

#### WHAT'S INSIDE HEY!

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**14** BIG LITTLE

# HEY!

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# GREAT SKI AGAD

It's 2023. You're raring to go. Are you really ready to face what's ahead with a spring in your step?

If you've been wondering how to undo holiday havoc and step into the new year looking as good as you feel, here's something you can try - facial treatment involving a new US FDA-approved technology that gets to the root of tired or troubled skin.

Available at IMAGO Aesthetics, (DEP) is a novel treatment that works by using electrical pulses to open up channels in your skin membranes through which powerful serum flows to restore it surprisingly, without the use of injections or invasive procedures.

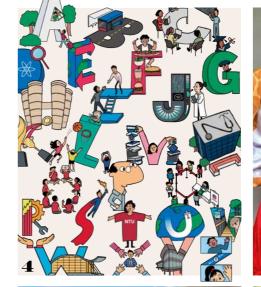
Each 30-minute session of pampering DEP sends a potent cocktail of medical-grade serum – including hydrating hyaluronic acid, amino acids and other

skin rejuvenation is triggered where it actually happens to keep your skin firm, clear and healthy. Better yet, the treatment can be customised to cater to different skin conditions.

There is no downtime, and you will not feel any discomfort or irritation during the DEP treatment. More importantly, you'll step out after each session looking refreshed and radiant, knowing that the results are not merely cosmetic.

Is some face therapy among your New Year's

For more information, visit imagoaesthetic.com.sg or call 6481 1806.



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# Tess Tay

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# Changemaker Creator Trailblazer

Chart your future and realise your ambitions at the world's best young university. Change the world with your ideas as you explore your passions and tailor a programme that matches your strengths and interests. Preview the future at the NTU Smart Campus where students and professors work on the technologies of tomorrow. Get overseas exposure and come home to one of the world's most beautiful campuses.

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Learn more about our signature programmes:

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ΝΤΙ

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HOUSE

2023

**25 FEB** 

THE

**C** FOR CLASSROOMS

Welcome to the future of learning. Smart classrooms at the iconic buildings, The Arc and The Hive, enable the flipped method of learning where students view online lectures before coming to class for group discussions. CNN described The Hive as having redefined the traditional classroom and they might say the same about the new state-of-the-art mega learning studios at the Experimental Medicine Building that each house up to 210 students. With intelligent features like cameras with live feeds and sound-masking technology, they take cluster-style learning to new levels. That also means there's never a dull moment in class.

#### **E** FOR EXCHANGE

It will change you forever, they say. So most undergraduates opt to head overseas at least once for a semester of exchange. With partner universities in all corners of the globe, including the US, Europe and Asia, and financial help for those who need it. NTU lets you experience learning and life abroad at a destination of your choice. Students also head overseas for competitions, research stints, summer studies, business and cultural programmes, language training and field trips.

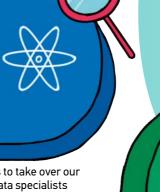


With 14 food courts and more than 30 other cafes and restaurants (including all the big fast food chains), there are more than enough food options to ignite passionate arguments over where the best mala hotpot, Korean stall, ayam penyet or bubble tea on campus is. Choosing your lunch spot, in our experience, is one of the hardest decisions of the day. Tip: Many of these savoury surprises reside in the halls, so don't confine your pit-stop for food to just the main academic buildings.



#### **G** FOR GPA (AND **GRADUATION**)

Your Grade Point Average, or GPA, and your Cumulative Grade Point Average, or CGPA, might follow you through your years at NTU, but don't let these figures be a ball and chain. Unshackle yourself from their grasp and discover who you truly are with the breadth of courses and activities here. Make time to volunteer, lead teams and connect with others. Networking will also stand vou in good stead for your future career. Graduation Dav is sweeter knowing you "tried it all" while you were in uni.



The digital world continues to take over our lives and the demand for data specialists is ever increasing. To get a foot into the industry, there's no better place than NTU. Forbes placed NTU's data science and artificial intelligence (AI) programme among the top 10 in the world, and US News & World Report ranks NTU second in the world in AI.

**D** FOR DATA

**SCIENCE & AI** 

### **B** FOR BUS

Hop aboard NTU's electric shuttles and get from hall to class and back, or to Pioneer MRT station. Learn more about the technology behind these silent shuttles at the Smart Mobility Experience Centre on campus, which includes a showcase of Omnibus, an app you should download to track bus locations and ridership in real time. If you live in Ang Mo Kio, Sengkang, Tampines or other heartland areas, express services to the campus are available from MRT stations. Shuttle buses also help medical students commute between NTU's main campus and the medical school campus in Novena.

**OF NTU** 

ΓΟ

Preparing yourself

for life on the NTU

with this primer

campus? Get a taste of

what your future holds



Spread your wings with your first nest at NTU. As a freshman, you are guaranteed a room in one of our 25 student halls on campus. Your place in hall is also a ticket to endless opportunities to build friendships and make memories that last a lifetime. There's a reason why NTU is known as a residential campus - some 45% of NTU's full-time student population call this place "home".

#### **H** FOR THE HIVE

Designed by Thomas Heatherwick, the visionary behind the 2012 Olympic Cauldron and Google's Silicon Valley campus, The Hive - affectionately called the "dim sum buildina" - has put NTU on the headlines of architecture journals as well as on countless Instagram posts. Beneath its eye-catching veneer are thoughtfullydesigned spaces that encourage collaborative discussions. Who knows, a casual conversation with a classmate here might lead to the idea for your future start-up.

#### **I FOR INTERNSHIPS**

Much more than a rite of passage, the internships that all NTU undergrads go through at least once are a chance to secure their dream job before graduation. Put your name on the lips of top employers like JP Morgan, Rolls-Royce and GSK by impressing as an intern. Each year, almost onethird of students in NTU receive job offers at the end of their stints. If working overseas is part of your ambitions, you'll have many opportunities to gain valuable career-building experience in a foreign country through initiatives like the

that places students in start-ups around the world. For scientists in the making, the CN Yang Scholars Programme puts you in laboratories around the world as a research intern, and lays a path towards PhD studies for you.

**Overseas Entrepreneurship Programme** 

### **K** FOR KNOCKOUTS

have made waves around the world for their accomplishments in academia, business and even entertainment. Among our alumni are the first Singaporean to work for Google, acclaimed singers and actors (including Nanyang Business School alum Stefanie Sun), and successful entrepreneurs and leaders in the C-Suite. Dream big and join the scores of NTU students who continue to snap up prestigious prizes, such as the Dublin-based Global Undergraduate Awards given out yearly to the world's most creative and innovative undergraduates.

### **J**FOR JOBS

All graduates of NTU enjoy the benefit of being sought after, with nine in 10 grads receiving job offers within four months of graduation. According to the latest Graduate Employment Survey, grads from Business and Computing topped the charts with a mean starting salary of more than \$6,500. Sage advice on how to land - and keep - that job is offered by career coaches and through career preparation classes that you take as early as your first year.



Join the ranks of NTU students and alumni who

#### L FOR LEISURE

NTU isn't just a campus in a garden but a mini city - a microcosm of Singapore, if you will. Fitness enthusiasts can sweat it out at Yunnan Garden, the fully-equipped gyms or the Olympicsized pool, or join NTU sports clubs and use professional-standard courts in modern arenas like The Wave. Folks with special interests like esports, film or fishing can find their kin here too (you can even fish at Nanyang Lake if you're part of the anglers' club). Photograph rare wildlife on campus – a de facto nature reserve – if you're a budding photographer with a passion for biodiversity.

### M FOR MAJORS & MINORS

Interdisciplinary studies are the name of the game at NTU. Take your pick of second majors and minors to satisfy your curiosities or diverse passions. Combine your communication studies or economics degree with a second major in business, or your engineering degree with a second major in data analytics or entrepreneurship to widen your career prospects and unlock doors to jobs of the future. You can also dabble beyond your discipline with a minor in subjects ranging from

International Trading to Art History.

#### N FOR NOVENA CAMPUS

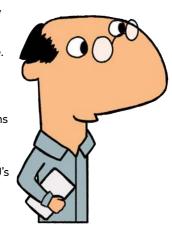
NTU's medical students hone their skills in realistic hospital settings at the Clinical Sciences Building, connected directly to Tan Tock Seng Hospital, where they get clinical exposure from as early as their first year of med school. Between team-based learning sessions and practical lessons with simulated situations, doctors-in-training can wind down at the cosy house rooms, gym, dance studio, or spacious library that boasts one of the best views of Singapore's skyline.

#### FOR ORIENTATION

Ask seniors about their favourite university memory or how they met their closest pals and freshmen orientation will be the likely answer for both. Schools, clubs and halls organise their orientation programmes to help freshmen find new friends and get acquainted with the campus. The good news is, these orientation programmes usually run consecutively so you can sign up for all if you wish.

#### **P** FOR PROFESSORS

Your professors are your cheerleaders. They want you to succeed, so reach out to them when you need help. You'll soon realise that your seniors address some of them by name Each prof has their own preference, but you won't go wrong calling them "Prof". for sure. Many of your profs are high-flyers in their respective fields. In fact, NTU ranks first in Singapore – and among the top 25 institutions globally - for having the most number of influential scientists, according to American data company Clarivate Analytics. Future entrepreneurs will also be glad to know NTU's innovation and enterprise arm is chaired by the founder of a unicorn who was an NTU professor in his younger days.



#### HEY! INSIDER ☞ Derek Rodriguez ☞ Vivian Lim

S FOR SCHOLARSHIPS

One of the ways NTU recognises potential is with bond-free scholarships. For example, freshmen can apply for the Nanyang Scholarship or the College Scholarship, which cover tuition fees and offer allowances for expenses such as living costs. There are also scholarships awarded by schools or backed by endowment funds or companies that you can consider, the last usually guaranteeing you a job for a few years.

### T FOR TEES

The hype for NTU tees and other tops is real. Take the example of the cream pullover that was sold out in a flash. Don't worrv too much if vou missed out on a coveted colour, there's always another drop around the corner. Here's a tip: Follow the NTUsg social media accounts for news on HEY! roadshows that often give out rare tees for free. These limited-edition T-shirts are so coveted the queues start forming early.



#### U FOR USP

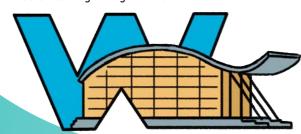
Are you an all-rounder with a passion for personal growth? The multidisciplinary University Scholars Programme (USP) might be for you. Broaden your horizons with course work that includes a fully-sponsored semester overseas and do fieldwork abroad in your path to becoming a socially-conscious leader. You can be a student of almost any discipline – whether science or the arts – to join this special programme that brings a strong liberal arts focus and diverse overseas experiences.

#### **V** FOR VIBE

From lush greenery and cute families of critters to furniture made from trees felled for campus development, and sustainable research, the NTU Smart Campus boasts an eco-friendly vibe that blends environmental responsibility with technology. As a testbed for smart urban services, NTU is ground zero for green solutions such as autonomous and electric transport, smart buildings made with sustainable materials and new methods of repurposing waste products. And as residents of NTU, we are the first to experience these.

#### W FOR THE WAVE

Speaking of eco-friendly buildings, The Wave, NTU's cavernous sports hall, sets the gold standard in sports complexes. Its playing surface can be configured to suit a variety of concurrent activities, such as 13 badminton matches or three basketball games. Even if you're just a spectator, stepping inside is a cool experience too, thanks to the heatinsulated sustainable wood used in its construction and game-changing air-conditioning technology that has cool air coming through its floor.



#### **X** FOR X-FACTOR

No one really knows what the future of jobs looks like. The rise of Al and automation might spell the end of some human roles, while others might be redefined. The advantage of an NTU education is it makes you future-proof by providing you with skills across different dimensions and experience working in multidisciplinary teams from your first year. You can also count on NTU's industry connections long after you graduate or even pivot to a new career path with certifications offered by NTU's Centre for Professional and Continuing Education that can be stacked towards a FlexiMasters certificate. FlexiMasters can be stacked towards a Master's degree.

#### Y FOR YOUNG UNIVERSITY

Since 2014, NTU has been ranked first in Quacquarelli Symonds' global ranking of universities under 50 years old. NTU's meteoric rise in the global league has also been captured in Times Higher Education's annual young varsity rankings, where NTU has occupied the top two spots. A prodigy in the world of elite universities that are typically centuries old, NTU is just like you. And that's why we believe in providing you with opportunities to make a name for yourself as soon as you enter NTU. With spirited researchers and promising young changemakers like you in the driver's seat, our passion for solving problems for a better world will take us even further.

#### **Z** FOR ZOOM

Innovation and agility are part of NTU's DNA and this translates to both our measures and mindsets. By embracing digital learning and online collaboration through applications like Teams and Zoom – well ahead of the COVID-19 outbreak – work and learning didn't come to a halt during pandemic lockdown restrictions. In fact, NTU's resilience amidst the COVID-19 pandemic won global plaudits at a summit in London.



ME CONTRACTOR

Call it FOMO but we think queues in NTU are worth checking out. From lining up for freebies during Freshmen Welcome Week to getting in on exam welfare pack giveaways and scoring NTU T-shirts - essential school wear - at HEY! augmented reality events, joining a queue usually lands you something that's worth the wait.

#### **R** FOR REP

NTU's premier engineering programme primes you for a career as a future CEO or CTO. After four and a half years, you'll graduate with two degrees – a Bachelor of Engineering Science and a Master of Science in Technology Management. Global and multidisciplinary experiences feature prominently, so apart from perks such as guaranteed stay in a hall with dedicated facilities for collaborative projects, you get to spend a year overseas at a partner university and as an intern. It's no surprise that in this environment, start-ups have emerged,

such as Whizz Mobility, the student team behind the familiar FoodBots on campus, developed in REP's own Makers Lab.

FY

# <u>A JAB</u> AT FAKE **NEWS**

It's easy to be persuaded by provocative prose, especially when presented in the echo chambers of social media. Studies from NTU have found that people who are more reliant on social media for their news are more likelv to be sceptical of COVID-19 vaccines. However. social

COVID-19

Vaccine

Injection Only

media users who can assess whether news is credible or not have more confidence in vaccines. To counter fake news on vaccines, NTU researchers suggest that governments and companies can be more transparent about vaccine safety to help ensure the correct information is conveved.

It all starts here.

#### MY RABBIT FRIEND Why do we classify dogs as pets

and cows as food? Seeking to find answers to this is an NTU researcher, who looked at how Singaporeans rated 16 animals - including rabbits, sharks and pigs – in terms of warmth and competence. The results suggest that people might make judgements on animals to justify how they treat those they dislike or consume as food. Whether or not we do this ourselves might provide some food for thought.

HEY!

SCAN THIS VISUAL

to bring this pet

rabbit to life

### **FIVE OF THE BEST**

Up top! NTU was ranked first in the world in five subjects by US News & World Report. The American media company placed NTU in pole position in Condensed Matter Physics, Energy and Fuels, Materials Science, Nanoscience & Nanotechnology and Physical Chemistry. It also named NTU runners up in Artificial Intelligence, Engineering and Electrical & Electronic Engineering, and third in Chemistry. Surely something to be proud of, considering 2,000 universities were ranked in the Best Global Universities list.

**WHID** 

Hi!



If you're visiting the Singapore Biennale, sail on over to The Viscous Sea, an immersive audio-visual installation created by NTU PhD student Ong Kian Peng. Based on his research on the Dead Sea while he was an artistin-residence in Jordan last year, Kian Peng's work features materials gathered from his trekking trips to rivers and valleys connected to the salt lake, and explores the effects of climate change and our relationship with nature.

# TOP FLIGHT OF COMPUTING

Students from the School of Computer Science & Engineering and the School of Electrical & Electronic Engineering emerged as runners-up in an international computing competition held in the American city of Dallas. The NTU team, which flew there to compete against HEY! teams from Switzerland, Germany, Taiwan and the USA, also won the Best Poster AR award. Well done!

#### Making an impact where We Belong

More than \$1 million was raised during the We Belong campaign last year. Beyond the dollars collected, the

OneNTU community came together in the spirit of service and volunteerism, such as by providing telehealth services and through food distribution and the donation of pre-loved laptops. We Belong returns from February to March 2023 with its three signature events - the Best Foot Forward run. NTU Service Week. and NTU Giving Day. Make a difference and sign up now!



# THE DARK SIDE OF A FACEBOOK

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It's human nature to compare our lives to those of others on social media, but it might become an unhealthy cycle, says an NTU prof. Facebook users who spend more time on the platform are more likely to feel that others have better lives than them, and are more likely to develop symptoms of depression as a result. This, in turn, increases their use of social media further. Don't fall into this trap, and remember that social media doesn't paint a full picture of someone's life.

THE RISE

**OF VIRTUAL** 

INFLUENCERS We've heard that AI is taking over our jobs. Now, our Al counterparts might be becoming more effective

influencers too. An NTU prof

sees them as safe choices compared to humans, who

may be involved in scandals.

Virtual influencers can also

be customised to meet

the needs of brands and

might have novel appeal to

consumers. The question is,

would you follow one?

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SCAN THIS VISUAL to take part in We Belona activities



/e Belon

your ideas and be the founder of the next start-up.

Gain

career skills, learn from top industry players.

It all starts here.

# MENTAL HEALTH MATTERS

First-year Chinese studies student and TV actress Oh Ling En portrays a bully in her latest drama, but in reality, the actress is the protector among her friends. Junn Loh listens in as she chats with NTU's new Associate Vice President (Wellbeing), Assoc Prof Vivien Huan, to discuss wellbeing issues her peers are facing

Ling En: Hello, Prof Huan, I'm in my first year at NTU, and have been wondering what avenues students have to seek help when facing a crisis or feeling depressed.

#### **Assoc Prof Vivien Huan:**

Hi, Ling En. There are several contact points. At the school level, there is a faculty member in charge of students. Known as the Associate Chair (Students), this person works closely with the school's student care manager, who tends to be the first one students go to when they need help. At the university level, we have the Peer Helping Programme that is under the ambit of the University Wellbeing Office. These helpers are your peers who have signed up as volunteers to lend a helping hand or a listening ear to those who need it.

At the same time, NTU has tutors who are trained in psychological first aid. These tutors are able to recognise symptoms related to mental health issues and render the level of help required of them. In the residential halls, we have residential mentors looking out for students who need help in different aspects, including those who are anxious about school or feeling unhappy.

L: Some students may find it intimidating to approach people with titles such as "Professor" or "Manager" for help, especially when they have mental health issues. They may feel embarrassed. V: We are quite heartened that most students today are more enlightened about mental health issues and less hesitant to reach out for guidance. For those who are shy, you can be assured that once you walk into the University Counselling Centre, there will be trained counsellors who will speak to you in a completely private and confidential environment. So, what are some common stressors for first-year students like you?

L: Some of my friends find the mandatory Interdisciplinary Collaborative Core (ICC) courses over and above their core discipline's coursework, a source of stress.

V: I see. Perhaps it's because your friends have yet to understand the benefits of the ICC courses. You can try encouraging them to change their perspective and see ICC through a different lens. It is a good platform for interacting with students from all over NTU. How often do you get to learn alongside others who major in disciplines that are vastly different from yours, whether science, humanities or business? Everyone sees the world differently and has different ways to solve problems. Take the opportunity you have through your ICC courses to get to know peers from other schools. You may be surprised with what you can learn from one another!

Oh Ling En First-year Chinese studies student L: Thanks for sharing your perspective! Another common source of stress is starting life in hall. What advice can you give students who are finding it difficult to adapt?

V: It's important to recognise that your hall is a community. It's like going camping, but for six months each time. When you go camping for a week, you may encounter unhappy things, but you just let it slide because you know it is only for a week. Six months living together with other people is a different matter altogether.

I'd encourage students to use the "newly acquired" freedom and independence as an opportunity to discover your own limits. What are some of your own trigger points that cause you to be unhappy? What do you like and not like? It's a process that requires you to develop self-awareness. Once you know yourself better, you will then know how to adapt to vour environment. Of course. participating in hall programmes that help you relax - like painting or cooking, for example – will enhance your wellbeing!

L: How would you teach students to learn to say "no", especially when they encounter uncomfortable situations in the hall? For example, being asked to drink to socialise.

V: Peer pressure is very real. When you are new to a place, it's normal to want to do things to fit in. What matters here is effective communication. Your facial expression, your tone and your choice of words are important when rejecting your friends. Instead of giving a straight-up "no", try being honest about it and say, "I'm really sorry. I have tried drinking before, but I found that I really don't take to alcohol at all." I find the young people of today quite openminded and are able to accept one another's differences quite easily. If they treasure you as a friend, they will respect your decisions. There might be a chance they leave you out of social events in future, but

it's a chance you must take. If they are your friends, they should understand and accept you for who you are.

L: Do you think students are inclined to suffer from depression these days?

V: People tend to use the word "depressed" quite commonly these days. You may feel anxious and lose sleep over your assignments, but that may not be depression.

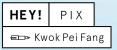
L: So how do we know if we are suffering from a depressive disorder?

V: You would need to be formally diagnosed by a professional in the field such as a psychiatrist or psychologist. For a start, you might want to talk to someone from our team at the University Wellbeing Office, where there are psychologists who can assess your mental health and follow up with the necessary interventions or treatment. We also have trained counsellors who are able to talk things through with you.

L: I'm quite curious about how you coped during your university days. Was it stressful back then?

V: Well, I enjoyed my undergraduate days very much. I went to university in Canada. I studied hard and felt stressed during the exam period, but I also had my fair share of fun. Each winter when the snow came, my friends and I would go up the mountains to do different activities like skiing, snowshoeing or tobogganing. When summer rolled around, we would go out on a boat and do some fishing. So, it was a good balance of studying and playing. I know students today tend to face higher levels of stress in school. but you also have greater access to different avenues of help and support compared to my time. So, spend your next few years in NTU meaningfully - study hard but also find time to engage in activities that will help you grow holistically as a person.

> To reach the University Counselling Centre, call 67904462.



# **BIG LITTLE** MOMENTS

Find your place in the sun together. What is campus life without friends, fun and some fresh air?

SCAN THIS PHOTO



focus on the

Split second of joy. SCAN THIS PHOTO







Tinker, maker, solder, pry. CA



My fairytale life.





Oh buoy, it's a splash bash.



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Time fries when you are having fun.

Love at first spike.



Great catch at the Inter-Hall Games.

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HEY! AR **SCAN THIS PHOTO** 

to dive in with the **NTU Swim Team** 

Westwe Best

.NT





# LEARNING THE ROPES WITH TRODUSTRY GAANTS

Internships at research labs set up on campus by NTU and big-name corporations help students find their passions and boost their career prospects

During classes, mechanical engineering undergraduate Rodney Manega came to enjoy learning about systems that prevent vehicle engines from overheating.

So when an internship opportunity opened in 2021 at a research laboratory set up by British engineering giant Rolls-Royce and NTU that worked on such electromechanical systems, he jumped at it.

While working on the systems during his five-month internship at the Rolls-Royce@NTU Corporate Laboratory, the then third-year NTU student discovered another passion – designing the systems themselves.

"I found what I loved to do and it made me want to work harder to secure a role as a mechanical design engineer after I graduate," says Rodney, 26, a Singaporean whose family hails from Tanzania.

Other NTU students who have done internships at the university's corp labs – government-funded research tie-ups between NTU and big-name industry partners – tell HEY! that their stints helped them to find areas of work that they are passionate about.

Pranshu Kharbanda, who interned at the Rolls-Royce@NTU Corp Lab for five months in 2020, says he developed a fondness for working on computational simulations that test the effectiveness of a thermal management system he and a colleague designed to help cool systems found in hybrid and electric aircraft.

"I never knew I had a passion for these simulations until I was exposed to such tasks and projects," says Pranshu. 22.



He graduated in 2022 with a degree in mechanical engineering and was offered a position at the Rolls-Royce@NTU Corp Lab as a research engineer – an offer he could not refuse as the role would let him continue working in the aviation sector and in research, his two loves.

NTU currently has seven corp labs with industry heavyweights – including Rolls-Royce, American technology giant HP and German multinational Continental. These companies tap the university's deep research capabilities to develop innovations for the world. According to NTU's Career & Attachment Office, there were more than 75 internship opportunities offered by these labs in 2022.

Other joint labs set up by NTU with major industry players – such as Schaeffler, Alibaba and L'Oréal – also offer internship opportunities to students.

#### A BOON TO STUDIES

Former interns say that the corp lab experience gave them a leg up in their studies. During her six-month internship with the HP-NTU Digital Manufacturing Corporate Lab in 2021, Liu Ruili helped to highlight findings from research papers, particularly on monitoring 3D printing processes to detect defects, which is relevant to the lab's work of improving 3D printing technologies.

The 23-year-old, who graduated with a mechanical engineering degree last year, learnt how to extract key information from academic research, which helped in the writing of her final-year project research paper.



In Rodney's case, he says that he used the skills he gleaned from his internship to design a machine more easily as part of a group project for a module he later took. If not for his experience, his group could have spent many more weeks on design work.

#### A CAREER BOOSTER

Apart from imparting industryrelevant skills, a corp lab stint also improves job prospects, say the former interns.

With the software skills gained from his internship at the Rolls-Royce-NTU lab, Pranshu observes: "I matched more job requirements and was able to expand my job search." He landed a few plum job offers and has come full circle after graduation with a full-time position at the corp lab.

Ruili says that the software skills she picked up from designing 3D models during her corp lab internship have been useful in her current work drafting visual plans of machine parts.

"At the HP-NTU lab, I also got a more in-depth understanding of how researchers conduct their experiments, which was very different from the lab work we did in class," adds Ruili, who is now a mechanical engineer at a multinational corporation.

#### **CUTTING-EDGE RESEARCH**

Hands-on experience working in up-and-coming fields like autonomous vehicles is another corp lab perk. This was so for Mehal Agarwal, 22, who interned for a year at the Continental-NTU Corp Lab in 2021. She graduated in 2021 with a degree in electrical and electronic engineering.

Artificial intelligence (AI) can help autonomous vehicles detect nearby objects, such as pedestrians and other vehicles, so that the driverless vehicles can, for example, avoid colliding into them. But this requires



training the system with many relevant images of the objects – a costly and time-consuming endeavour, especially if the images are manually annotated.

A program Mehal designed during her internship addressed this by automatically filtering and tagging images with relevant objects from a large database for further manual processing. Details such as the visibility of the objects in the images were also captured, thanks to additional functions she added to an existing tool.

#### CULTIVATING SOFT SKILLS

Beyond technical knowledge, Mehal, who is now a software developer in a research centre in Singapore, also picked up work-related soft skills when she interned at the Continental-NTU Corp Lab. She honed her communication and project management skills as she regularly updated her supervisors on the progress of her project.

Mr Sumit Sahoo, a senior programme manager at the Rolls-Royce@NTU Corp Lab, says that an internship at the lab allows students to gain insights into "how business needs and customer requirements support the research and development of new technologies and processes".

"The internship will also impart skills on managing stakeholders and expectations that are necessary for the smooth and successful translation of research into potential industrial applications," he adds.



Here's what some NTU students hope to accomplish in the new year. Are you like them, with plans, big or small, in the pipeline? Show us in a photo or video clip by tagging #NTUsg on Instagram

66 I'm hoping to learn how to

66 In my current overseas

internship, I'm looking

forward to executing the

for two key products, and

go-to-market strategy

honing my marketing skills and passion for

entrepreneurship.

YEAR 3, PUBLIC POLICY &

- Claire Lim

GLOBAL AFFAIRS

in my life.

balance my passion for dance

and school, which would enable

me to find the purpose of dance

YEAR 2, COMMUNICATION; NTU

CONTEMP{MINATED} CO-CAPTAIN

- Germaine Wong

99

with the intensity of training

🖘 Kai Emmanuel Kuah

HEY!

 I hope that in 2023, Daisy Dreams can maintain its growth trajectory in the local market and continue its expansion overseas at a sustainable rate with our unique product lines of preserved flowers.

- Jefferson Liew

**OWNER, DAISY DREAMS** 

YEAR 3. COMPUTER

SCIENCE; BRAND

INSPIRATION

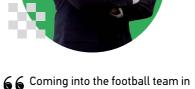
As we embark on the new year, one of my goals is to run a meaningful final-year project campaign on the topic of fast furniture to raise awareness of sustainability in the industry.

> - Nicolette Callie Wee YEAR 4, COMMUNICATION

> > This year, I aspire to broaden my network through my role in the club and gain useful insights from industry professionals that would help me to develop myself.

> > > a desta tot

- Muhammad Ismail Bin Nasser YEAR 2, BUSINESS; EXTERNAL RELATIONS DIRECTOR, BUSINESS ANALYTICS CLUB



6 Coming into the football team in my first year, I'm looking forward to forging new friendships and bonding closely with my teammates.

> - Naeemur Rahman Bin Akbar YEAR 1, ACCOUNTANCY; NTU MEN'S FOOTBALL VARSITY TEAM MEMBER



Kai never thought he would enjoy writing so much. He's usually seen playing around with a deck of cards or drinking *teh tarik* at his favorite prata place.

......



Makings of ARACECAR

Under the hood of the student-built car that lit up the track at the Shell Eco-marathon in Indonesia

From its design to its bones, every aspect of the Nanyang Venture 12 (NV12) is maximised for mileage. Hydrogen PEM fuel cells power the lightweight race car as it slices effortlessly through the air, thanks to its aerodynamic design. Slowing down generates more energy that propels it even further across the tarmac.

These engineering features secured two awards for the team behind NV12 in the Shell Eco-marathon, a global

competition that pits cars made by students in a contest of energy efficiency.

Designed from scratch by a multidisciplinary team of NTU students under the guidance of Assoc Prof Ng Heong Wah and Assoc Prof Holden Li, the NV12 is the 12th iteration of Nanyang Venture cars, a line of award-winning concept cars built for competition. Each version sees a team of NTU students – with skills from engineering to computing



#### and even art, design and media - taking their classroom knowledge and applying it in areas such as aerodynamics. traction and telemetry.

Docked for a year and a half in the garage, the car faced speed bumps before it hit the road.

"It took far longer than the previous creations because of disruptions caused by the pandemic," says Assoc Prof Ng, who has led Nanyang Venture teams since 2009. He added that factors such as the halting of academic activities, lab shutdowns and difficulties in sourcing and acquiring materials due to supply chain issues were some of the roadblocks they encountered.

The silver lining was that the team had more time to introduce innovations to the car, which paid off handsomely as they picked up awards for Vehicle Design and Technical Innovation, and a total of US\$2,000 in prize money.



**DIFFERENT PARTS OF THE CAR. MANY OF US HAD NO EXPERIENCE** BUILDING **ANY KIND OF VEHICLE, SO IT** WAS INCREDIBLY REWARDING **TO SEE OUR IDEAS COME TO** LIFE, PIECE BY PIECE, WITH THE **GUIDANCE OF OUR PROFESSORS.**"

- Final-year mechanical engineering student Kang Min Jin





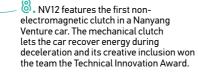








Circular "halo" LEDs produce brighter light with less energy.





# FROM **OVERSEAS** WITH LOVE

From its vibrant student life to its worldclass learning environment, NTU's cosmopolitan campus is a hit among exchange students from around the globe

> "I was surrounded by some of the brightest and most interesting people in the world, and I enjoyed the thought-provoking discussions and the lifelong friendships built. I had the opportunity to learn about cuttingedge technologies from world-class researchers. Great faculty members like Prof Yeong Wai Yee are very inspiring.

**Dimitris Boufidis** University of Sheffield, UK

# **SCAN THIS PHOTO**

HEY!

to join Jessica at one of her favourite spots on the NTU campus

> "Living on the NTU campus was one of the best decisions I've made! It was social, fun and convenient to live near Nanyang Business School. Back when I was here in 2019, I often had meals at Crescent Hall a short walk away. They had this delicious Thai food stall that I still dream about to this day...

Oda Hjelmeland BI Norwegian Business School, Norway

### HEY! INSIDER

🖙 Foo Jie Ying



"Some of my most memorable moments were going camping and sailing with the NTU Outdoor Adventure Club. This might sound funny, but I also really liked the McDonald's Buttermilk Crispy Chicken burger with the grilled pineapple rings in it – it's the perfect supper on campus. I have travelled to more than 20 countries, but never found something quite the same.

**Berkay Barlas** Koc University, Turkey

"Seeing the pride of the students at NTU, whether it's wearing a lanyard or an NTU club shirt, makes me proud to be an exchange student here. I've been lucky to experience the authentic university lifestyle and I really enjoy the student activities organised by my hall (such as games nights and volleyball) and making friends with both exchange and local students. I also love the architecture and am so lucky to have a class in The Hive! The view from up there is just spectacular.

Jessica Aldridge Curtin University, Australia





University life can be hectic on its own. but these NTU students juggle their own businesses on top of that. What's on the cards for these young bosses of fledgling start-ups? HEY! finds out

NILA

RAVICHANDRAN Chemical and Biomolecular Engineering, co-founder of Dawn Cups



A BIG THANK YOU TO the Minor in Entrepreneurship programme in NTU. Our instructors were invaluable in helping us get our start-up off the ground as we could consult them whenever we needed advice navigating tricky situations.

women in Singapore to find environmentally sustainable alternatives to menstrual pads. That was our motivation to start a menstrual cup business. Our menstrual cups are made of medical grade silicone. With proper care, they can last for up to 10 years, making them eco-

friendlier than single-use

pads or tampons.

It can be difficult for

Through Dawn Cups, we hope to empower women to learn more about their own bodies, help them make their periods more tolerable, and develop a supportive community where we can tackle the stigma surrounding periods together.

increase productivity. Through chatbots and other assessment tools that patients use at home, doctors can ascertain PRANAV if a patient needs a **GOVINDARAI** follow-up appointment Computer Science, without having to meet co-founder of the patient in person. We CyberLife AI are successfully piloting our app at Singapore's National University Hospital and another hospital has expressed interest in our product. Hopefully, by 2024, we

Our app helps hospitals

can get more hospitals in

Singapore on board and

also receive funding to

further develop our app.

A BIG THANK YOU TO NTUitive's

Venture Building Programme for granting us \$1,000 and for directing us to the right people to talk to.

**REUBEN NGIAU** food such as unsold fruit or meat into tasty Business, co-founder of Pawfoo

pet treats. We hope to establish Pawfoo in consumer's minds as a sustainable pet snack company, and are working on arowing our customer base by collaborating with brands that share our sustainability mindset. We also plan to set up booths at various fairs around Singapore.

My start-up turns surplus

A BIG THANK YOU TO the NTU CoLab4Good fund, which provided our company financial support for two years. The \$10,000 helped us purchase equipment to further improve our production of nutritious pet treats, such as parfaits for dogs.

**PHILEON GOH** 

MATTHIAS NGEO

co-founder of Forus Labs

Computer Science,

A BIG THANK YOU TO NTU'S Lean LaunchPad programme for kickstarting our entrepreneurship journey, as well as mentors from NTUitive, the university's innovation and enterprise company, for their support and advice. We also received financial help from Garage@EEE and NTUitive's Multi-Disciplinary Team Project fund.

If you need a secretary but can't afford one, why not use an app? We realised the potential of productivity apps to help people improve their lives and decided to create a whole suite of them under Forus Labs.

Our first app, TimeBloc, a scheduling app, achieved over 50,000 active monthly users in under a year. We sold it soon after that and are now working on Essential, a bundle of productivity and wellness apps that can help people to slow down and focus, create good daily habits and improve their mental wellbeing through journaling. Our hope is that Essential will surpass the record set by TimeBloc within the next three years.

Our goal is to help people take better care of their oral health, which is often overlooked. My co-founder and I **Renaissance Engineering** Programme, co-founder of developed an app powered by artificial intelligence that OraHub can identify potential oral health issues, such as plaque or tooth decay.

> We recently launched a line of electric toothbrushes and floss picks. With our app and oral care products, we hope to better educate university students on the importance of oral health. Further investments to improve our app and new oral care products are also in the pipeline.

> > **IASLYN MUK**

**Biological Sciences**, co-founder of Hey, You Got Mail!



It all began when my cofounders and I experimented with building our own customised mechanical keyboards. Word got out and we discovered that there was a growing demand for such services. That's what inspired us to begin our start-up offering customised electronic products to university students. We aspire to have our own manufacturing process for customised electronic goods in two years' time. It's crucial that we have good control over the level of customisation

we can provide.

A BIG THANK YOU TO all my peers who have tirelessly supported me from the start. My professors also provided great advice on marketing and entrepreneurship. NTU has opened many doors for us to receive start-up grants, such as those from NTUitive.

**CRYSTAL SIM** 

co-founder of Jynsei

Accountancy and Business,

A BIG THANK YOU TO NTU's social media platforms for highlighting what we do and increasing our visibility among the

NTU community.

The COVID-19 pandemic shone a light on social isolation, especially among the elderly. To accompany them through the circuit breaker, we thought about sending them personal handwritten cards. Every time a customer purchases a handmade card from us, we send another handwritten card to a senior citizen in a nursing home.

We plan to develop more programmes to encourage young people to care for the elderly around them, starting with their own neighbours. Apart from our regular crocheting and card-writing sessions, we have physical befriending events where volunteers can interact with the seniors by teaching them useful digital skills.





### HEY! AR SCAN THIS PHOTO for a front row seat at the show

#### You must live a charmed life.

Actually, when I was 7, I was diagnosed as dyslexic with attention-deficit disorder. This greatly affected my studies, especially hindering my ability to read and write Mandarin. Growing up, doing magic helped me to cope with my conditions. Learning magic helped me to focus and concentrate, and to socialise with others better.

#### Does magic still help you now?

It helps me in subliminal ways. I'm better at multi-tasking and more confident in my everyday interactions.

Mum's the word! Magicians don't reveal their secrets, but it was also your mother who taught you magic when you were small. Yes, I picked up magic when I was in diapers. My grandfather was a magician. He handed down the tricks to my uncle, who taught my mum. At 5 years old, I took the stage as my mum's assistant at magic shows she performed for my classmates. As I grew older, I started developing my own style and taught myself how to do modern tricks.

# And now, you're a professional magician yourself.

I became more serious in magic after watching the heist-thriller movie, *Now You See Me*. The film featured modern pieces of magic with cards, money and mentalism, and they made it look really cool. I also realised how relatable magic could be to others. After national service, I got acquainted with Alexander Yuen, who is my mentor and current manager.



Photos on this page courtesy of Kai Emmanuel Kuah

#### You don't seem to want to answer this question, so I've to ask again. Is the pay good?

For me, magic is not so much about the money, at least, not yet. But, it pays more than other part-time jobs I would be able to find.

# You've done a magic show for Google. Who else?

As a child and teen, I performed in school and at church carnivals and old folks' homes, especially during Christmas. It's always rewarding to see the surprise on people's faces – there's joy. In recent years, I've done work for Resorts World Sentosa, DSTA, Kwong Wai Shiu Hospital and the Ministry of Education. Some shows are even customised for the client.



### On average, how many shows do you do a month?

It depends, but generally three to four a month. I did virtual shows and workshops when COVID-19 restrictions were in full force.

### How has NTU helped you become a better illusionist?

My communication course keeps my creative ideas churning. I meet very interesting students in school – people with unique talents and



who really dare to pursue their dreams. It's very nice because I get to work with this diverse group on creative projects together, like making documentaries, films and advertising campaigns, which we have won awards for. Last year, we went to France where I got to learn from the world's top creatives and brands at the Cannes Lions International Festival of Creativity. My minor in theatre has also honed my performing skills.

#### What's your favourite magic trick?

I love manipulating objects like balls, cards and even roses. I make them appear, disappear and multiply, transforming in a manner that is theatrical.

#### You brought some magic tricks to New York last year when you were on exchange at the University of Rochester. Magic has always been a way for me to make new friends, and at the University of Rochester, people would ask me to perform for their friends every now and then. I also joined the campus magic club and taught its members sleight-ofhand tricks for a magic show.

#### Augmented reality (of the type used in HEY!, for example) builds bridges between dreams and reality, just like magic. Do you think the experiences are similar?

Any sufficiently advanced technology is indistinguishable from magic, said the prolific science fiction writer, Arthur C Clarke. I believe that augmented reality is a tool that we can use to create better experiences. Whilst magic relies on many physical aspects, both have the ultimate goal of achieving an immersive experience that goes beyond reality.

In his dapper magician getup on this issue's cover, HEY! student writer Kai Emmanuel Kuah looks every bit *not* the student he is. As the third-year communication major pulls fire out of thin air, we throw a few questions his way



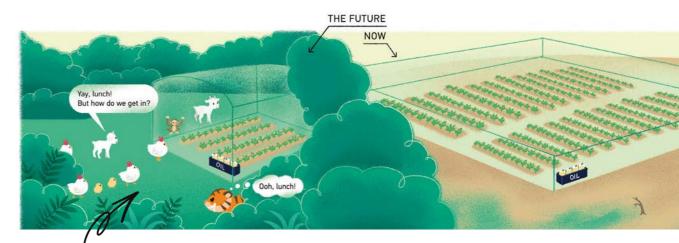
#### Turning real life into cartoons

### NOW

Using an algorithm based on machine learning to analyse faces, NTU scientists have created an easy way to morph real faces into different styles of cartoon characters, in the vein of those created by Disney, Pixar or Studio Ghibli. The end result is a very polished video that preserves the emotions and expressions of the actors' faces, and the chosen animation style can be further tweaked to suit your preferences.

#### FUTURE

Making full-length animated films may be easier in future, since there's no need to rely on complicated motion capture technology to capture real-life movements before animating a sequence. Filming real humans and post-processing the video to convert their faces – and in fact, the entire footage – into cartoons will also remove the need for tedious animation work. This technology has exciting applications in video training, online education, gaming and the entertainment industry.



#### Milking NOW

plants

more

for

oil

#### A new method of gene editing developed by NTU's biological scientists enables oil crops like peanut, rapeseed and soybean to accumulate more oil in their seeds, increasing oil yields by up to 18%. This could help meet the growing global demand for vegetable oil without the need to access more land for farming.

#### FUTURE

Deforestation causes loss of habitat for forest-dependent species and quickens climate change. To reduce deforestation and preserve our natural biodiversity, we need to find ways to use less land to grow more food. Plant oils are an essential part of the human diet and used extensively in food processing, so higher oil yields could prevent overfarming while ensuring everyone has enough to eat.



#### Growing NO

<u>salad</u> out of human hair Keratin found in human hair and chicken feathers can be extracted to create a nutritious and biodegradable sponge that can help hydroponic farms grow vegetables faster. This new type of sponge could replace the ones currently used in urban farms, which are typically made from fossil fuels and are nonbiodegradable.

#### FUTURE

Having urban farms close to communities in the city reduces emissions and ensures a sustainable supply of healthy fruits and vegetables. With hair salons present everywhere, it could be a reality that human hair becomes a key source of keratin in sponges used to grow our favourite vegetables, from lettuce to bak choy. HEY! AR SCAN THIS ILLUSTRATION to see how your hair can help urban farming



# <u>SEEING</u> <u>NTU IN A</u> <u>NEW LIGHT</u> <u>AFTER MY</u> <u>OVERSEAS</u> <u>EXCHANGE</u>

My four-month exchange in the United States was an eye-opening experience. I've taken home many precious memories, but the time away from home also made me miss what we have in Singapore.

Here are some things about NTU I missed when I was at the University of Texas in Austin, and what I miss about UT Austin now that I'm back.

# Nothing bea<mark>ts our m</mark>akan culture

The food in Austin is mouth-wateringly good, and the abundance of Tex-Mex (Texas-Mexican food) options are to die for. Most of the food choices at my host university are fast food chains found around and on campus, such as Chipotle and Panda Express. But one thing I truly missed was the food court-style canteens we have here in NTU, with much more variety and a communal eating experience. Instead of iced milo or teh peng, we had to find substitutes in iced coffee or chocolate drinks. There was also no supper culture there, and I found myself constantly seeking out my favourite familiar food - roti prata and dim sum - for comfort late at night.



HEY! AR

SCAN THIS PHOTO for snippets of Bernadette's unforgettable experience



#### THREE REASONS NOT TO MISS THE CHANCE TO GO ON EXCHANGE

• WHAT BETTER WAY TO LEARN A COUNTRY'S CULTURE THAN TO LIVE THERE FOR A SEMESTER? The few months spent in a foreign country is the perfect chance to meet new people, try new food and explore the sights and sounds abroad.

THERE ARE CLUBS AND ORGANISATIONS OR CLASSES IN YOUR HOST UNIVERSITY THAT YOU WON'T FIND IN NTU. These are great opportunities to step out of your comfort zone. I joined a student publication to write stories about Austin's subcultures, and got to learn from other aspiring journalists.

 LIVING ALONE SO FAR AWAY FROM HOME CAN HELP YOU HONE IMPORTANT LIFE SKILLS. From improving your cooking to better managing your finances, exchange is more than just about a new university experience.

#### You have to stop telling your friends: "It's not that far, we can just walk!"

UT Austin's campus is only slightly smaller than NTU's campus. In NTU, we frequently make our way around by walking or taking the campus buses. Being part of our garden city also means there is more greenery and countless sheltered strolling spots in NTU. At UT Austin, there are no campus buses. Some students choose to bike, others drive, and a few take the Lime scooter, an electric scooter that can be rented in the city. Most, however, simply walk around campus. The bright side? Easily clocking your daily 10k steps with an enjoyable stroll when the weather is cooler. The not so fantastic side? The raging heatwave in Texas during the first half of the second semester, from August to well into October.

# Uniq<mark>ue campus v</mark>ibes

There have been numerous occasions when I feel going on exchange offers the best of both worlds – of many worlds, in fact. In Austin, holidays like Halloween are widely celebrated, so much so that the festival is fondly dubbed "Halloweekend". Celebrations begin from as early as Thursday night and last the entire weekend. Numerous university organisations and clubs also have their own mini parties, welcoming anyone who wants to join in the fun. I have seen students get creative with their costumes when it comes to interpreting party themes, from modernised witch outfits to DIY character costumes. During football season, students spend their weekends cheering for the varsity team at games and celebrating the wins.

In NTU, we also celebrate holidays such as Halloween, and my school marks the new semester with "Homecoming". There are usually free treats on campus and decorations all around. Another special event we have at the Wee Kim Wee school is theme week, where we get creative and dress up according to the daily themes.

Studying abroad has been an enriching and rewarding experience. Not only did I have an exciting cultural immersion, I also built meaningful friendships with people from all around the world. I got to take interesting courses like True Crime Podcast, have my first taste of Tex-Mex food, and experience life as a student in Austin! Still, nothing beats home.



Bernadette loves storytelling, from books to films to documentaries. In her free time, she hunts for the best *teh peng* in town.



Jack of all clubs.

or master of some?

NTU's CCAs are mostly sports, arts

or interest group focused. Here,

we can join many without needing

to pay much, if at all, because the

we can explore different passions

is something I really appreciate.

In Austin, there's a big "Greek life"

culture instead. There are more than

their own chapter houses off campus.

The bigger and more prestigious clubs

and organisations require you to pay a

membership fee, ranging from a few

hundred dollars to almost a thousand

per semester!

30 fraternities and sororities, with

and try new things in school, which

programmes and activities are mostly

funded by the university. This means

# CALL OF the

NTU isn't just home to us, but also to nearly 370 wildlife species, including endangered animals. More recently, otters have brought their growing families here. Our campus in nature continues to surprise and delight us, judging by the many photos posted on social media by the campus community and visitors alike.

Take a look around to see what else has been spotted at NTU's beautiful garden campus and scan these photos with the NTU HEY! AR app to hear some of them. Sunda Scops Owl

Life's a hoot with this "prof".

See you on the otter side.

Smooth-coated Otters

Main photo: Ivan Ya

32



# Combine

SCAN THIS

different perspectives in interdisciplinary teams to find a good solution.



Time for a break. This day's been bananas!

Long-tailed Macague

HEY! AR SCAN THIS VISUAL for a chance to win this pair of HUAWEI FreeBuds SE (worth \$88) if you correctly identify this animal by its call

Grey Heron

DGumert

l can be your heron, baby. SCAN THIS

Grunt work ain't boaring.

🛿 Wild Boars 🕈

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16-INCH LAPTOP (WORTH \$2,298) HUAWEI MateBook 16s

# **OVER 100** FABULOUS PRIZES

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AR app on your mobile device to do a survey on HEY! magazine and stand to win a prize of your choice in our survey lucky draw. Good luck!

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nou

Starbucks and Coffee Bean

gift cards

Exclusive Lyon lanyard

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TONY Robbins

PETER Mallouk

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