



# SIT and Industry Partners Launch Competency-Based Workplace Learning to Upskill Singaporeans in Infocomm Technology and Land Transport Sectors

03 September 2021

MOUs signed with Ensign InfoSecurity, the Land Transport Authority, SBS Transit and SMRT Corporation to address industry skills gaps and provide an inclusive alternative pathway for in-employment learners to upskill and pursue a degree, through the pilot of a new Competency-Based Workplace Learning Pathway



(From left) Mr Lee Fook Sun, Chairman, Ensign InfoSecurity; Professor Chua Kee Chaing, Deputy President (Academic) & Provost, SIT; Mr Bob Tan, Chairman, SBS Transit; Mr Ong Tze-Ch'in, Chief Executive, SkillsFuture Singapore; Mr Ng Yat Chung, Chairman, Board of Trustees, SIT; Mr Chan Chun Sing, Minister for Education; Mr Chan Heng Loon Alan, Chairman, Land Transport Authority; Professor Tan Thiam Soon, President, SIT; Mr Seah Moon Ming, Chairman, SMRT; Professor Cham Tao Soon, Chairman, Singapore Railway Academy.

As part of the efforts to forge greater resilience and upskill manpower for Singapore's key sectors, the Singapore Institute of Technology (SIT) has inked two separate Memoranda of Understanding (MOU) with leading industry partners Ensign InfoSecurity Pte. Ltd., the Land Transport Authority (LTA), SBS Transit Ltd and SMRT Corporation Ltd to provide more workplace learning opportunities.

The collaborations will see the university piloting a new **Competency-Based Workplace Learning Pathway** that will provide adult learners, regardless of their starting qualifications, a means to enhance their skills and pursue a degree while working – the first-of-its-kind in Singapore.

The signing ceremonies were graced by Minister for Education, Mr Chan Chun Sing, during SkillsFuture Month @SIT on 4 August 2021.

As part of the MOUs, SIT will collaborate with these industry partners to upskill their workforce to meet evolving industry needs and achieve greater alignment between academic achievement and work performance. This comes as Singapore's key sectors, including cybersecurity and transportation, are expected to grow significantly, and critical to that development is a skilled and resilient workforce that will help power sustained growth in the post-pandemic economy.

The new pathway, designed in collaboration with industry partners, will adopt a different modality in delivering two existing SIT degree programmes in cybersecurity and land transportation. Under this new pathway, adult learners will be able to acquire competencies and get recognition of skills at the workplace. They will also be assessed based on their displayed competencies.

"Through our engagements with industry, we see the increasing importance of workplace learning to drive lifelong learning in our workforce and enable our companies to transform and progress," said Professor Chua Kee Chaing, Deputy President (Academic) & Provost, SIT. "If we can work with companies to curate workplace learning to allow in-employment learners to upgrade and gain relevant higher certifications that are useful to and hence recognised by the companies, we create win-win solutions for both the learners and the companies. That is why SIT is committed to driving Singapore's first Competency-Based Workplace Learning Pathway."

"This partnership with SIT will enable Ensign to help grow the cybersecurity talent pool in Singapore by grooming and upskilling cyber professionals. It will provide a much needed pathway for cyber professionals to deepen their knowledge and stay on top of their game while being employed, thereby contributing to our overall efforts to build a set of strong localised cyber-defence capabilities and nurture a sustainable workforce to defend our cyberspace; at the same time providing a helpful relief valve from the intensifying and somewhat unhealthy market competition for cyber professionals," said Mr Lee Fook Sun, Chairman, Ensign InfoSecurity.

## Forging Quality Industry Partnerships

Over the next two decades, the Singapore Government plans to expand public transport connectivity with new rail lines and continue to improve rail reliability of existing lines through systems upgrading and renewal. Ramping up the development of local competencies to operate and maintain our rail systems is critical to these efforts.

To help pave the way for a career in the rail industry, the MOU signed between SIT, LTA, SBS Transit and SMRT Corporation will see the development of a new **Postgraduate Certificate in Urban Railway Technology** in addition to the competency-based degree pathway in land transportation.

This new postgraduate programme will be co-developed and delivered by SIT and LTA's Singapore Rail Academy (SGRA), with the support of the two rail operators. Designed for engineering professionals within the local rail industry, the programme draws on SGRA's industry-standard expertise and experience, as well as SIT's applied learning approach to equip them with deeper knowledge and practical skillsets in rail engineering, operations and maintenance.

Said LTA's Chief Executive Ng Lang: "Our rail engineering, operations and maintenance workers are the backbone of a safe and reliable MRT system. Today's MOU is another step we have taken to continue to nurture and develop a strong pipeline of local talents with deep technical rail expertise and cross-functional capabilities."

SBS Transit Chief Executive Officer, Mr Cheng Siak Kian, said: "We are very excited to be embarking on this journey with SIT. Our employees have always been at the heart of our business and we recognise the importance of continued education as a necessary investment for employees to broaden and deepen their rail competencies. This initiative will no doubt help our people grow professionally and gain recognition for their skills and expertise."

Mr Neo Kian Hong, Group Chief Executive Officer, SMRT Corporation, said: "SMRT is delighted to be part of this MOU which provides professionals in the industry with structured and targeted opportunities to upgrade themselves through a workplace learning pathway. We encourage our staff to continually deepen their knowledge and skills as they strive for excellence in their professional development. With a highly skilled workforce, SMRT is also able to maintain a high level of operations and maintenance to better serve our commuters."

## SIT's Competency-Based Workplace Learning Pathway

The new Competency-Based Workplace Learning Pathway will adopt a collaborative approach with industry partners to make workplace learning more immersive and rewarding for participants, through the following key features:

- **Recognition of Prior Learning:** This pathway will recognise adult learners' work experience and prior competencies using competency-based assessment methods, and award credits towards fulfilment of the degree programme's requirement.
- **Learner-Centric:** Most of the learning outcomes required for the degree programme will be achieved through curated projects which learners carry out at their place of work. Learners will have access to online lectures for the respective modules within the degree programme, and receive facilitated coaching and instruction from SIT faculty through online platforms. This approach will provide learners with greater flexibility and ownership over their learning journey and pace, minimising disruptions in their work and personal lives.
- **Collaborative Engagement with Industry Partners:** The new pathway has been developed in close consultation with industry partners. This collaborative process ensures that both the industry's training needs as well as adult learners' upgrading aspirations are met.

SIT will pilot the new Competency-Based Workplace Learning Pathway in the following degree programmes from September 2021:

- **Bachelor of Engineering in Information and Communications Technology (Information Security)**, in collaboration with Ensign InfoSecurity Pte. Ltd.;
- **Bachelor of Engineering and Master of Engineering Technology in Sustainable Infrastructure Engineering (Land)**, in collaboration with LTA, SBS Transit Ltd and SMRT Corporation Ltd.

## SkillsFuture Month @SIT

Anchored around its theme of "Supporting Industry Transformation through Upskilling Singapore Workforce", SkillsFuture Month @SIT features a series of online workshops on trends in areas such as Digitalisation, Smart Manufacturing, Design Innovation and Sustainability, Health and Food Innovation, and Community & Social Services, amongst others. Held in partnership with SkillsFuture Singapore (SSG) and supported by the Institutes of Higher Learning (IHLs), participants at these workshops can look forward to gaining insights from industry leaders and IHLs, and discover learning opportunities to be future-ready.



# Singapore Institute of Technology Appoints Professor Chua Kee Chaing as its Third President

Leadership transition will take effect from 1 January 2022

📅 03 September 2021



From left: Prof Tan Thiam Soon, Prof Chua Kee Chaing, Prof John Thong

The Singapore Institute of Technology (SIT) will appoint current SIT Deputy President (Academic) & Provost **Professor Chua Kee Chaing as President-designate from 1 September 2021, and President with effect from 1 January 2022**. Prof Chua, who will be SIT’s third President, will succeed Professor Tan Thiam Soon who is stepping down as President after nine years in the role.

Prof Tan became SIT’s second President in early 2013 and his first task was to steer SIT to become Singapore’s fifth autonomous university, which was achieved in March 2014, and launched SIT’s first suite of its own programmes that year. He adopted the applied learning pedagogy and introduced the Integrated Work Study Programme which today, is a signature programme of SIT. He also led the effort to get approval for the construction of a new campus in Punggol, which is conceptualised as a living lab to support applied learning. Today, SIT students are well-received by industry and enjoy good employment outcomes.

Prof Chua joined SIT in September 2019 and has led the university’s development in academic policies and curriculum, applied learning and applied research, faculty development, as well as student administration. Prior to joining SIT, Prof Chua was the Dean of the Faculty of Engineering at the National University of Singapore (NUS).

**Professor John Thong, the current SIT Vice Provost, will be appointed Deputy President (Academic) & Provost-designate from 1 September 2021 and assume the role of Deputy President (Academic) & Provost with effect from 1 January 2022**, succeeding Prof Chua. Prof Thong joined SIT in August 2020 and has worked closely with Prof Chua on academic policies and curriculum. Prior to joining SIT, Prof Thong was the Head of the Department of Electrical and Computer Engineering at NUS.

At SIT, Prof Chua has started various initiatives to deepen SIT’s applied learning pedagogy. These include reorganising the academic structure into a matrix of faculty clusters and programmes; harmonising SIT’s suite of education programmes to help students achieve mastery of disciplinary knowledge, skills and agility; as well as weaving interdisciplinary learning into the curriculum to mould highly employable and adaptable graduates. He has also positioned the University to strategically grow its applied research and pioneer a competency-based workplace learning pathway to support upskilling of in-employment learners.

Prof Tan will continue to be an integral part of SIT’s leadership as Institute Professor, supporting the new President in the University’s continued efforts in community and donor engagements, as well as mentoring younger leaders. He will also continue to contribute to industry in his roles as the Deputy Chairman of the Building Construction Authority and board member of the Land Transport Authority.

“I express my warmest gratitude to Thiam Soon for his visionary and exceptional leadership as President over the last nine years. I have every confidence that SIT will continue to grow and thrive under the leadership of Kee Chaing, who possesses the strategic vision and expertise to solidify SIT’s reputation as Singapore’s premier University of Applied Learning,” said Mr Ng Yat Chung, Chairman, Board of Trustees, SIT.

Prof Chua added, “I am deeply honoured to be given the opportunity to lead SIT into its next phase of growth and I look forward to working with all stakeholders of SIT to further strengthen our mission as Singapore’s premier University of Applied Learning”.

*Click links for full biographies of Prof Chua and Prof Thong*



# Immersive Tech Changes How SIT Students Learn

SIT ramps up its AR, VR and MR offerings in learning and applied research as immersive technology is increasingly adopted in education and innovation

📅 03 September 2021



Immersive technology – a broad term that commonly refers to augmented, virtual, and mixed reality (AR, VR and MR) – is used to make teaching and learning experiences more engaging at SIT.

It is one of the ways Assoc Prof Tan Chek Tien uses to make online lectures interesting for his Computer Science students. In one 360-degree recording video, he was seen decked in full cycling gear as he made his way to the lecture theatre in SIT@NYP Building to deliver his lecture. It was also a nod to a semester-long project the students had worked on, using virtual reality to educate cyclists on safe riding habits.



In this 360-degree video, students can move around to examine the surroundings as Assoc Prof Tan cycles to deliver the lecture at SIT@NYP.

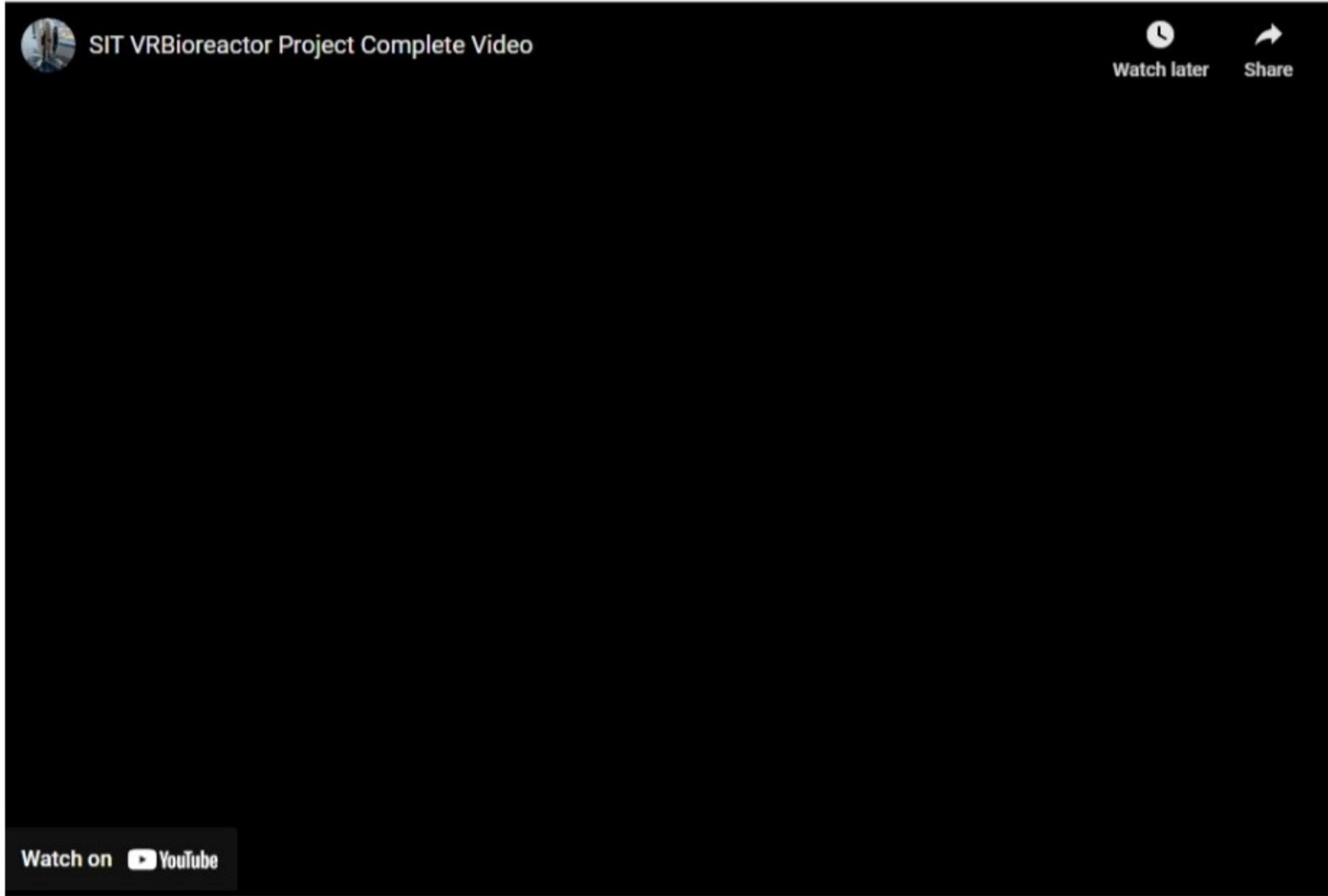
In another video, he placed a red dinosaur plushie in the audience and gave bonus points to students who could answer who else was in the room with him in a pop quiz at the end of the lesson.

Although it took more effort than usual to record these videos, they were effective and fairly simple ways of using immersive technology to make online lectures interesting for students.

“We know that sometimes students can disengage, so I put in Easter eggs for them to pick out, to gamify the lecture through immersive technology tools,” Assoc Prof Tan said. He added, “students gave good feedback about the lessons.”

Immersive technology also includes virtual reality headsets, 360-degree cameras, and smart glasses. These tech tools are used to simulate real-world experiences for students, so they get to practice their skills in a safe and controlled environment before trying their hand at the real deal.

## Applying Real Skills on Virtual Machines



A video about the VR simulation of a bioreactor for Pharmaceutical Engineering students.

At SIT, Pharmaceutical Engineering students are required to culture cells in a bioreactor machine as part of their lab work. However, their opportunities were limited as there was only one such unit in school and not all students were proficient enough to operate them. Hence, virtual reality – by getting students to work on a simulation of a bioreactor – was one way to bridge the gap.

With the virtual copy of the bioreactor, students are transported to a virtual world after putting on specialised virtual reality goggles and they could then practice culturing cells in the simulated environment.

## Exploring the Potential of Immersive Tech

Targeted to be ready by the third quarter of 2021, SIT’s upcoming Centre for Immersification aims to deepen Singapore’s applied research in immersive technology, and develop solutions and tools that can be used not just in SIT, but also shared with the industry and the public.

“We are creating a strong foothold in SIT to do research in the immersive technology space. We want to explore how we can make immersive technology more accessible to everyone,” Assoc Prof Tan said.

The university is currently working on more than 10 applied research projects that focus on immersive technologies, in collaboration with various industry partners.



VR/AR headsets will be made available for students to use at the upcoming Centre for Immersification, SIT@SP Building.



# The Nutritional Way to Health

SITizens from the Dietetics and Nutrition as well as Nursing programmes were treated to a lecture by Dr Ang Poon Liat, the paediatrician and author who has also made possible the Dr Ang Poon Liat Bursary at SIT

📅 03 September 2021

The adage “You are what you eat” was explored in greater detail at a special lecture given by Dr Ang Poon Liat at the Singapore Institute of Technology (SIT) on Friday, 20 August 2021.

A paediatrician with over 45 years of clinical practice, Dr Ang has a special interest in nutrition and its impact on childhood development, health, behavioural disorders and ageing. He has written two books – *The Wonders of Nutrition*, which details how genes and our dynamic bodies respond to food and lifestyle, as well as *Roadmaps to Recovery*, which explains how correct and balanced nutrition plays a pivotal role in healing chronic degenerative diseases. In 2020, he also made possible the **Dr Ang Poon Liat Bursary** at SIT to support undergraduates at SIT who are pursuing a degree programme in Dietetics and Nutrition or Nursing.



Dr Ang Poon Liat, who has made possible the Dr Ang Poon Liat Bursary at SIT, giving a lecture on countering the effects of rapid ageing through correct nutrition and lifestyle choices.

Along with faculty, more than 20 students from both degree programmes attended the lecture which focused on the effects of rapid ageing, and how food and lifestyle can help reduce the effects of chronic degenerative diseases. They also received copies of Dr Ang’s books. This lecture is the first part of a six-lecture series with the theme “Food for Health” that Dr Ang gives publicly.

Among those who attended the lecture was Ms Stephanie Tan, a Year 2 Dietetics and Nutrition student. She said, “The highlight for me was definitely the Question & Answer portion as my classmates and I had similar questions – for example if a keto diet was sustainable. After the lecture, we also continued talking to Dr Ang further clarify our thoughts. My biggest takeaway was definitely to keep an open mind in learning.”

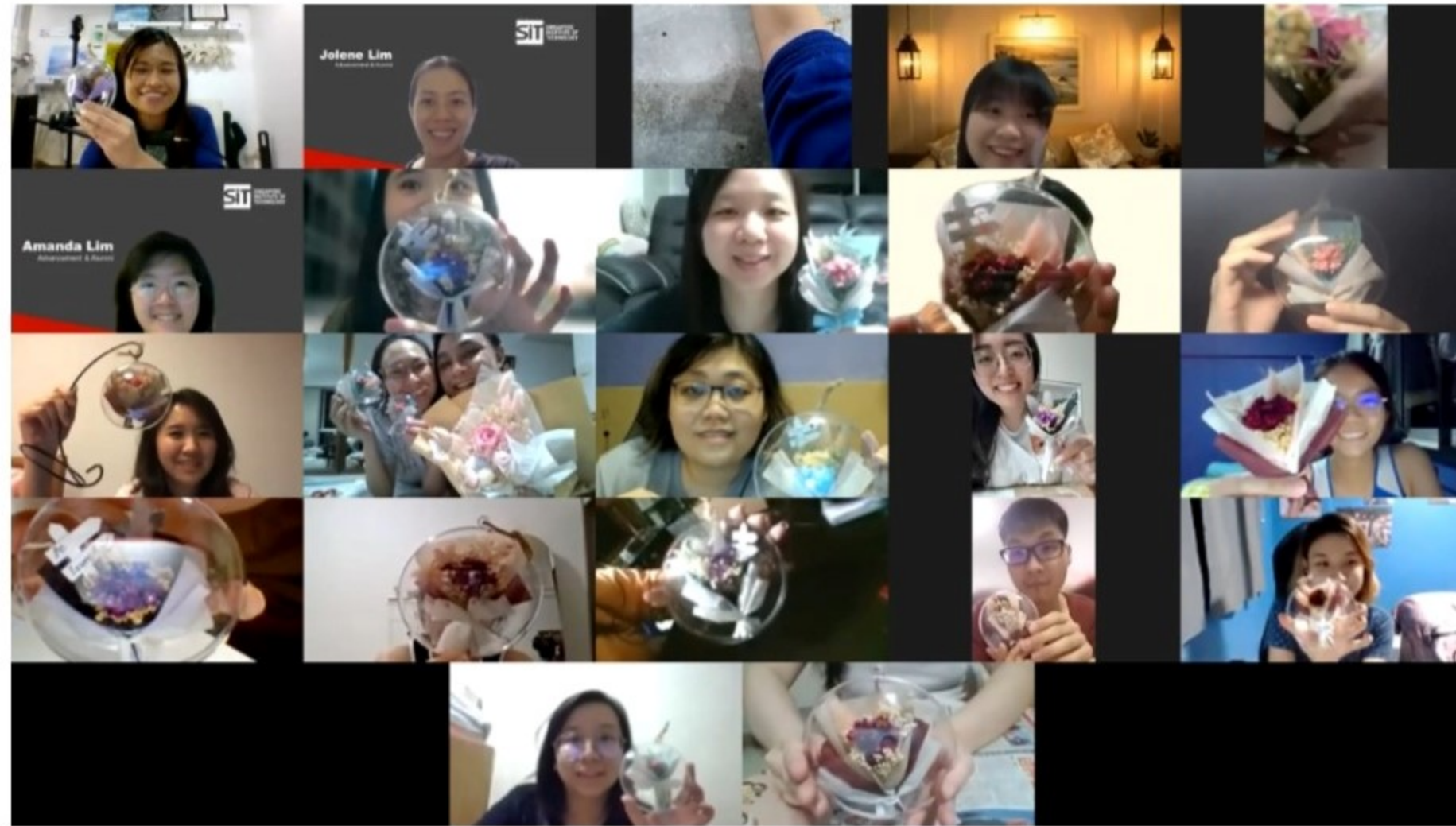
Said Dr Ang, “I very much enjoyed interacting with the students through this lecture. After they graduate, these Nursing as well as Dietetics and Nutrition students from SIT will help drive patient care in Singapore, and I hope they have gained some knowledge or ideas today that will prove useful in their future work.”



# Beauty in a Capsule

SITizens try their hand at mini Korean-style bouquet wrapping, capturing preserved flowers in a capsule at a workshop organised by the SIT Alumni Leisure Network

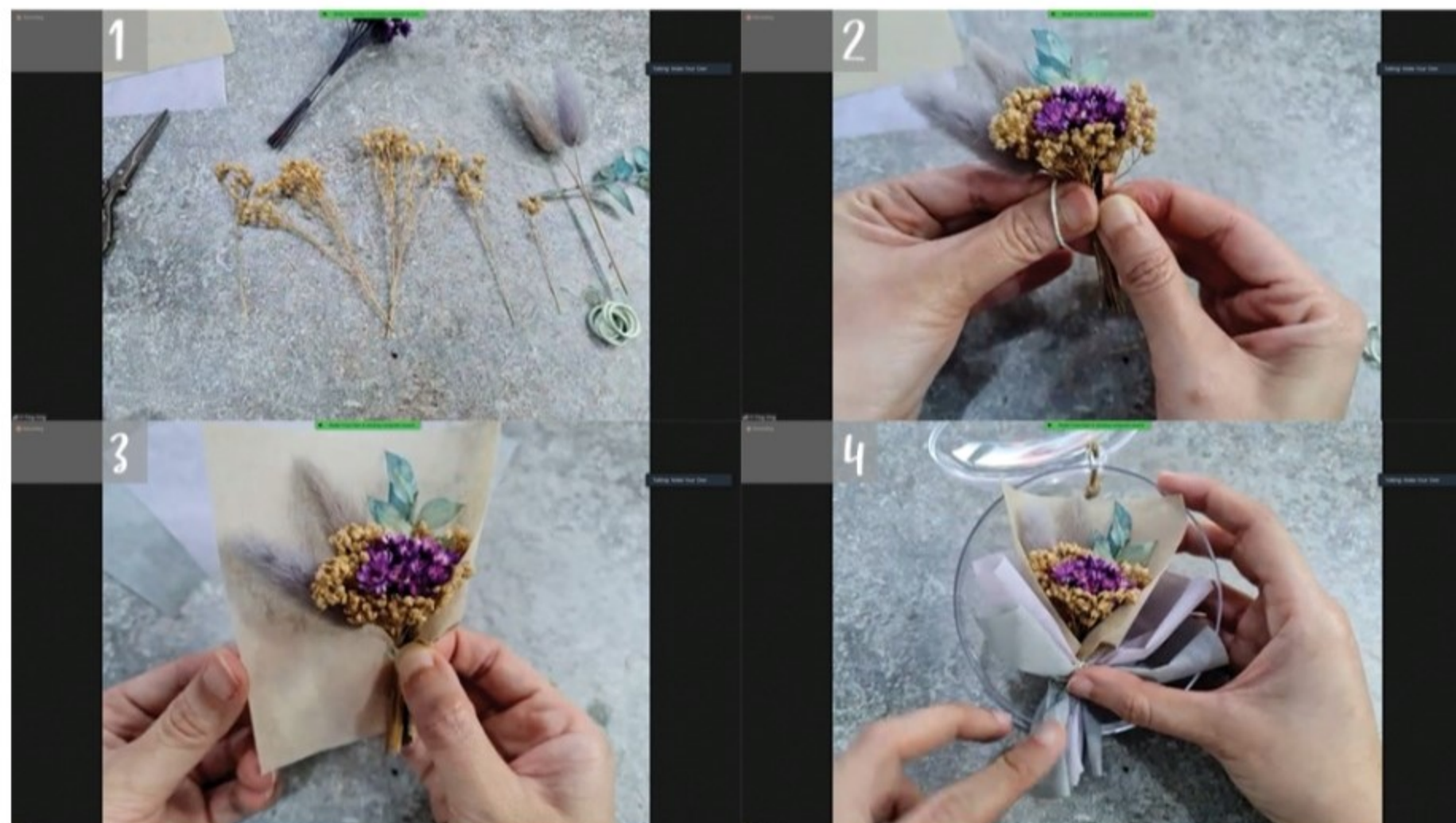
03 September 2021



Floral arrangements can be a simple and effective way to beautify a space, or just be great mood boosters when you look at them. From 28-29 August 2021, a total of 55 SITizens gathered on Zoom to learn the basics of floral arrangement and mini bouquet wrapping at the Floral Capsule workshop, organised by the SIT Alumni Leisure Network and led by Ms Ong Yi Ting from DIY workshop café Make Your Own.

Working with a selection of dried flowers – with unique names such as the star flower, bunny tail and broom, as well as a clear, oval-shaped capsule to contain their completed bouquet – the participants started off by selecting their main and secondary flowers, which would determine the focal and complementary points of the bouquet.

Ms Sayaka Tatekura, a Chemical Engineering graduate, who had previously attended other types of floral arrangement workshops such as box flower arrangements, felt that this was relatively easy to follow. “I enjoyed putting the bouquet in the capsule and it was nice to see everything come together so nicely,” she said. To complete the look, the participants were also given a black stand to hang the capsule and display their handiwork.



Step 1: Select your flowers and arrange them in an attractive manner; Step 2: Secure your bouquet with rubber bands; Step 3: Wrap your bouquet with layers of wrapping paper; Step 4: Fit bouquet in a capsule and hang it up!

Dried flower arrangements have been gaining popularity over the years due to their longevity. Ms Ong explained that such flower arrangements can last for at least two years before disintegrating. Before securing their bouquets in the capsule, the participants also received tips on how to wrap them in an attractive manner with layers of wrapping paper.

Mechatronics alumnus Mr Muhammad Zulfiqar felt the process was much easier than expected. “It was quite enjoyable, and the finished product looks beautiful and easy to maintain,” he said, adding that it would also make a great gift for loved ones. “I gave it to my fiancée and she melted,” he revealed. “She gave me an A-star for effort since it was hand-made and way more special than just buying from a shop.”



# Calibrating Wellness

Computing Science alum Mr Bryan Se To starts digital platform linking users to practitioners providing pain-relief solutions

📅 03 September 2021



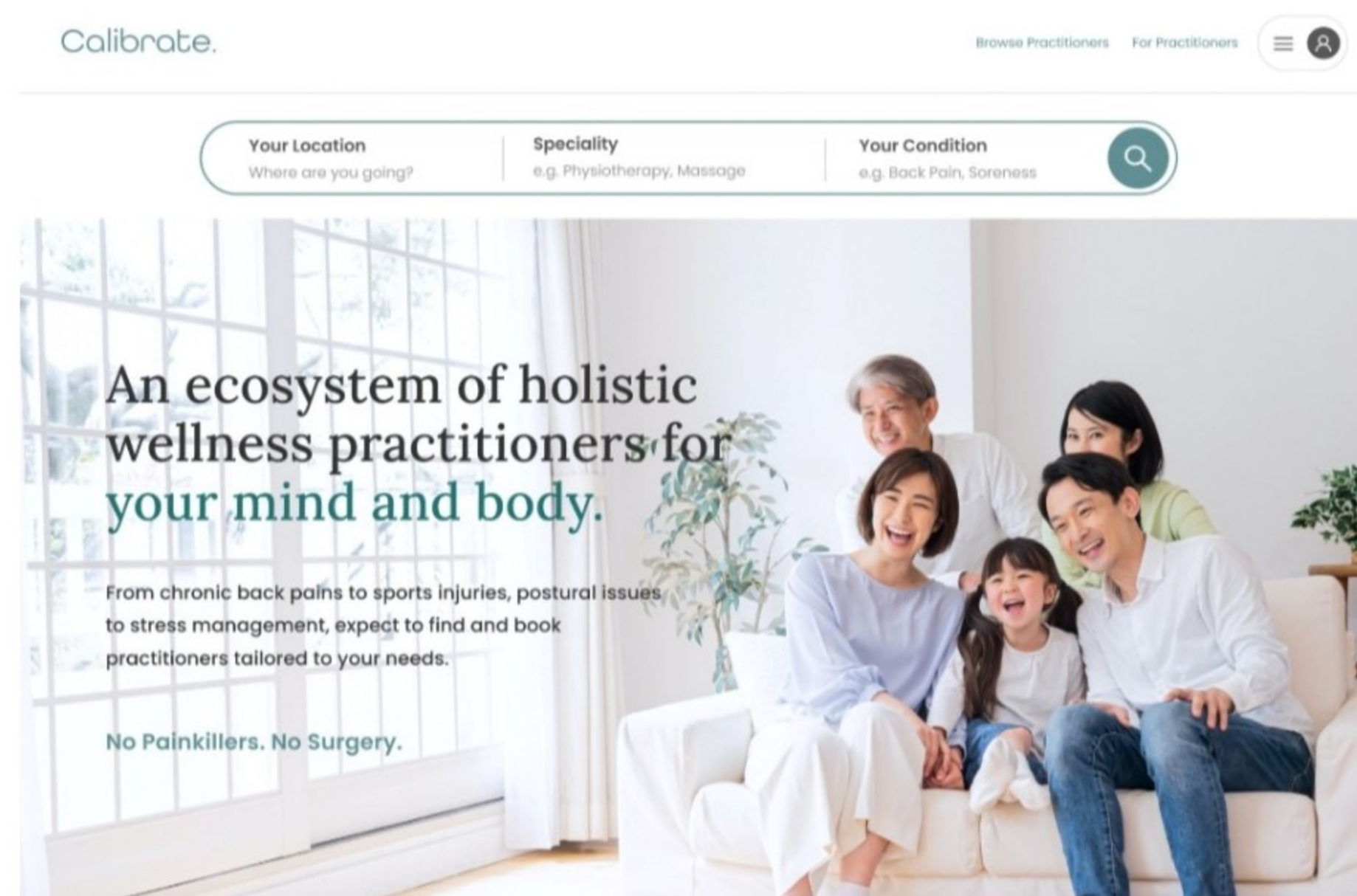
It was a wake-up call for Computing Science graduate Mr Bryan Se To that motivated him to develop [Calibrate](#), a digital wellness platform.

The then 24 year-old tech consultant brushed off the numbness or tingling sensation experienced in his fingers and feet, until he found out via x-ray that he had a suspected case of pinched nerve. His doctor informed him that he has the body of a 40 year-old.

Bryan said, “Imagine someone telling you that you have your dad’s body! I was very frightened because I realised my posture for sitting, walking and sleeping has been wrong my entire life.” He realised he was not alone in his suffering after speaking to his managers. It turns out that they too were experiencing pain from the long hours at work but did not know how or where to seek help.

Drawing from the technical skills he acquired from his Bachelor of Science in Computing Science degree, Mr Se To built [Calibrate](#). “From coding to software development framework, I’m implementing most of what I know at my startup. The various leadership positions I’ve held and student leadership boot camps I’ve experienced also helped me in influencing and inspiring my team at Calibrate,” he shared.

Launched in July 2021, the web-based application currently lists 27 businesses with a total of 61 practitioners. Calibrate focuses on optimising well-being through pain relief or pain management for sports injuries, postural issues and stress management, and users can find and book a practitioner under 20 minutes on the platform.



Calibrate is a centralised marketplace to find and book wellness practitioners from specialties such as Traditional Chinese Medicine, Physiotherapy, Chiropractic, Sports Massage and more.

To do so, they can browse the practitioners that they are keen to seek treatment for (e.g. sports massage, physiotherapy, chiropractic), or select options based on their condition (e.g. back pain, body ache, etc), and make a booking on the system.

His sister Ms Maryann Se To has joined him in the business part-time since October 2020, but they only made the leap to full-time work on Calibrate in February 2021, after receiving the Startup SG Founder Grant. The grant is awarded to first-time entrepreneurs with differentiated businesses that identify a specific need and seek to address it.

Maryann now takes care of areas such as growth, partnerships, operations and business development, while Bryan tackles technology matters such as product discovery, design, delivery, maintenance and enhancement.

What will be his markers of success for Calibrate? “Recurring consistent profit, the number of countries expanded to, as well as when Calibrate becomes a listed company,” Bryan said. He is currently working on product market fit and for their upcoming milestone, the team is producing an AI powered assessment to empower users to quickly select, book and pay their practitioners under 5 minutes.

To find out more, check out Calibrate [here](#).



# Sweat It Out with Saturday Zoom-ba

Forget about form or control! SITizens let loose and feel the beat with latin and salsa-style music at the SIT Alumni Sports Network's online Zoom session

📅 03 September 2021



On Saturday, 14 August 2021, SIT alumni joined the SIT Alumni Sports Network and Mr Christian Navales from JR Fitness for an online Zumba session. While previous home workouts such as Barre and Pilates focused on form and controlled movements, this session was all about letting loose in a non-stop, hour long dance session.

Zumba makes use of dynamic movements to combine all elements of fitness – cardio, muscle-conditioning, balance and flexibility. Ms Looi Jia En, an Aeronautical Engineering alumnus, was trying Zumba for the first time. “I think it was quite interesting as it has dance elements, and it’s suitable for all ages,” she said.

While instructors usually use latin and salsa-style music for the workout, Zumba instructor Mr Navales also incorporated remixes from popular artists such as BTS. Accountancy alumnus Mr Peh Pei Sheng enjoyed that the instructor was motivational with high energy. “I had no idea what Zumba was, and I was surprised that it’s such a fun exercise with dance moves,” he said. “It did not feel like exercise, even though I was sweating profusely. Great for a couch potato like me!”