of autumn, a season which mesmerises me with its beautiful fall foliage. After my morning lessons, I head to the university library to work on my assignments before meeting my buddy group from the buddy programme organised by Hanyang's own student community. In this buddy programme, local student participants are paired with exchange students to help them better adapt to life in Seoul.

It's time to meet my buddy group, so I head towards Ttukseom Han River Park where we've arranged a picnic!





Following the picnic, we head over to Hongdae, where its streets are lined with busking performances every night. After watching a few fascinating performances, we end off the day with a late dinner of jjimdak, one of my favourite Korean dishes!





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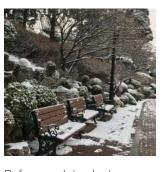
IN WINTER

Rise and shine! As I make my way to the university for class in the freezing weather, I grab a cup of Paik's Coffee to warm myself up.





Following my lecture, I have an affordable lunch at one of the many cafeterias on campus.



Before my Introductory
Korean night class, I head to
Myeongdong with my fellow
SUTD friends to shop around
and feast! Myeongdong,
Seoul's consumer heaven,
is loaded with department
stores, fashion boutiques,
and tons of cosmetic stores.
Soon, it is time to head back
to campus for our Korean
lesson. Thereafter, we have
Korean fried chicken for
dinner with our classmates
and teacher before calling it
a day



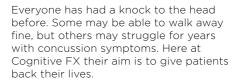






GO THE DISTANCE

Keane Lim Teck Meng Anglo-Chinese Junior College alumnus



Working behind the scenes, I worked closely with the patient care team and a software development company on the design and wireframe of an app and website to improve the current system. On top of that I recommended various system improvements, from digitalising schedules to streamlining patient care



I was thankful to be entrusted with the patients' therapy sessions, as well as briefing patients on MRI scans so that therapists know the specific area to work on with them.

Going to SUTD exposed me to design tools and thinking, allowing me to solve problems and present my solutions with clarity, avoiding miscommunications.



Overall the culture was the best part of the internship. Being an overseas internship, the working environment was greatly different from Singapore's.



As an intern, I was able to communicate directly with my bosses and suggest improvements, or ask for clarifications that allowed immediate action. Colleagues commended one another for having great ideas and provided support. They were generous with their compliments, and made you feel treasured and important.

As Brian Tracy said, "Make your life a masterpiece; imagine no limitations on what you can be, have or do", and grab the opportunity you want

- 01 Patient about to do a functional Neuro Cognitive Imaging (fNCI)
- 02 Trying out Dynavision therapy

03 Cognitive FX family

My job scope included identifying mismatches between conventional education and the skills required to design eVTOLs. The main skill that I picked up is the ability to break down complex problems, also known as wicked problems, and to solve them with solutions that require large amounts of integration. For many years, the aircraft designing and manufacturing industry has been applying these integrated solutions to the paramount problem of designing

My SUTD education therefore came into use when I was required to analyse the problem and the current proposed solution (the solution being the eVTOLs themselves) using skills learnt from our design modules.

There were many memorable experiences from my time here in Brazil. This included visiting LABACE 2019, an air show held in Sao Paulo.



THE EMBRAER **EXPERIENCE**

€ EMBRAER

Chua Wei Hang National Junior College alumnus

I interned at Embraer, Sao Jose dos Campos (Sao Paulo, Brazil) and worked on Electric Vertical Take-off and Landing (eVTOL) aircrafts. The eVTOL industry is extremely new and faces many challenges, most of which are limited by today's technology.





I also visited the "Iron Bird" which is a fully integrated system test ground before flight systems are installed, and got to fly a simulation of an aircraft operated based on real components. My colleagues were very friendly and helpful, and invited me for barbeques

- 01 Sao Jose dos Campos, Embraer,
- 02 Labace 2019, the Embraer Legacy 450



DATA **ANALYTICS** AT EY

Muhammad Faiz Bin Rahamat National Junior College alumnus



My summer internship was spent in EY's Performance Improvement (Data and Analytics), a sub-service line under Advisory. Throughout my 16 weeks, I was part of a text analytics project team that had members within Singapore as well as beyond. Having never worked on a project of such scale, it was interesting to see different moving parts being developed across stages and progressively coming together to ensure our client deliverables were met.



For the most part, tasks assigned required proficiency in Python and Excel. Having tackled two industry projects in Terms 4 and 5 of the Engineering Systems and Design pillar, the challenges of handling and analysing large amounts of data were similar in some aspects. Nevertheless, portions of the work undertaken in the internship such as model deployment were more unfamiliar. Learning and applying new knowledge certainly made the internship experience a fruitful one.

There were many opportunities to participate in activities, such as inter-department games, charity events, and even EY's own internal data science competition and brown bag sessions. An interesting experience was joining the EY NextWave Data Science Competition that was open to students.



IT'S A FACT!

receive return offers after internship Faiz is one of them

It was both nerve-wrecking and fun to compete against my own peers from

It is important to take a step back away from academics from time to time and taking up an internship is one way of doing so. I am grateful to my friends and colleagues who have helped me navigate my way both at work and in school.

01 Team building activity 02 EY NextWave Data Science Competition

Shopee

BECOMING THE CEO **OF YOUR PRODUCT**

Kenneth Ng Jun Yan Catholic Junior College alumnus



I was a Product Management intern at **Shopee**, where I worked on the underlying fraud architecture in Shopee's platform. During my time at Shopee, I was in charge of revamping the OTP (One-Time Password) architecture, which significantly improved the platform's security infrastructure.



My internship experience at Shopee was nothing short of amazing. Aside from the generous pantry, incredible facilities and lively events, the people were also friendly, patient and welcoming. Employees at Shopee work hard and play hard. As an intern, I was given full autonomy in handling and making key decisions in projects. Being assigned to major projects made me feel that I was contributing significantly to the team.





Unlike traditional software internship roles, a product manager approaches problems from a macro scale. Product managers require excellent communicative and people skills in order to relay information to other teams. This is especially critical in Shopee because of the complexity of the organisational structure. To become a well-versed product manager, one has to be knowledgeable in all aspects of the field, while maintaining the technical depth required for each field. I am thankful to SUTD for providing me with the relevant technical knowledge to be quickly familiar with the organisational structure and pick up on technical jargon much faster than other newcomers

- 01 Grand opening of Shopee Building
- 02 Last day at Shopee
- 03 Birthday celebrations with the other interns

Sinsapore TOURISM BOARD

ENHANCING VISITOR EXPERIENCE THROUGH TECH

Lee En Qi Amanda Victoria Junior College alumnus



I interned at the Visitor Experience division under Singapore Tourism Board's Technology Transformation Group. was attached to the Visitor Experience Technology department, which oversees the development of STB's tech products to:

- 1. Deliver a seamless experience to all travellers and,
- 2. Boost the market competitiveness of Singapore's tourism-related industries.

My first project was to support the development of the Tourism Information and Services Hub (TIH), a B2B digital resource platform for businesses to access and contribute relevant information on tourism-related offerings (e.g. business listings) and travel software services (e.g. recommendation engine, smart itinerary planner). During my internship, I researched about the needs of tourists and businesses, and pieced together distinct information to establish the role of TIH.

The second project was the development of a chatbot launched on the Visit Singapore Facebook page. I was tasked to create content on the chatbot and assist the team to establish logical answer flows. Though it was tedious, seeing my contributions come to fruition gave me a sense of achievement.



Interns coming together during mid-internship to share and talk about what we do in our respective departments

The exposure and foundation that SUTD had built in my first year enabled me to grasp technical concepts and jargon well, and I completed my work without major difficulties

The team at STB was fun-loving and nurturing — they were always willing to help and provide advice, not just regarding work but about life as well.

Overall, the internship experience at STB was enriching as I got to be deeply involved and contribute meaningfully to the development of my projects.



ANALYTICS IN SINGAPORE AIRLINES

Global Indian International School alumnus

At Singapore Airlines (SIA), I worked on projects involving text and voice analytics in the IT Application Services Customer service plays a major role in the airline. To improve customer experience and increase efficiency, SIA is exploring various uses for artificial intelligence (AI), machine learning and data analytics.



Getting to experience the mooncake festival with my mentor and manager is truly something different

The first project I worked on involved automating voice to text transcription, for further analysis of the extracted text data through Natural Language Processing (NLP). After which, I trained and optimised machine learning algorithms for unsupervised grouping of the text data into various categories. These projects were accomplished using algorithms from Python libraries and Automatic Speech Recognition Cloud Services. I built on the Python fundamentals that I gained from The Digital World, a subject learned in Term 3, to conduct these analyses.

My subsequent projects involved in-depth text analytics and text classification, which required customised data processing for several text datasets, as well as Deep Learning models. While working on these projects, I learnt and recognised the importance of domain knowledge in data science, as it provided the constraints that simplified complex problems. My colleagues in the SIA IT Application Services Customer Service Department and the IT Data Science team guided me in the technical aspects and provided insightful industry knowledge.

The friendly and welcoming culture and learning environment is something I will cherish. I learnt both technical knowledge and presentation skills during my summer internship, and I am fortunate to have gained exposure to different technologies and industry experience in my field of



ON THE PATH OF ARCHITECTURE

Chng Kai Jiunn emasek Polytechr

Over the course of 16 weeks interning at DP Architects, I was fortunate enough to be assigned several projects with different typologies from mixed-use development in a prime shopping district to clubhouses located in secluded areas of our island.

Whilst being involved in these projects, my superiors explained the intentions of our design and how it affects different aspects of the project. After meetings with clients and other stakeholders, such as engineers and contractors, they would run through what is expected of the assignment, and guide me through the most appropriate way of presenting my ideas and findings.

One of the biggest takeaways was when I was assigned to an Asset Enhancement Initiative Project. In land scarce Singapore, buildings in critical areas, like the downtown core, go through an Asset Enhancement Initiative to help increase the value of the building.

The problem-solving skills taught in our Freshmore year at SUTD helped me overcome several challenges during this internship.

Thinking out of the box and finding different solutions to solve the problem came into play when I was assigned to think of an alternative floor layout to achieve the same result. To expand the Net Leasable Area which helps increase the value of an existing building, consultants

would redesign and readjust the layout of the building.

The internship at DP Architects also opened my eyes to the hierarchy of stakeholders involved in projects. The way each profession presented their views, ideas and limitations of the project was distinct; yet, everyone was working towards the same goal.

I am very grateful for the learning opportunities, patience and guidance my superiors at DP Architects provided me. Although it was a short 16-week stint, I learnt as much as any full-time employee would have.



Rahul Bhattacharjee

(Customer Service) Department.

Balsa Wood Model, Understanding The Spaces In Between Blocks





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