AN AUGMENTED REALITY MAGAZINE

VOL. 57 ~~ MAR - APR '24

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Tan Zi Jie, Derek Rodriguez

NTU'S GOT TALENT

BRIGHT, BOLD & AMBITIOUS

They've bagged prestigious sporting awards, published their own poems and launched startups. Meet students from NTU's first batch of scholars selected for their non-academic talents, and see how they're breaking boundaries in sports, sustainability, the arts and more





NTU'S GOT TALENT

IS THE NTU TALENT SCHOLARSHIP FOR YOU?

Success doesn't just mean stellar grades. Recognising this, NTU's newest scholarship celebrates strengths in diverse fields, whether you're an athlete, an entrepreneur, a budding artist or a community leader.

Open to current and prospective students, the annual scholarship comes with perks such as tuition fee coverage, allowances for living and accommodation, as well as a $5,000 grant that can be used towards nurturing your talent.

All talent scholars will join the **Student Talent Development Programme** at the university to be equipped with skills to make an even greater impact in the areas they are passionate about. The programme helps them realise their potential as tech disruptors, eco champions, innovators, entrepreneurs, wellbeing and health advocates, and culture and society specialists.

Got a talent? Look out for the next application window in June.



HEY! AR
SCAN THIS PHOTO to find out how Mitra started ChangeX

Photo: Hanafi Ramdan

AI'VE GOT TO SAVE THE EARTH

MITRA SACHITHANANTHAN
YEAR 4, COMPUTER ENGINEERING WITH A 2ND MAJOR IN BUSINESS

If he were to be a superhero, Mitra Sachithananthan would be Captain Planet.

"In 10 years, I hope that a newspaper headline will read 'How Singapore became the zero food waste capital of the world' and mention how other countries are following our lead," the computer engineering student says.

Mitra leads startup ChangeX with other NTU students to save the earth with tech. To tackle the problem of food waste, the team went to restaurants to survey their end-to-end processes and learnt that they needed help to make data-driven decisions that would optimise food inventory management and reduce wastage. ChangeX is developing PanTree, an app that uses artificial intelligence (AI) to address this issue.

"Based on a restaurant's data, we use machine learning to forecast how much food it should buy and cook in a week, to cut down on leftovers. We predict when items in the inventory are at risk of expiring before being sold or consumed. For example, if cream, mushrooms and rosemary are about to expire, the app suggests to the chefs that they make mushroom soup," he explains.

This refreshing idea netted ChangeX up to $45,000 in grants from DBS Foundation, NTU's CoLab4Good Fund and the College of Computing & Data Science's innovation lab. The team aims to launch PanTree this year.

Green beginnings

"I spent my childhood in Singapore hiking, kayaking and painting flowers and animals. Mother Nature is close to my heart, so I want to inspire and enable people and organisations to take up sustainable practices," Mitra says. His passion also led him to become the NTU Students' Union's first Sustainability Executive in his third year in NTU, rallying various parties to reduce energy consumption and waste on campus.

"To me, the key to sustainability is technology. It's the most impactful and cost-efficient way to change how we do things and reduce carbon emissions and waste. That's why I decided to study computer engineering and start ChangeX," Mitra shares.

Mitra plans to use the $5,000 grant from the NTU Talent Scholarship to drive meaningful impact in the green space.

He says: "NTU has so much talent in its students, faculty and staff. What we need to do is to bring willing hearts and minds, knowledge partners and financial powers together to roll out tangible solutions to environmental problems. We must empower our people to create a community-led green revolution."



Visual: DALL-E

HEY! tapped DALL-E for a creative interpretation of Singapore as a "zero food waste capital" that could materialise with the help of Mitra's startup, ChangeX.



Mitra (far left) is co-founder of ChangeX, a startup that uses AI to reduce food waste. His team includes NTU students, as well as a recent graduate, who bring diverse expertise to the business, such as in AI, business, accountancy, computer science, environmental science and sociology.

Derek Rodriguez

NTU'S GOT TALENT

THESPIAN



HEY! AR
SCAN THIS PHOTO to find out who Ling En's dream co-star is

Ling En at Star Awards 2023, where she was a nominee for Most Popular Rising Star. She was up for the same category in this year's awards.

FROM CHILD ACTRESS TO PSYCHOLOGY STUDENT

OH LING EN
YEAR 2, PSYCHOLOGY

Despite acting since the age of four and recently as a bully in local Mandarin TV thriller *Dark Angel*, freelance actress Oh Ling En gets stage fright when she speaks in public at times. In fact, she says her real-life personality is very different from a browbeater's.

But the 21-year-old psychology student has found many opportunities at NTU to help her hone her oratory skills and build her confidence, which will be a boon to her acting aspirations.

"You may think I'm confident because I act, but that's not always true," says Ling En, who has acted alongside popular and seasoned Singapore TV stars like Tay Ping Hui, Chen Liping and Rui En.

"Since the camera has been trained on me as a child, I get self-conscious and think that people are watching me, which is obviously not the case. I'm learning more about it now as a psychology student," she laughs.



Veteran star Zoe Tay patiently guided Ling En, who played her character's stepdaughter in crime drama *Devotion*. The pair reunited on the silver screen in *Dark Angel*, a show that aired in 2022.

But being able to present in front of a large group of people for many projects in her NTU modules has helped her to build her public speaking skills and learn how to calm her nerves.

The NTU Talent Scholar, who won Mediacorp's Young Talent Award twice, when she was 10 and 11, wants to give a voice to causes through roles like that of the "nasty bully" she played in the *Dark Angel* TV series.

"If someone mentions that they enjoyed my performance as a bully, I take the opportunity to advocate against bullying instead. In the show, my character didn't have a good ending; that speaks louder than words," she says, adding that she would relish roles that champion disadvantaged communities or people with special needs.



Ling En, 8, and Hong Kong star Jessica Hsuan on the set of fantasy television series *Bountiful Blessings*.

Behind the camera, the prodigy found encouragement from veteran Mediacorp drama co-stars. "Zoe Tay and Tay Ping Hui were very patient and kind. They would guide me gently even though I took a long time to get my lines out. As I grew older, I became more interested in acting and saw them as my role models," says Ling En with a smile.

From reel life to real life

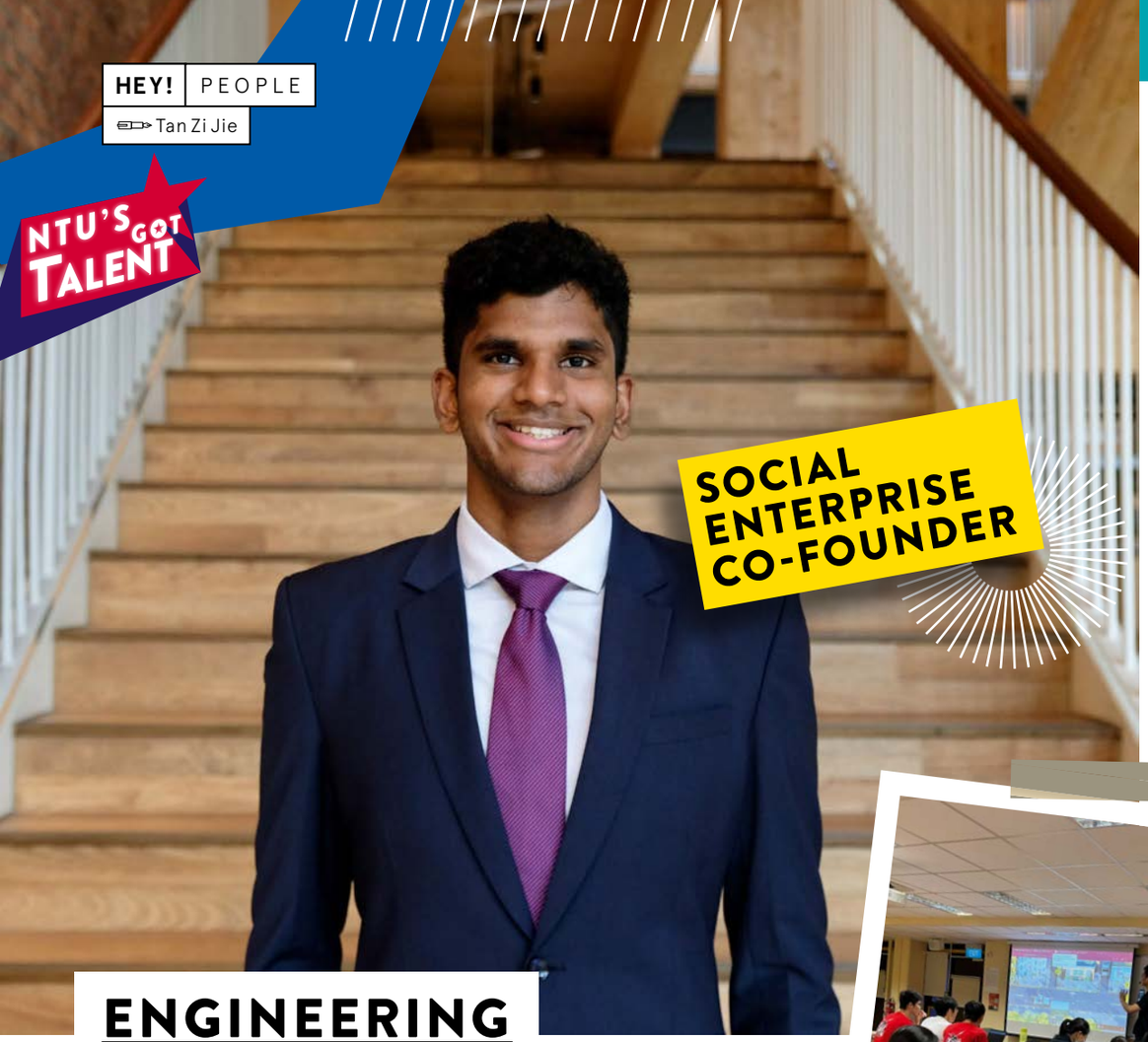
Acting has made her a better student too. "Ironically, I do better in my studies when I'm busier. I have learnt to balance my time between work, school and social life pretty well. If I have schoolwork to get to, I'll prioritise that," she says.

NTU has also opened doors to opportunities beyond acting. She has been an intern producer at SPH Media, where she got to, among other things, edit and write scripts for videos on social media.

She also embarked on an Undergraduate Research Experience on CAmpus (URECA) project at the Wee Kim Wee School of Communication & Information, where she facilitated discussions at workshops to get insights from participants that were used to develop a telehealth service.

Ling En considers making friends from classes and in hall the highlights of her university experience so far. The former resident of Tanjong Hall raves about the warm, communal vibes from NTU's halls, which she witnessed firsthand even before joining the university.

"My brother studied at Nanyang Business School when I was younger. My family would sometimes pick him up from Hall 8, and we'd soak in the vibrant environment. I wanted to follow in his footsteps, so I enrolled in NTU. He has graduated but comes back to coach his hall's cheerleading team."



ENGINEERING CHANGE WITH GAMES

SRICHARAN BALASUBRAMANIAN
YEAR 1, RENAISSANCE ENGINEERING PROGRAMME

With 30 people, you might be able to help vulnerable residents in several housing estates. But what if you could galvanise hundreds or even thousands of volunteers instead? First-year NTU student Sricharan Balasubramanian, also known as Sri, is doing just that through a new startup launched last year.

The inspiration for the endeavour dates back to 2020 during the COVID-19 pandemic, when an 18-year-old Sri started a youth volunteer group with his friend, Harrison Chong, to deliver meals, clean homes and even tutor vulnerable groups.

They led a core team of 30 to mobilise over 200 volunteers to raise more than $120,000 to support people at a shelter in partnership with a social service agency.

But juggling community work with International Baccalaureate diploma exams and then National Service soon became difficult, which limited the amount of aid they could render.

Sri, who describes himself as a problem-solving engineer, searched for a more sustainable way to create greater community impact with Harrison.



Secondary school students learn about social and environmental issues through interactive workshops and virtual games run by Sri's social enterprise, Jalan Journey.

A kinder metaverse
They hit upon the idea of starting an edutech social enterprise that would use fun, gamified worlds to teach young people about social issues. The aim was to mobilise youth to uplift the less fortunate in society. This idea won seed funding of $51,000 from the National Youth Council's Youth Action Challenge.

Sri and Harrison launched Jalan Journey last year. The startup runs interactive workshops for secondary school students to learn about environmental issues and social inequality. By playing "games" on recycling, food waste and textile waste in the Jalan Journey world, students can see for themselves how their choices, such as buying fast fashion, can turn a lively city into a polluted wasteland.

At the same time, Jalan Journey staff, mostly youth in university, facilitate in-class discussions and the students can choose to volunteer with local charities afterwards.

Just one year in, the social enterprise has reached out to over 2,000 secondary school students here and become profitable. Sri leads a team of 15, including two other NTU students, in product development, operations and more. He plans to expand Jalan Journey into Malaysia and the United States next.

Engineering social good
Growing up, Sri spent many afternoons taking apart old computers with his father, a computer scientist by training.

"Since I liked problem-solving, I was certain engineering was the way to go. But every engineering specialisation seems interesting. I've been into electromagnetics and mechanics since secondary school, and my father has nurtured my passion in computing," he shares.

So he applied for NTU's Renaissance Engineering Programme (REP), attracted by its unique first-year engineering foundation programme that exposes students to six engineering fields, including civil, environmental and materials engineering. Having explored the different areas in his course, Sri plans to specialise in computer engineering from his second year.

"Besides engineering, I love learning about business and leadership, which is built into REP's multidisciplinary programme. We come up with engineering solutions to real problems and create a positive impact on society. This really resonates with me," Sri says.

"Being able to pick the sharp minds of the best faculty in NTU has also been a great source of inspiration and motivation," Sri adds. He cites how his business management lecturer, Dr Kumaran Rajaram, generously advises him on change management and leadership challenges he encounters in Jalan Journey.

Keen to share what he has learnt, Sri spoke about his entrepreneurial journey at the United Nations Social Forum in Geneva last year with the support of the NTU Entrepreneurship Academy. He is also active in NTU's business case competition club and other school co-curricular activities.

Being a recipient of the NTU Talent Scholarship is affirmation that he's on the right track, and he is now exploring how to use the talent grant to take his dream higher.

"Building a grassroots youth community and now a social enterprise has given me the courage to be audaciously ambitious. I believe that everything is possible if we think deeply, plan well and convert our goals into actionable steps," he says.



HEY! AR
SCAN THIS VISUAL to see how Sri's startup teaches teenagers through games

NTU'S GOT TALENT

HEY! AR
SCAN THIS PHOTO
to see Jania's swift turns and tilts

SAILING MEDALLIST

SETTING HER SAILS FOR SUCCESS

JANIA ANG
YEAR 1, SPORT SCIENCE & MANAGEMENT

For sailor Jania Ang, no sacrifice is too big for your calling.

Which is why she puts in 15 hours of weights, cardio and water training a week. And spent nearly five months away from home last year, mastering her craft at sailing camps and competitions all over the world.

Last year, the NTU Talent Scholar won a Southeast Asian (SEA) Games silver medal and another silver at a sailing competition in China.

Her path to success has come with resistance; she has been passed over for competitions and faced funding difficulties.

But she says, stoically: "I don't believe that to excel in sport, you have to only do things you're naturally gifted in. Preparation and goal setting, execution, adaptability, as well as hard work and discipline, count too."

Staying afloat
Balancing sailing, studying and time with family and friends is a struggle, but Jania is determined to achieve her dreams, which include competing in the Asian Games and, ultimately, the Olympics.

"I'm very clear on my priorities and manage my time accordingly. So I don't feel like I'm missing out if I can't attend an event I want to go to, because I know my goals are more important in the long term. I'm also lucky to have a support system to help me through tough times," she says.


Photo: EurILCA

Raised in a sporty family, Jania started sailing when she joined her primary school's sailing club, as did her twin sister and three brothers. While her siblings have moved on to different interests, Jania continues to chart her course in sailing.

The NTU Talent Scholarship will cover her tuition fees and help with living and accommodation expenses, while the talent grant will help defray the cost of training and competing, which can be hefty for a sport like sailing.

Decoding movement
Being a sport science & management student at NTU has given Jania opportunities to learn more about the scientific aspects of sport, knowledge she can apply if she becomes a coach.

"I like to break things down using science. If you're coaching, you can't just tell a younger athlete to *feel* the movement. You have to cue specific words and phrases that mimic the motion needed," she explains.


Photo: Asian Sailing Federation

In her NTU course, she has covered a spectrum of sport science topics such as anatomy and physiology, physical growth and motor development, and more.

She now looks forward to studying biomechanics, the science of how body parts work together in motion. In junior college, she had enjoyed learning about kinematics, a topic related to biomechanics, in her physics classes.

Jania explains that biomechanics combines mathematical modelling, computer simulations and measurements of muscle movement to explain how a tennis swing, for example, can be executed to prevent injury and maximise sport performance.

She is keen to use what she has learnt in her classes to optimise her own performance and that of others.

In fact, she sees her mission as "helping others discover the joy of life through sports such as sailing."

"Everyone's journey and growth deserve recognition and support, regardless of their performance," she adds.

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NTU'S GOT TALENT

HEY! AR
SCAN THIS PHOTO to see Yu Xuan in action



Photo: Singapore National Olympic Council

GLOBAL WUSHU CHAMPION

THE FILMMAKER WHO 'FIGHTS'

TAY YU XUAN
YEAR 2, COMMUNICATION STUDIES

With gleaming sword in hand and graceful yet precise jump kicks, communication student and wushu exponent Tay Yu Xuan clinched a silver medal at his first Southeast Asian (SEA) Games outing last year.

But the road to victory is tough. It can take the 22-year-old five to six years to perfect just one move. Now, Yu Xuan hopes to use the filmmaking skills he learns in NTU to tell the stories of sports people like him.

"There are many struggles and interesting experiences in the sports community that I want to share through films and videos," says Yu Xuan of combining his twin passions of filmmaking and sports.

He is also thinking of using the $5,000 grant he gets as an NTU Talent Scholar to promote wushu among the less fortunate in Singapore.

Yu Xuan is an expert in taijiquan, a Chinese martial art that combines languid motions with fast, explosive moves, as well as in taijijian, which incorporates a double-edged sword into taijiquan moves.

Training is hard, with nightly sessions after school and sometimes on Saturdays. On weekdays, he returns to his Hall 11 room only around midnight.

As a spirited boy who loved watching *Karate Kid* movies, he took up the sport at the age of seven after being wowed by the flying kicks his primary school seniors pulled off during Chinese New Year celebrations.

Grit and taiji glory

"You may think taijiquan is a sport for the elderly, but wushu has really taught me discipline, patience and perseverance," he explains. "There have been many occasions when I wasn't selected for competitions. Instead of being upset or giving up, I'm patient with myself and continue to train consistently, so I'd be ready if an opportunity comes along."

And come along it has. Aside from his SEA Games silver medal win last year for taijiquan and taijijian, Yu Xuan is ranked world number two for taijijian in the World Wushu Championships.

He is now eyeing the taijijian world number one title in the 2025 World Wushu Championships. He came very close to winning last year; his competition scores were tied with the champion, but he ranked second after tiebreaker rules were applied.

Besides making him stronger, contemporary taiji fuels his creativity. For competitions, he carefully chooses music to go with eye-catching moves that start gently but speed up to wow audiences and include powerful punches, meticulously timed jumps and dazzling spinning kicks.

Kickin' it behind the camera

When he's in school, the action happens behind Yu Xuan's video camera. The aspiring filmmaker started making videos while in Victoria Junior College. He recalls a pivotal moment that led him to study communication in NTU.

He says: "I went for a university visit, and at the Wee Kim Wee School of Communication & Information, I came across magazines from the school's Going Overseas For Advanced Reporting (GO-FAR) practicum, filled with articles from Bhutan and South Korea. The stories were so interesting that this memory stuck with me when I was picking my major."

Whether it's wushu choreography or video editing, both test Yu Xuan's creativity, pushing him to create a unique experience.

The second-year student says: "I remember my parents tearing up when I got my first international gold medal in wushu when I was 18, and how my friends' eyes welled up after watching a mini vlog I made for our overseas volunteering trip. This feeling of accomplishment never gets old. It drives me to continue doing what I do, even if I have to endure late nights and miss out on my social life."

SEA Games silver medallist and communication undergrad Yu Xuan filming a documentary with classmates at Sentosa.

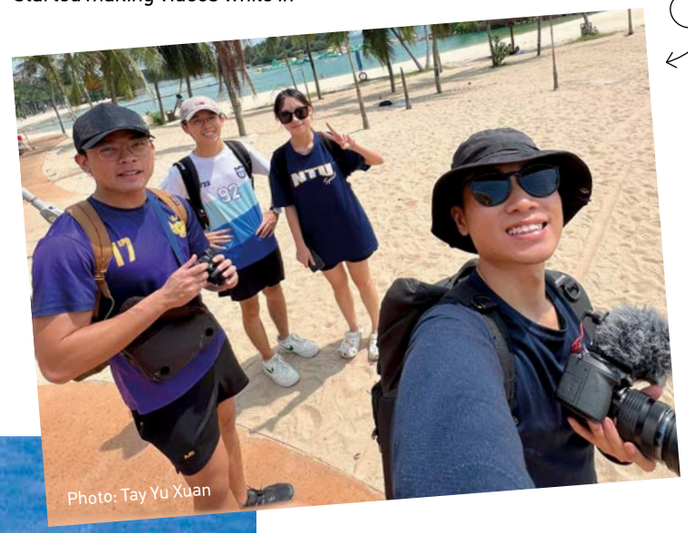


Photo: Tay Yu Xuan



CINEMA COMMUNITY BUILDER

Daryl created a communal space for creatives to use on a pay-as-you-wish basis.

HE STARTED A HUB FOR CREATIVES

DARYL CHEONG
YEAR 3, ENGLISH

Passion for filmmaking overflows in a Pearl's Hill Terrace studio in Chinatown decked with comfy couches, movie posters and literary classics. Daryl Cheong, 24, created this cosy co-working space to spread his love for film and help young creatives like him chase their moviemaking dreams.

Using funds mainly from teaching tuition, the third-year student and budding filmmaker shells out about $2,000 a month to lease the space. Despite its modest size (about as large as a two-room flat), the area has a film-screening room, an outdoor lounge and two meeting areas for creative folks to use and pay as they wish.

On why he created this shared space, the NTU Talent Scholar explains that filmmaking is a group effort so he uses the space to nurture other young creatives whom he can work with in future.

"I'm not cultivating such connections 'selflessly'. I know that to do well in the industry, we have to do it together," he adds.

Through the NTU Film Society, which he leads as its president, Daryl teaches students low-budget filmmaking and film criticism. He also runs monthly movie screenings, writes film reviews, and even acts.

In 2023, he stepped up as the co-festival director of the NTU student-led Perspectives Film Festival after serving as its head of content creation the year before.

Crafting cinematic connections
A theatre student in junior college, Daryl fell in love with film after joining a film critic programme at 18. Although he dreams of bringing his own and Southeast Asian works to an international audience, he doesn't actually study film at NTU.

Instead, the English major studies subjects to complement his self-taught skills in moviemaking. He takes a minor in creative writing "to tell better stories".

But since filmmaking is not just an artform but also a business, he did a second minor in entrepreneurship "for the business skills to manage film projects and start my own production company". He even takes a third minor in modern languages, studying Thai and Tamil, to support his plan to make in-roads in regional co-productions.

Full of praise for him, NTU film lecturer Ms Nikki Draper says that as co-festival director of the Perspectives Film Festival, Daryl expanded its mission to educate and build a community, leading over 20 students "with good humour, compassion and boundless energy".

"In my 24 years at NTU, I have met only a few students who deeply engage with the entire film community like he does," she says.

Daryl's humble background is the source of his drive. "I'm from a low-income family and must have a firm foot in the industry before I graduate, to support my retired parents and relatives," he says, adding that he appreciates the assistance from the NTU Talent Scholarship.

"The film industry can be cold and competitive," he adds. "But there's so much hope and optimism when we support each other. I want us to 'make it' together."



PUBLISHED POET

Charis' poetry compilation *Flinch & Air*, published in her first year in NTU, is available worldwide in bookstores and online.

SHARING HOPE THROUGH POEMS

CHARIS LIANG
YEAR 3, LINGUISTICS & MULTILINGUAL STUDIES AND ENGLISH

Charis Liang published her poetry compilation internationally when she was just a freshman at NTU. Titled *Flinch & Air* for its playful and almost metaphysical quality, the slim volume carries 21 poems about the experiences of Asian women and their stories.

A pamphlet like this typically acts as an emerging poet's calling card, before a full collection of works (usually of more than 30 poems) is debuted.

"Charis' poems have a compelling and distinctive voice and style. In my poetry class, her works were similar to that of an accomplished poet, but she was humble and eager to hone them further," says renowned poet Dr Boey Kim Cheng, who taught her in NTU.

Words that mend
As a teen, Charis stumbled into poetry sharing anonymous verses on Tumblr. Heartened by online reposts and encouraged by her teacher, she started submitting pieces to journals and winning competitions.

She writes under her pen name Laura Jane Lee, as it has a nice ring to it and all her favourite poets have three-part names.

Having suffered from depression, Charis wants to help others heal through poetry.

She shares: "I was going through hard times. The turning point came when I read *Wild Geese* by Mary Oliver. I felt seen by that poem. I want my art to enter the lives of others in this same deep, quiet and personal way."

To hone her craft, she enrolled in NTU's humanities double major programme and pursued a creative writing minor. Through modules like children's literature and non-fiction, she expanded her writing to multiple genres.

Searching for home
Moved by Dr Boey's essays on his experience as a migrant writer, the Hong Kong native and Singapore immigrant pitched an Undergraduate Research Experience on CAmpus (URECA) project to him. Under URECA, where students dive into research while mentored by faculty, she composed several poems on migration.

Her work, *On This Earth We Have No Abiding Home*, was one of six poems shortlisted from entries from 68 countries for a prestigious writing prize. Thanks to an NTU grant, she flew to England last year to perform it.

At the ceremony, Charis networked with literary experts. A connection made there may just come in handy as she continues to pitch her full poetry collection of about 35 poems to agents and publishers.

Besides penning poems, Charis hustles as an advertising writer, a translator and a voiceover artist to support herself. All while running NTU poetry workshops and leading a Singapore literature youth magazine.

With the NTU Talent Scholarship covering her tuition fees and other expenses, she can focus more on poetry. The $5,000 talent grant lets her attend writing conferences and poetry festivals, including one in Berlin in July.

Charis adds: "I really want to come back to NTU to teach in the future. This is where I've had the space to develop my craft. I've become a better writer from my classes and the creative writing community here."

Coen Sim | Don Tan

NTU'S GOT TALENT



SHE'S GRACED A GIGANTIC SPOTIFY BILLBOARD AD IN NEW YORK.

SHE'S SUNG WITH CANADIAN POP DUO CRASH ADAMS IN A VIRAL VIDEO THAT HAS BEEN VIEWED OVER 63 MILLION TIMES.

SHE IS A SINGER-SONGWRITER WHO HAS WRITTEN, RECORDED AND PERFORMED 14 ORIGINAL SONGS BEFORE HER 23RD BIRTHDAY.

HERE COMES SHAZZA

Meet rising local singer-songwriter Shareefa Aminah, also known as shazza, who tells HEY! what it's like to juggle music with her studies at NTU

SHE GOT A SHOUTOUT FROM BRITISH BAND COLDPLAY DURING THEIR SINGAPORE TOUR THIS YEAR.

SHE IS SHAREEFA AMINAH, STAGE NAME SHAZZA.

AND SHE IS AN NTU COMMUNICATION STUDENT.

SO HOW DID IT ALL BEGIN?

For the only daughter of three children – and one of "many creatives" at home – family isn't just a source of love, but also a wealth of artistic talent and wisdom.

Raised around an eclectic mix of music from Norah Jones to the Black Eyed Peas, Shareefa started writing songs at 11.

Her passion grew as she experimented with songwriting and singing at gigs. She decided to pursue music professionally after graduating from Ngee Ann Polytechnic in 2022.

"I knew I needed to give this music dream a proper shot and my parents were supportive, pushing me to take a leap of faith," she says.

Shareefa released *Pity Party*, her first single, complete with a marketing campaign at the end of her first year in NTU.

"With the guidance of my dad, who is a creative director, and the skills I gained from my NTU communication classes and my mass communication diploma course, I created press kits, and wrote and sent out news releases. We even made an original music video featuring me and my friends for the song," she recalls.

By early 2023, she had signed on with local record label Cross Ratio Entertainment. Within the year – and multiple hits later – the singer-songwriter held her first concert (with a ten-piece band, no less) at Esplanade – Theatres on the Bay.



Photo: shazza

SHAZZA GOT A SHOUTOUT FROM SINGAPORE'S NEXT PRIME MINISTER, MR LAWRENCE WONG, OVER A DUET SHE DID ON HIS COVER OF TAYLOR SWIFT'S LOVE STORY.

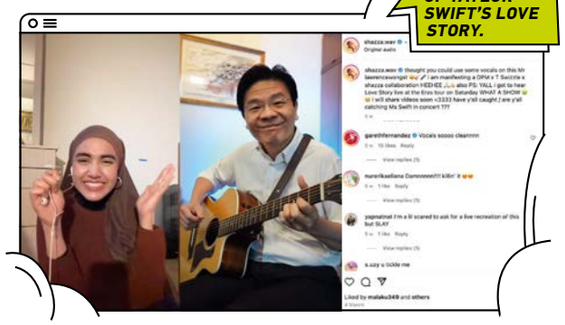
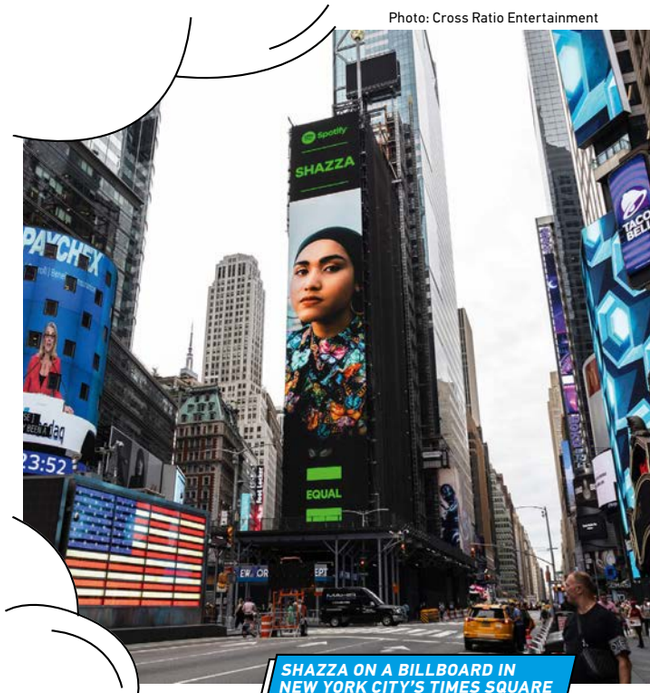


Photo: Cross Ratio Entertainment



SHAZZA ON A BILLBOARD IN NEW YORK CITY'S TIMES SQUARE AS PART OF A SPOTIFY CAMPAIGN ON WOMEN IN MUSIC LAST YEAR.

LIVING A DOUBLE LIFE

But if we pause the track for a moment – beyond the rush of her music career, Shareefa is still a communication undergraduate, working hard on assignments and rushing from lectures to tutorials.

Joining NTU's Wee Kim Wee School of Communication & Information (WKWSCI) after polytechnic was a "natural" choice for Shareefa, as she gets to learn about the communication industry at a deeper level.

"But in my second year in NTU, when I returned to school after making music full-time for a year, I felt like I was living a double life," quips Shareefa. "My friends knew me as Sha, and I wasn't open about my career. People would sometimes stare and ask if I was shazza."

"A few times, I had to leave classes halfway for radio interviews. I would explain why to the professor, rush off and zip back to class. That's $60 in taxi rides each time," she recalls.

As her final exams approached and a big performance loomed, she started to feel the stress of juggling everything and turned to the University Counselling Centre. "Sharing about my struggles with a professional counsellor was validating. I felt better afterwards," she reveals.

Shareefa is on a leave of absence to focus on her music this semester and plans to resume her studies soon. She adds: "I think you shouldn't be afraid to seek help when you need it. Always be kind to yourself."

Coen Sim | Don Tan

GOOD VIBES ONLY

shazza shows us her favourite spots around NTU



A TUNE FOR NTU

The night before the HEY! shoot – for her first magazine cover appearance – Shareefa fretted over whether she could complete an original jingle for NTU that would do it justice. HEY! had seeded the idea of an "NTU song" she could create.

"I was very tired from an engagement that ended around midnight, so I could only work on completing the other verses early in the morning before the HEY! shoot," she confesses.

As it turned out, the consummate professional had a jingle up and ready to go within an hour. (Psst, scan this issue's cover with the HEY! AR app to watch her perform it.)

"When I write songs, I'm inspired by human emotions – my own and other people's experiences – as well as other forms of media and storytelling," she muses.

"Ever since I was little, melodies and lyrics would 'bounce around' in my head. At times, the melody comes first, and I fit lyrics into it. Other times, I have specific lyrics in mind and search for a suitable melody. Songwriting feels like solving a really fun puzzle to me," she shares.

"For the NTU song, I was trying to convey the joys of university, as the phase of life where people step into their dreams and into their future as young adults. I wanted to capture a sense of hopefulness and excitement. The more I wrote, the more doable it became. I am really happy with how it turned out. I had a lot of fun singing it and I hope people will enjoy listening to it too," she adds.

Decked out in a stylish mustard yellow jacket and printed pants, Shareefa showed up for the four-location, five-hour shoot with her song on her phone and a beaming smile. She had only had a few hours of sleep and was fasting as it was the Islamic month of Ramadan, but no one could tell.

"The HEY! shoot was very fun and interesting," she laughs. "It was a little nerve-racking to shoot in front of my uni peers, but everyone was very nice and some students said 'hi' at The Hive, which was very cute and a little surprising."

Looking back on her journey so far, Shareefa finds it fitting that her first magazine cover shoot would be for her university's publication.

She adds: "It's a very sweet, full-circle moment. I hope to make the school proud with my endeavours one day. I am eternally grateful to NTU for the graciousness they have shown and the space they have given me to pursue my dreams this way."

HEY! STUDENT WRITER



Coen is a nocturnal sci-fi fanatic with a sense for wordplay and a knack for creating his own problems.

AN EDUCATIONAL ARC

The Arc

"I took all my first-year interdisciplinary core modules here. For the core writing class, I researched into how and why people interpret written art differently. I learnt that personal experience, physical ability, such as colour blindness, and other factors affect how someone understands a piece of work. I'm more sensitive to these factors when I write my songs now."



ON A ROLLERCOASTER WRITE

The Hive

"Others call this the 'dim sum tower' but it reminds me of the 'Revenge of the Mummy' ride in Universal Studios Singapore. The brick-coloured concrete drawings on the walls look like ancient Egyptian hieroglyphics. Sometimes I take the stairs to get to my creative writing class – it feels like I'm having fun in the theme park. When I'm on the curved balcony, I can see what's happening in the whole building."



THE COMPASS ALWAYS POINTS NORTH

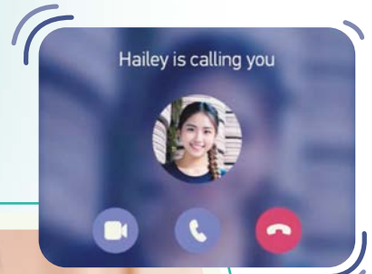
North Spine Plaza

"When I first started university, this was where I'd get lunch with my friends after class, so it quickly became my landmark, a way to orientate myself when getting around NTU. If I start from the North Spine, then I know how to get to my classes in WKWSCI and to my interdisciplinary modules held at The Arc. I like the vibrancy here and the food queues move fast."

Foo Jie Ying
Hanafi Ramdan + Vivian Lim

NAIL THE FUTURE

Hailey, a hyper-realistic character we created using generative artificial intelligence (AI), chats with Prof Luke Ong, founding dean of NTU's new College of Computing & Data Science, about how NTU will train talents to embrace the AI revolution





Hailey: ***Hello, Prof Ong. Can you tell us why AI is so important today?***

Prof Luke Ong: Well, AI is the science and engineering of intelligent machines – it can do many tasks efficiently and more reliably than humans can. Many jobs that are hazardous or repetitive in nature can be performed perfectly adequately by AI. AI is also very good at handling large amounts of data, analysing them and identifying patterns, so it can help people make difficult decisions. Moreover, AI can provide personalised services in many sectors, from education to healthcare and finance.

H: ***How do you predict AI will reshape jobs in the coming years?***

L: Since AI is becoming a general-purpose technology, it's a matter of time before everyone in the job market will require basic AI knowledge. I would encourage students to embrace the technology even if they are not into computing. Our new **Minor in AI** programme will help students build up career resilience, so they are not left behind.

H: ***How does NTU's new College of Computing & Data Science plan to keep students ahead in the fast-evolving AI landscape?***

L: Aside from the new Minor in AI, NTU's new College is also offering a new **Bachelor of Computing in AI & Society** in Academic Year 2024-2025. This programme teaches students how to build AI models and apply them in the real world by creating AI solutions that are both powerful and human centric.

I should add that having the word "society" in the programme's name doesn't mean this is a humanities course. It is every bit as technical as our other computing degrees. Rather, through this programme, we aim to develop AI talents who are socially conscious and equipped to address societal needs.

Students can also opt for the **Data Science & AI** degree, which has been ranked among the world's best AI undergraduate programmes, or the **Computer Science** degree, which focuses on the principles behind the efficient applications of computing technology.

H: ***What makes the AI & Society programme stand out for someone interested in AI?***

L: Practical learning is a fundamental component of the programme. Students go on a 20-week internship with companies such as Google, Meta, Amazon Web Services and ByteDance. They will get to apply their knowledge to innovate and solve real world problems.

Moreover, in the fourth year, students take on a capstone project. They apply what they have learnt to a sector of their choice by building AI solutions to a real world problem, thereby creating a social good.

H: ***What unique opportunities will Turing AI Scholars have?***

L: The **Turing AI Scholars Programme** is meant for talented students enrolled in one of these three undergraduate programmes: AI & Society, Data Science & AI, and Computer Science. Scholars in the programme can learn from AI experts across academia and industry through exclusive masterclasses and research projects. They can also look forward to overseas internships and study abroad programmes at leading global universities.

Of course, all this is on top of practical perks like full coverage of tuition fees, living and accommodation allowances, a travel grant and even overseas allowances.

H: ***How can students make sure they're using AI in a way that's good for everyone?***

L: First, we need to be aware of the ethics behind AI. That means thinking about AI safety – issues such as bias, privacy, verifiability, auditability and robustness – and making sure we're not causing any harm with our AI projects.

If students have a hand in creating AI or co-creating something with AI, they should always make their AI solutions human centric, by being inclusive and thinking about how different people might use the outcomes. Transparency is key – always be open about how our AI works and be ready to explain our decisions.

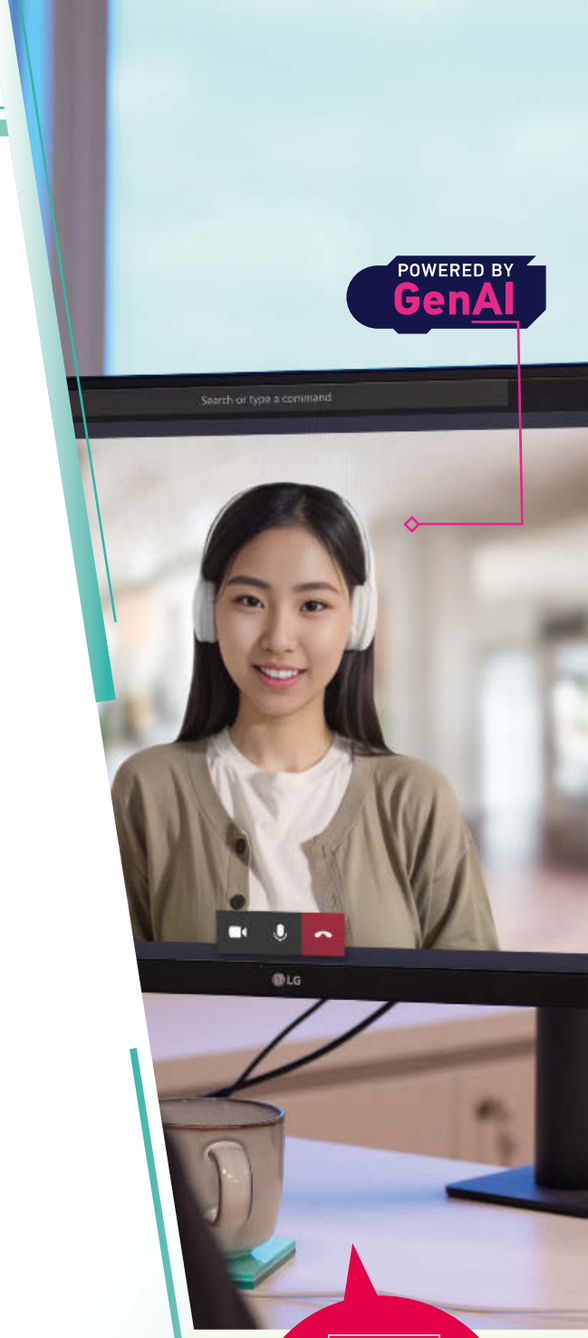
Students who build AI solutions should be careful with the data they use. We should only collect the data we need, be clear about how they are used, make sure they are stored safely, and obtain permission before using them.

Lastly, AI is always changing, so everyone has to stay up-to-date and keep improving your skills.

H: ***What jobs are suitable for a graduate of NTU's AI-related programmes?***

L: The future is really bright for graduates in AI. One important reason is that this technology is set to be the main engine that drives our digital economy. An AI degree will open graduates to coveted high-paying positions such as AI and data scientists, AI engineers, AI consultants, AI safety advisers, AI policy consultants, and more. We know that NTU's fresh graduates in Data Science & AI draw some of the highest salaries. According to the latest graduate employment survey, they take home a mean gross monthly salary of $5,352.

In a constantly changing world, graduates must be nimble and agile, able to spot opportunities as they arise. AI is expected to be a springboard for the next wave of startups. So, you could be the founder of a business that previously didn't exist and is only possible with AI technologies.



HEY! AR
SCAN THIS PHOTO to join Hailey's video chat with Prof Luke Ong

Coen Sim

BUSSIN' BUSINESS

NTU student Matz Chan seized an opportunity amidst Singapore's concert frenzy, starting a bus-sharing service to ferry concertgoers, including NTU students, home



Photo: Matz Chan



Photo: Don Tan

It all began just four months ago, when computer science student Matz Chan was hanging out with his friends in his room at Hall 16.

"We were wondering how to get back to NTU from the Coldplay concert. That was the very night we came up with Bussin Buses. We even thrashed out the website design and marketing plan on the spot. We were so excited as we knew we had something," recalls Matz.

For a flat fee of $14.99, inclusive of bottled water and a much-needed lozenge, Bussin Buses tackles a pain point for concertgoers: getting home after attending a sold-out concert.

From the National Stadium, the post-concert buses ply four main routes to the north, south, east and west of Singapore. Depending on riders' requests, the buses stop at specific MRT stations and even NTU's Hall 16.

So far, over 900 music lovers have rocked out on these buses, continuing their concert experience aboard with tunes from global superstars like Coldplay or Bruno Mars that they've just watched live.

SHAKE OFF THE SETBACKS

To turn the business idea into reality, Matz and his team, including his co-founder and three friends, first researched extensively to identify a reliable fleet of buses. Trials were run with four different bus providers to suss out how punctual each ride was and the condition of the buses. The team also finetuned logistics and recruited eight part-timers to manage operations. All riders are alerted about their pick-up points through a Telegram chat group.

As the business began to take shape, the team ran into challenges. "It was tricky to identify the less congested pickup points near the stadium and to design a smooth boarding process," says Matz.

Drawing on their experience in non-profit projects, the team stayed flexible, changing their pickup arrangements to avoid roadworks and accidents. They also consulted the authorities on traffic laws.

Putting his computer science skills to good use, Matz even coded a program that pulled data from Google Maps to test the smoothness of different routes at different times.

COLDPLAY: DON'T PANIC

The lead-up to Bussin Buses' inaugural run for British band Coldplay's six shows in January was as exciting for the business founders as it was for the concertgoers themselves. Even a sudden downpour on the first night was no damper.

Matz recalls: "We were running around in the rain, ushering customers to the right buses. Even though we were drenched, it was rewarding to get our customers home quickly and safely."

"My experience with Bussin Buses was great," says biological sciences student Timothy Neui. "I even caught up with old friends who happened to be on the same bus. Sharing a ride back to NTU with them while blasting *Yellow* was a vibe."

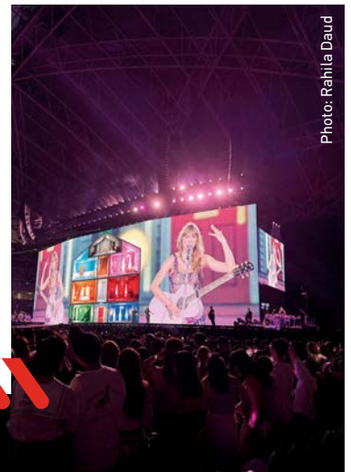


Photo: Rahila Daud

TAYLOR SWIFT: GETAWAY BUS

By the time American singer-songwriter Taylor Swift started her Eras Tour concert here in early March, the Bussin Buses team had ironed out operational kinks, thanks to feedback from their first run.

Aerospace engineering student Joshua Balachandran says the guaranteed bus ride home was a boon. "I could relax and not worry about navigating huge crowds or dealing with fare surges and difficulties in booking private-hire cars and taxis, after singing my lungs out for three hours," he says.

Onboard entertainment such as sing-alongs and the exchange of iconic Swiftie friendship bracelets "contributed to the overall good vibes and camaraderie among concertgoers," he adds.

BUSSIN' BRUNO FANS

More recently, in April, the team ferried about 300 concertgoers home over three nights, after American pop star Bruno Mars' sold-out concerts.

"Although these shows had a smaller audience over fewer nights compared to the previous two concerts, the customer demand for our buses was still impressive," shares Matz.

On the company's future plans, Matz says he hopes to see Bussin Buses serve more events and unique communities. With Singapore being the capital of marquee events in the region, that's not hard to do.

Matz adds: "Building Bussin Buses has been about embracing the chaos and staying adaptable and resilient to find innovative solutions. My partners and I support one another as a team. We haven't just created a service but brought our dream to life. That's something we're really proud of."

HEY! STUDENT WRITER



Coen is a nocturnal sci-fi fanatic with a sense for wordplay and a knack for creating his own problems.

HEY! AR
SCAN THIS PHOTO to hop on a Swift ride

Kenny Chee, Kwan Shu Yi, Kwok Pei Fang | Vivian Lim

OF COURSE WE MADE THE RIGHT CHOICE

These NTU subjects are ranked in the global top ten in the latest Quacquarelli Symonds (QS) subject rankings. Students tell us why they chose to specialise in these fields



HEY! AR

SCAN THIS VISUAL to hear it from Hailey, our AI-generated news presenter in this AR video with the lowdown on NTU's subject rankings

POWERED BY GenAI

WORLD NEWS

COMMUNICATION & MEDIA STUDIES

4TH IN THE WORLD

"I applied to only one university course, NTU's communication programme. I've always been interested in media, so it was a natural choice for me. NTU's Wee Kim Wee School of Communication & Information was impressively ranked 1st in Asia and 6th in the world back then, and attending NTU's open house excited me even more.

I hope to work in marketing, advertising or content creation. My lecturer, Ms Wong Pei Wen, not only exposed me to industry practices in public relations and advertising, she's become like a mentor, pushing me to come up with better ideas and to network widely.

Two of my best memories include travelling to Vietnam to film a heritage documentary and going to France for a festival dubbed the "Oscars of creativity". Incredibly, I will return to the Cannes Lions International Festival of Creativity in June.

This time, I'll be representing Singapore at the prestigious Roger Hatchuel Student Academy and taking part in workshops and coaching sessions with world-class brands and leading creatives. Only 30 students are hand-picked to join this Cannes programme globally, and I was nominated after my project clinched two Golds and the Best of Show prize at the Crowbar Awards, a major creative competition."

Philip Ong
Communication Studies, Year 4



HEY! AR

SCAN THIS PHOTO to find out what Philip learnt at the "Oscars of creativity" in France



Bethany Chong
Materials Engineering, Year 3



MATERIALS SCIENCE

5TH IN THE WORLD

"Materials are the fundamental building blocks of our world. Materials engineers shape our future with technology. NTU's materials engineering programme is consistently ranked among the top in the world, so I'm confident my world-class education will prepare me for a bright future.

I had fun using computer-aided design software to model, design and 3D-print a small launcher in my industrial design lab class. The highlight was a contest to see which team's launcher could propel a chocolate M&M'S candy the farthest. I've picked up in-demand 3D printing skills and learnt how to use high-performance materials for different purposes.

As part of the Materials Science & Engineering Club, I applied my knowledge and leadership skills to initiate Singapore's first materials innovation competition for pre-university students. We challenged them to design a sustainable, insulating backpack for food delivery riders using safe and durable materials."

DATA SCIENCE & ARTIFICIAL INTELLIGENCE

8TH IN THE WORLD

"I've always enjoyed math and picked NTU's data science and artificial intelligence (AI) programme as it has a good mix of math and computing modules. When I enrolled in 2020, the programme was two years old.

Since then, it's been thrilling to see my course ranking 2nd for AI in another varsity ranking and being recognised alongside Harvard University and MIT by Forbes among the world's 10 best AI and data science degree programmes.

In my classes, such as on neural networks and deep learning, I get to go 'under the hood' of powerful AI models like ChatGPT to learn the complex math and algorithms that enable computers to process data like the human brain. The potential of machine learning is limitless. I'm eager to apply my knowledge once I start working in this field.

It was a bonus to intern as a data engineer at a retail pricing startup in Sydney through NTU's Overseas Entrepreneurship Programme. I had the best time of my life there, gaining technical skills in a different work culture."

Low Zhi En
Data Science & Artificial Intelligence, Year 4



Kenny Chee, Kwan Shu Yi, Kwok Pei Fang

COMPUTER SCIENCE & INFORMATION SYSTEMS

9TH IN THE WORLD



Teo I-Jen
Computer Science, Year 4

"After junior college, I wasn't sure where to go. I visited the computer science booth at NTU's open house and met a professor who explained that NTU's Computer Science programme covers both hardware and software, and that this holistic approach is vital as a deep understanding of hardware helps us build better software. That resonated with me.

Now, I'm specialising in cybersecurity and artificial intelligence (AI) as they can complement each other. For example, AI can make the fight against malicious activities faster and more efficient. In a cybersecurity module on malware analysis, I got to examine actual malware samples with industry-standard tools.

Another core memory is my internship at automotive manufacturer Continental, where I designed and tested car software made for brands such as Volkswagen and Nissan to ensure they are bug-free."

CHEMICAL ENGINEERING

9TH IN THE WORLD



Taufiq Zailani
Chemical Engineering, Year 2

"At a session for prospective students, Assoc Prof Raymond Lau from the School of Chemistry, Chemical Engineering & Biotechnology inspired me to join NTU. He shared what we'd be learning in chemical engineering at NTU, and I heard about the good career prospects of graduates in diverse industries from petrochemicals and pharmaceuticals to perfumes and nuclear energy.

I really appreciate professors like him and Asst Prof Tej Choksi who challenge us to be creative, adaptable and critical when applying our knowledge in unfamiliar situations."

CIVIL & STRUCTURAL ENGINEERING

9TH IN THE WORLD

"I aspire to be an engineer in the built environment industry, focusing on coastal protection and green buildings. I was drawn to NTU's impressive rankings in this area, and my classes have given me a good foundation in designing and making buildings that co-exist with the environment.

I enjoy putting my knowledge to the test and joined five competitions last year. It was hectic and challenging, but so rewarding.

For an urban innovation competition organised by Temasek, my team designed a smart urban water management system and clinched the top prize. We won a trip to Helsinki, Finland, to learn about smart energy consumption, renewable materials, inclusive urban planning, and more. The visit sparked some cool ideas that we're now exploring.

In Taiwan, we built a wooden structural model that can withstand different levels of earthquake intensity. I'm grateful to Assoc Prof Li Bing for training us for the competition."



Yeong Yoong Sze
Environmental Engineering, Year 4



Cheryl Tan
Chemistry & Biological Chemistry, Year 4



10TH IN THE WORLD

CHEMISTRY

"I've always been interested in chemistry and wanted to further my skills and knowledge in this field. Besides NTU Chemistry's high rankings and new, well-equipped laboratories, what sealed the deal for me to study here was the university's CN Yang Scholars Programme for undergrads passionate about science and engineering research.

It covers my school fees, guarantees accommodation in a hall, and offers multiple research opportunities, both locally and overseas. So I did my final-year project at York University in Toronto, where I synthesised organic molecules that can be used in sustainable organic semiconductors."

10TH IN THE WORLD

ELECTRICAL & ELECTRONIC ENGINEERING

"When I was exploring higher education options, I learnt that laboratory and hands-on sessions are a core part of NTU's electrical and electronic engineering course. This was the clincher, as I had enjoyed practical learning in polytechnic and I didn't want to just study theory in university.

I also like the flexibility of the curriculum as I can pursue varied interests. I can specialise in communications engineering, as well as take courses that cover artificial intelligence.

In a wireless system design course, my professor covered real-life aircraft applications of radar systems and I came up with calculations to determine the amount of power a radar needed to successfully detect an object's distance from the aircraft. It was eye-opening to apply my skills to an actual industrial use case."



S Suren
Electrical & Electronic Engineering, Year 4

Fadhli Fadzil
Malay Studies & Education, Year 4



10TH IN THE WORLD

EDUCATION

"I want to help youth appreciate their heritage and cultural identity, and I think the best way to do that is through learning their mother tongue. To be a teacher of the Malay language, I enrolled in the National Institute of Education (NIE), which has many acclaimed Malay writers, educators and scholars. My journey has been incredibly transformative.

Through four NIE teaching stints, I've taught at two schools with starkly different student profiles and school cultures, so I not only practised classroom management strategies but also experimented with teaching approaches picked up in university. NIE's curriculum ensures we're up to date with the latest teaching methods that leverage technology and artificial intelligence to enhance learning.

My Malay civilisations module brought me to Cape Town, South Africa, where I learnt about the Cape Malay community and their struggles with identity and language. This strongly impacted my perspectives on identity and expression."

HEY! PIX

Kwok Pei Fang

CAMPUS CANDIDS

Explore the tempo of campus life and uncover your special talent



Buoy, oh buoy, what a match.



Let's stay in touch even after the Inter-Hall Games have ended.



Naan-stop fun and flavour.



A taste of residential education for our special guests, NTU Chancellor and Singapore President Mr Tharman Shanmugaratnam and his spouse, Ms Jane Ittogi.



Scoring precious friendships.



Buckle up for this theatrical joyride.

Always cheerful with this squad.

SCAN THIS PHOTO



HEY! AR
SCAN THIS PHOTO
to lift your spirits

SCAN THIS PHOTO

Clockwise from top right of the page: @clamment.c, Amelia Yeo, @ntuaces and @theplainphotographer

Happiness comes in waves.

SCAN THIS PHOTO



HEY! AR
SCAN THIS PHOTO
to set sail with these students

SCAN THIS PHOTO

Clockwise from top right of the page: @earthlinkntu, @chunguan_t and @_weixuannn_, and @eugenegoh.jpeg (two photos)

Derek Rodriguez

HOW TO WIN A *HACKATHON*

Recent hackathon winners reveal the secrets to their success

What do you think of when you hear the word hackathon? Techies coming together to pore over complex code? Not exactly. Traditional hackathons might have been closer to coding shootouts but over the years, they have evolved to require business, decision making, critical thinking, communication and time management skills – all competencies needed in real life.

It's no surprise then that companies often use hackathons to identify, and even directly recruit, young talent.

Thanks to the interdisciplinary nature of NTU's courses and opportunities to meet teammates with complementary skills, many NTU students and teams have taken pole position in recent hackathons. They share their winning tips.

TIP 1 FORM A TEAM WITH COMMON PASSIONS AND DIVERSE SKILLS

A. BUILD YOUR DREAM TEAM

"We built teams of smart and dedicated individuals with different skills. For example, one of our hackathon teams had two software specialists, two people skilled in hardware, and one well-versed in strategy and presentation."

– Chaanan Anand, Year 3, Business & Computer Engineering
🏆 hacksingapore 2023 (Sustainability Track)

B. FIND TEAMMATES WITH SIMILAR INTERESTS

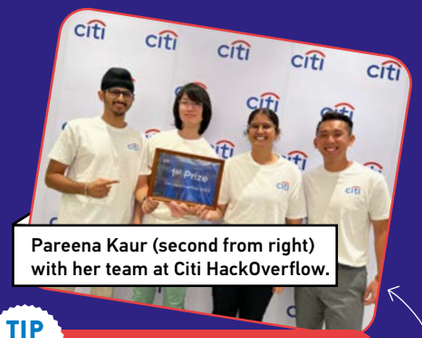
"We started out discussing how to leverage artificial intelligence (AI) in gaming and blockchain technology during meals and formed our team from there. Each of us brought unique skills in AI, business, blockchain, non-fungible tokens and design to the table."

– Team Kallos: Howell Chan, Cheng Lin and Eunice Lee, Year 2, Renaissance Engineering Programme
🏆 Port63 Challenge 2023 (Web 3.0 Track)

C. TREAT IT LIKE A STARTUP

"I've always gone to hackathons with my best friend. We push each other to be ambitious and aim high. A hackathon team is like a small startup and it's important to have teammates who work well together."

– Aishik Nagar, Class of 2022, Electrical & Electronic Engineering
🏆 Google Developer Solutions Challenge and Microsoft APAC Hackathon



Pareena Kaur (second from right) with her team at Citi HackOverflow.

TIP 2 FIND A GAP TO FILL, AND DO IT CREATIVELY

A. SOLVE A REAL-LIFE PROBLEM

"We proposed a financial web application for investors and traders, providing an intuitive dashboard for real-time market insights and in-depth risk analysis. The judges said our product was the most effective one and dealt with the problem at hand."

– Pareena Kaur, Year 3, Business & Computer Science
🏆 Citi HackOverflow 2023

B. IDENTIFY MARKET GAPS

"We built a platform that offers comprehensive career preparation resources tailored to people with disabilities. This not only addressed an underserved demographic but also contributed to the United Nations' Sustainable Development Goals, which is the objective of the hackathon, by promoting inclusive employment practices and reducing inequalities."

– Jeez Associates: Edward Liew and Liu Jiahui, Year 3, Accountancy & Business; Edward Ng and Samuel Quek, Year 3, Business; and Deng Zhiji, Year 2, Accountancy & Business
🏆 SDG Open Hack Singapore 2023



Chaanan Anand (far left) and his team at hacksingapore 2023.

TIP 3 YOUR IDEA MUST WORK

A. DON'T BITE OFF MORE THAN YOU CAN CHEW

"Focus on the important tasks first and leave the details for later. It's better to have a simple product that is complete and well-explained instead of a complex but half-baked solution that your team can't submit on time."

– Chaanan Anand

B. HAVE A REALISTIC PLAN

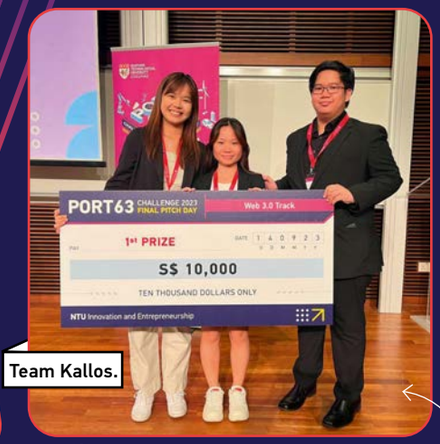
"It's easy to overestimate how much you can do, and you may have difficulty implementing all your ideas from your brainstorming. I've learnt it is better to focus on building one or two features first, then branch out from there."

– Andrew Oak, Year 3, Computer Science
🏆 SUTD What The Hack 2023

C. KEEP YOUR PRESENTATION SIMPLE

"Don't overwhelm your audience with heaps of data. Instead, carefully choose which piece of information to present to balance between being informative and understandable."

– Jeez Associates



Team Kallos.

TIP 4 FIND EXPERIENCED MENTORS

A. REACH THE NEXT LEVEL WITH INDUSTRY INSIDERS

"We got help from Simon Siah, a mentor at NTU's innovation arm, and from Joana Lacerda, Head of NFT at cryptocurrency platform Algorand, one of the organisers of the hackathon. Their advice guided us in product development."

– Team Kallos

B. GET HELP IF YOU HIT A ROADBLOCK

"We faced challenges with integrating human resources into our solution. Apart from researching industry trends and user preferences from employment platforms like LinkedIn to improve our pitch, we sought guidance from experts, such as an award-winning corporate affairs veteran invited to the event and a seasoned HR practitioner that our school connected us with."

– Jeez Associates



Jeez Associates.

THE PERKS OF WINNING A HACKATHON

AID FOR YOUR ENTREPRENEURIAL JOURNEY

"Although we finished third in the Algorand Global Hackathon, one of the company's venture associates is helping us find ways to release our product to the market."

– Team Kallos

RECOGNITION FROM BIG-NAME EMPLOYERS

"I've joined ten hackathons as an NTU student, and my performance at the JP Morgan Code For Good hackathon led to my being shortlisted for a summer internship recently. When I applied for another internship at TikTok, the recruiter recognised me from their hackathon."

– Andrew Oak

OVERSEAS OPPORTUNITIES

"We got invited to an exclusive four-week summer school in Geneva, Switzerland, to create innovative solutions around the United Nations' global goals that urge action to achieve a better and more sustainable future for everyone."

– Jeez Associates

Lester Kok | + Vivian Lim

TOMORROWLAND

How NTU's homegrown technologies are reshaping our future

Wormy way to deal with plastics

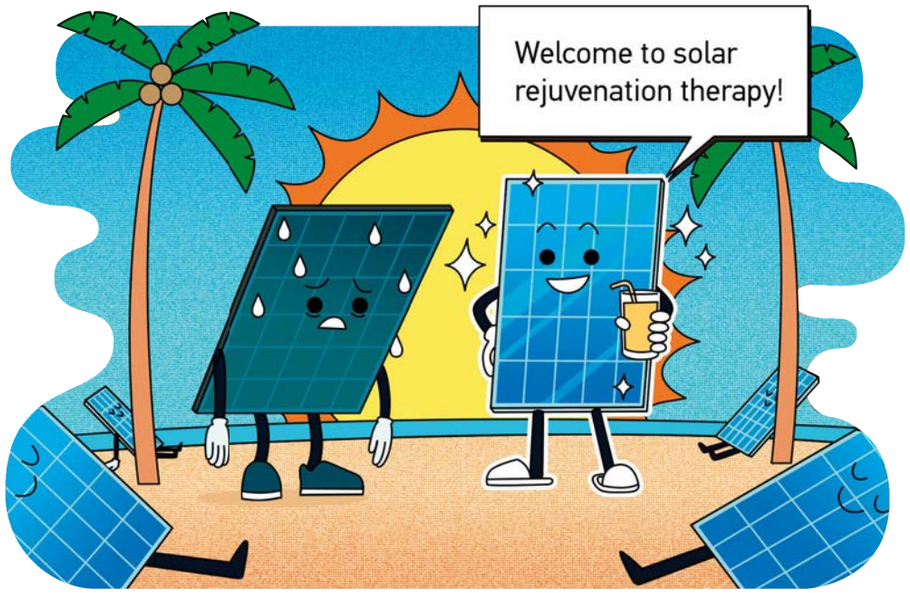
NOW

Inspired by how *Zophobas atratus* worms – the larvae of the darkling beetle commonly sold as pet food – can eat and digest plastics, NTU's scientists studied these worms and uncovered bacterial colonies in their gut responsible for their "superpower". They went on to extract the bacteria and grow them in the lab, birthing an artificial worm gut that has been effective in breaking down common plastics found in styrofoam boxes and shampoo bottles.



FUTURE

Imagine giant tanks filled with these plastic-eating bacteria, ready to tackle mountains of waste plastic. As these artificial guts spring into action, speedily breaking it all down, envision futuristic compost bins combating the plastic pollution plaguing our oceans. Who knew the answer to our plastic crisis would wiggle its way out of a pet shop? Better yet, this nature-inspired solution does not rely on large-scale worm breeding.



Giving solar panels a new lease of life

NOW

Solar panels in tropical countries like sunny Singapore have it hard. When these panels face inclement weather and harsh sunlight, the solar cells within them start to degrade in performance, sometimes by 10 to 20 per cent over their roughly 25-year life span. This degradation starts from the moment the solar panels are installed. To help protect these panels and restore degraded solar cells, NTU's deep tech spin-off, EtaVolt, has developed an automated device that can re-energise the solar cells in just minutes using LED lights with several times the intensity of sunlight.

FUTURE

Rather than wait for solar panels to degrade before rejuvenating them, this intense solar rejuvenation process can be applied in the factory to brand-new solar cells. This process "activates" the hydrogen within them, which helps to protect new solar panels from degradation caused by solar exposure. If we hit the refresh button on this process every few years, we can keep the energy flowing from our solar panels strong and steady, stretching out their sunny days.

The Force at NTU

NOW

Commanding a robot with a mere wave of your hand, akin to a Jedi in *Star Wars*, is no longer just movie magic, but reality, thanks to the pioneering work of NTU's material scientists in developing advanced soft electronic sensors. These electronics, designed to be ultra-thin, stretchable and flexible, can be comfortably worn on any part of the body. Embedded with multiple sensors, they can monitor vital signs and even remotely control robotic arms or vehicles, paving the way to novel wearables.

FUTURE

Slim electronic patches, when directly applied to the skin, could provide those with limb disabilities or mobility impairments an easier way to control robots and vehicles, replacing conventional joysticks and controllers that require the use of both hands. These patches can be attached to the forearm, legs, head or shoulders, enabling wireless connectivity to operate vessels, control cranes, or replicate full body movements, much like how pilots control giant robots known as Jaegers in the *Pacific Rim* movie franchise.

HEY! AR

SCAN THIS ILLUSTRATION to see what you can do with a flick of your wrist in future



Derek Rodriguez

FYI

SCENE + HEARD

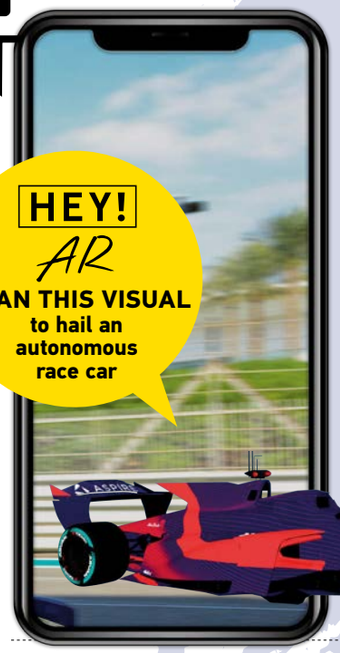
"My favourite augmented reality element is the trio of turtle hatchlings (in Issue 55). I like the special AI issue too. It's interesting to learn that Hailey isn't a real person and it's great to see how the magazine is leveraging AI."



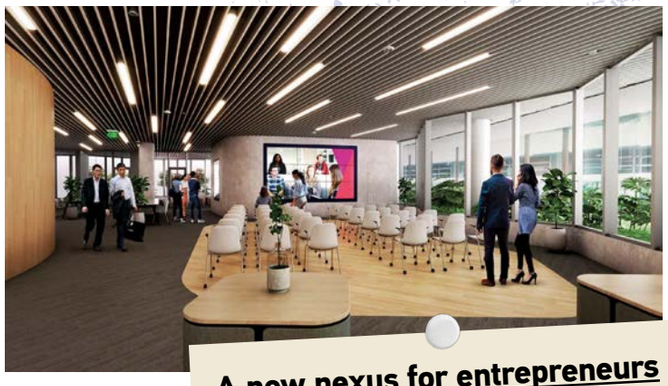
- Shunmugaraj Shanthana Priya, a first-year student from the School of Electrical & Electronic Engineering, who won an 8D trip to Thailand in the HEY! readership survey lucky draw. Over 100 HEY! readers bagged prizes from our sponsors that included Contiki, Huawei, Chrysalis and FreshKon



WHO'S DRIVING THIS RACE CAR?



Race cars capable of going at 300km/h whizzed around Abu Dhabi's Yas Marina Circuit in April as they competed for a piece of a staggering US$2.25 million (S$3 million) prize pot. The catch? No actual drivers were involved. Taking the wheels were artificial intelligence (AI) drivers coded by teams around the world, including one built by a 20-member NTU team led by Assoc Prof Lyu Chen, an automated driving expert from the College of Engineering. With no help from their human counterparts, the AI drivers duked it out on their own, making all on-track decisions, such as overtaking, by themselves. In the end, the real winner was autonomous technology, with the event showcasing its evolution and its potential in improving road safety.



A new nexus for entrepreneurs

Launching in May is the Innovation Port at The Arc, where you can brew both a cup of coffee and your business ideas. Not only is it a cosy space to meet potential collaborators and develop your prototypes, it's also a convenient place to find support from the university in your journey to commercialise your product. To turn even more ideas to market-ready solutions, a second Innovation Port will open at Gaia later this year.





HEY!
AR
SCAN THIS VISUAL
to take a wefie with Lyon and a friend you "heart". Tag #NTUsg to stand to win OneNTU Core Values cups

SHARING IS CARING

"My junior from the same course, Abigail Wijaya, goes the extra mile to support her friends who are weaker academically.

When I mentioned my difficulties with learning thermodynamics, she suggested we study together and helped to summarise the course content. She's able to break down complex concepts into simple terms that someone without an engineering background can understand. Once, I contacted her while struggling to understand my lecture notes, and she cancelled her plans there and then to help me with my questions.

I think the world would be a better place with more people like her."

CHEN ZIJIE
Year 3, Mechanical & Aerospace Engineering



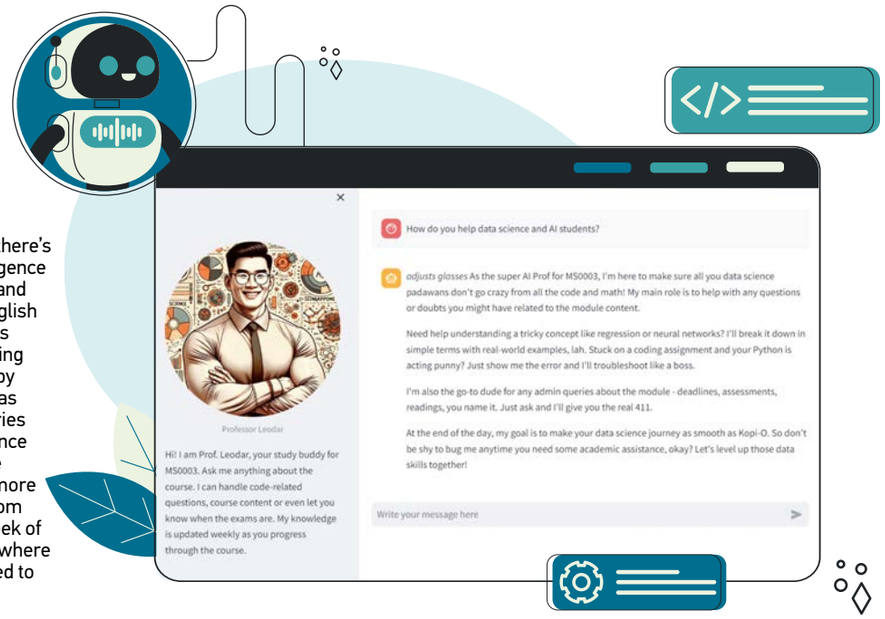


PAINTING A COOLER FUTURE

If you're sweating over the rising temperature, there's good news on the horizon. A group of NTU students has proposed a novel way to bring the mercury down a few notches. Their solution is a paint that cools the surface of buildings by up to 6°C, three times more than for existing paints. It does so by facilitating evaporative cooling instead of just reflective and radiative cooling that traditional paints rely on. This idea took first place at the second Kumar Sustainability & Innovation Prize, snagging them a cool $50,000.

NEW AGE SIDEKICK

Move over ChatGPT, there's a new artificial intelligence (AI) chatbot in town, and it's well versed in Singlish to boot. Prof Leodar is an AI-powered teaching assistant developed by NTU scientists that has been answering queries from NTU's data science and AI students since January. It received more than 1,000 queries from students across a week of end-of-term exams, where students were allowed to use it.

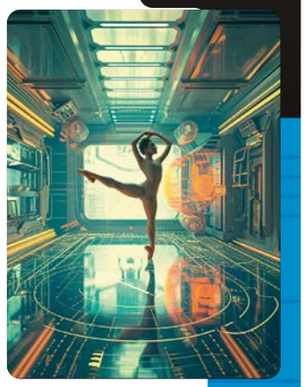


Dr Daphne Ng + ChatGPT | Vivian Lim + Midjourney

CHATGPT IMAGINES FUTURE USES OF NTU'S AI INNOVATIONS

Can ChatGPT crystal-ball gaze and predict future uses of four AI technologies developed by NTU's computing researchers? Yes, and quite creatively to boot

AI THAT TURNS YOU INTO A MASTER OF THE DANCE FLOOR



The AI innovation: An algorithm created by PhD student Tan Wang, in collaboration with Microsoft, transforms a still photo of a person into a vibrant dance performance.

Future applications of the innovation

A cure for two left feet
Say goodbye to long hours spent practising intricate dance moves for that TikTok clip. Just use an app that instantly turns you into the star of your own dance video. Share your epic dance videos with friends, or maybe even go viral on social media.

Your workout companion
Seeing your avatar nailing dance moves in a virtual dance workout could be just the inspo you need to jazz up your daily exercise routine.

AI THAT MAKES PHOTOS TALK

The AI innovation: This program developed by Assoc Prof Lu Shijian generates realistic "talking heads" from an audio clip and headshot.

Future applications of the innovation

Your chatty digital twin
Take a selfie and see it come alive. Your AI "twin" will always be ready to chill with you or lend a listening ear when you need to vent.

Lifelike reenactments of historic events
Thanks to AI-generated avatars, monumental speeches, game-changing moments and epic events could leap off the pages and into our world. If you are learning about Martin Luther King Jr, get "him" to deliver his iconic "I Have a Dream" speech in front of you, as though you're right there on the steps of the Lincoln Memorial in 1963.





AI THAT READS EMOTIONS IN TEXT

The AI innovation: This software by Prof Erik Cambria decodes the emotions expressed by words.

Future applications of the innovation

On-the-go AI therapists
By picking up on subtle cues in your messages that suggest that you might be feeling anxious or down, an AI therapist in your phone could help you get over rough patches.

Lectures customised for your emotional state
In the classroom of tomorrow, your AI tutor will be able to tell if you are feeling frustrated with learning difficult concepts. If you are stuck or confused, it will provide helpful hints or a different way to tackle the topic. When you're totally nailing it, the AI could offer more challenging materials or quizzes, keeping the learning journey as engaging as your favourite game or Netflix series.

AI THAT RESTORES AUTHENTICITY IN ALTERED FACES

The AI innovation: A groundbreaking algorithm developed by Asst Prof Liu Ziwei detects altered photos and restores them to their original form.

Future applications of the innovation



Online truth detectors
AI digital truth detectors that spot sneakily altered images in news articles or Instagram stories may give you the peace of mind that you are sharing authentic information on social media.

Catfishing constable
By flagging doctored profile photos, this AI tool may make online interactions safer and more honest.

Crime-busting digital sleuths
Law enforcement agencies could solve crimes more swiftly in the future with the aid of AI detectives that identify forgery and restore the truth behind altered evidence.

THOUGHTS ON USING AI

How we used AI in this story:
We tested ChatGPT's ability to reason by asking it to envisage exciting applications of four AI technologies developed by NTU researchers; Midjourney generated visuals of the future scenarios based on text prompts.

😲: ChatGPT came up with compelling ideas almost instantaneously, and its responses were surprisingly creative yet plausible.

🤔: Word count requests were ignored. Inaccuracy was sometimes an issue.

😖: To nudge the AI towards the desired images, we often had to tell it what we *didn't* want to see.

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE



Changemaker
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