TUM Asia

A newsletter from Technical University of Munich Asia

digest

September - December 2019 Issue

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German Institute of Science & Technology – TUM Asia Pte Ltd

director's message

Warm greetings to all our students, alumni and readers!

It has been an exciting quarter for TUM and TUM Asia with numerous celebrations. TUM secured the title "University of Excellence" for the third time in succession. TUM is the only technical university to place among the winners of the federal and state level competition since its inception in 2006, attesting to the strength of TUM's profile. At TUM's campus in Singapore, we follow TUM's footsteps to promote the next generation talent and diversity in Asia, while encouraging meaningful exchanges among our students and professors. Read more about the exciting things that one can expect for the future of TUM on pages 4 – 5.

Besides TUM Asia's 16th Graduation ceremony, we most recently welcomed our 9th and 18th cohort of Bachelor and Master students respectively. One highlight of our Master programmes is the opportunity to meet classmates from all over the world. We were delighted to speak to two of our new Master students, who are studying in different courses, coming from different backgrounds and places. Find out why they decided to leave their homes to study in Singapore and what they hope to achieve in this new chapter of their life on pages 6 – 8.

We also spoke with Ryan, a recent graduand from the Bachelor of Science in Chemical Engineering programme. He shared his story on how he came across an unexpected internship opportunity after completing his Overseas Immersion Programme in Munich, Germany. His internship with Linde Gas extended his stay there, while leaving him with many impressionable memories. Read more about his unique internship experience on pages 12 and 13.

Finally, we would like to thank all our readers for your support throughout the years in reading our DIGEST newsletter. Starting from 2020, we will be revamping our DIGEST and Verbinden Alumni newsletter into a new publication. We look forward to sharing this publication with you in 2020. In the meantime, we hope you will enjoy this final issue of DIGEST.

Yours Sincerely,

Dr. Markus Wächter
Managing Director, TUM Asia

IN TOP FORM FOR THE FUTURE

TUM remains University of Excellence

The Technical University of Munich (TUM) has secured the title **"University of Excellence"** for the third time in succession. As announced today by Anja Karliczek, the Federal Minister for Education and Research, the excellence strategy **"TUM.THE ENTREPRENEURIAL UNIVERSITY – Innovation by Talents, Excellence, and Responsibility"** proved a winning formula. That makes TUM the only technical university to place among the winners in every round since the inception of the federal and state-level excellence competition in 2006.

"After securing this latest accomplishment, I will be pleased to hand over the office of president to my successor, Thomas Hofmann, on October 1," said President Wolfgang A. Herrmann, who has been in office for 24 years. "Our far-reaching and consistent reform efforts over the past two decades have proved that we were on the right track. We have set new standards in many areas, and are now positioned among the leaders and ready for the future." The President thanked the State of Bavaria for the ongoing support of his university. With the prize money of 105 million euros for the 2019 - 2026 period, the TUM Agenda 2030 can now be implemented.

TUM Agenda 2030

The TUM Agenda 2030 is centered around the development of talent and competencies on all levels. This is reflected in the realignment of engineering education to embrace the concept of human-centered engineering (approx. 31 million euros), integrated into massive restructuring efforts in the humanities and social sciences and the establishment of the interdisciplinary institutes for Technology Design, Data Science and Life Long Learning. By re-anchoring the idea of "German engineering", with its sterling reputation, within the process of societal transformation, TUM is blazing a new trail in the German university landscape. The Munich Center for Technology in Society (MCTS), established after the success in the 2012 Excellence Initiative, will play a key role in that regard.

Photo: TUM

From the departmental structure to a school system

The new governance structures will bring about extensive substantive and organizational changes to promote a stronger international presence and more interdisciplinary activity: The familiar 15 departments will be replaced by seven schools that will widen TUM's radius of action at the interfaces of the classical disciplines. With the TUM Innovation Networks (16 million euros), research-driven thematic areas will be established to place the focus of engineering and medical research on the big challenges facing society. TUM's successful medical activities (university hospital Klinikum rechts der Isar, German Heart Center) will be positioned within a matrix structure encompassing the full range of fields covered by TUM, along with medical research conducted outside academia.

Gain in international competency for the administration

The research administration functions at TUM are leaving behind their established procedures in favor of a more customer-focused, digital and international approach, inspired by the dynamic developments in scientific research at TUM and the university's global networking. For this purpose, TUM will invest approximately 9 million euros. Under the Maximilian Graf Montgelas Program, administrative personnel will have the opportunity to gain international experience through postings abroad. TUM is also establishing a university marketing function from the ground up – the first of its kind in German academia. It will also integrate the existing national and international scientific communication activities (5 million euros)

Leading-edge research; promotion of careers and advancement of women

Leading-edge international research will be promoted with 4.5 million euros in funding for the existing, highly successful TUM Institute for Advanced Study (TUM-IAS). Meanwhile, the new Angela Molitoris Program will receive 10 million euros from the TUM budget to invest in the advancement of women (outstanding students, academic staff and professors). Meanwhile, CareerDesign@TUM points the way forward for German universities: This innovative career program will help to spot talent in mid-level academic functions with the support of the Institute for Life Long Learning, which also addresses the needs of alumni in the career world in the age of rapid digitalization and biologization of engineering sciences.

Internationalization via TUM.Global: Focus on Europe and Africa

Two decades after the successful creation of the Asian network (including TUM.Asia in Singapore, starting in 2001), TUM is directing its attention to Europe (e.g. TUM.London) and is also mounting a concerted effort to establish a presence on the African continent (TUM.Africa). The renowned Imperial College London will play a key role in TUM's European alliance structure from this time onward.

ONE MUNICH: networking strategy in the metropolitan region

The extraordinary academic and entrepreneurial environment in the European metropolitan region of Munich is the basis for the thematic focus of the ONE MUNICH strategy. "Competition no longer takes place between individual universities, but rather between locations and regions," said future TUM President Thomas Hofmann. "Munich can easily compete with Berlin or even regions like Boston and San Francisco." Munich's two top universities, TUM and LMU, coordinate their regional alliance at the presidential level. The alliance, which has been proving its worth in terms of research for years, is now being placed on a strategic footing.

Comprehensive reform package, 2019 - 2026

To achieve its ambitious goals and generate beneficial effects for the entire German university system, TUM will also make substantial investments with its own funds in TUM Agenda 2030, which will be the most far-reaching transformation process in its 150-year history. For the entire project, a total of over 270 million euros is budgeted.

This article was first published on TUM's website at: **https://www.tum.de/nc/en/about-tum/news/press-releases/details/35585/**

STUDENT FEATURE

New Chapter, New Prospects

Alejandro Illan Manzano
Rail, Transport and Logistics
Mexico

Yuanyuan Yin
Integrated Circuit Design
China

As our Master of Science students embark on their first semester in the various Master programmes, our DIGEST team took the opportunity to speak to two of our new Master students to find out more about how they have been adjusting to their studies and living in Singapore.

Hello, can you give our readers a short introduction of yourself?

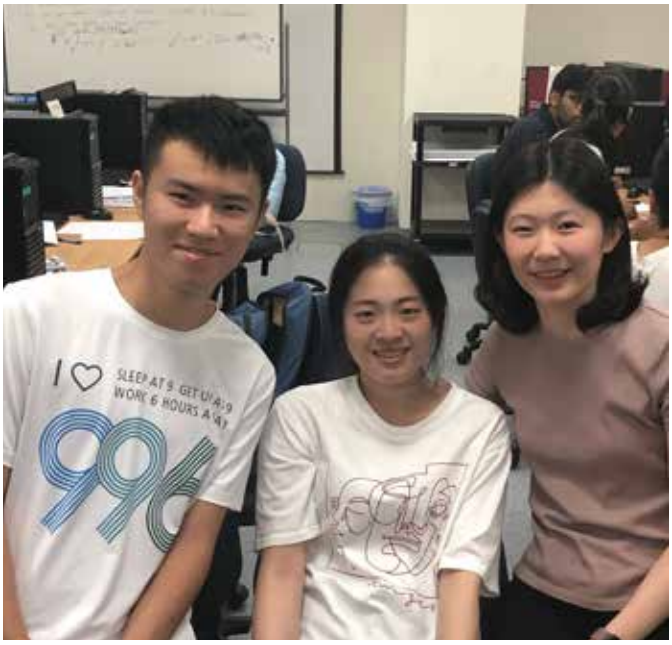
Alejandro: Hi! I come from San Luis Potosi, Mexico. I am very excited to be here in Singapore! I am studying the Master degree in Rail, Transportation, Logistics.

Yuanyuan: Hello! I come from Beijing, China. I majored in Microelectronics, and am currently studying in the Integrated Circuit Design programme.

What attracted you to study in Singapore?

Alejandro: Honestly, I was not convinced of studying a Masters as I was doing very well with my family, friends and in my job. Nevertheless, I know that having a Master degree is a huge advantage to be internationally competitive. I was also doing logistics at work, and I decided that this is what I want to do in different parts of the world. I looked up for Master programmes focused on this field. I was initially keen to go back to Germany having studied at TUM's Munich campus in the past. However after chancing upon TUM Asia and finding out the programme would be conducted in Singapore, I decided on that right away! I researched about Singapore and there were so many positive aspects that I could learn from the country. Logistics wise, there are tons of different areas where this field is applied.

Yuanyuan: With some exposure to IC design during my undergraduate curriculum, I felt a strong connection to this area of interest. I wanted to prepare for a future career in IC Design and applying to a suitable graduate programme to fully equip myself in this discipline was my response to that interest. I found the programme offered at TUM Asia to meet my requirements. The courses were given by professors from two prestigious universities – NTU and TUM. The module schedules are sequential,



Yuanyuan (right) with her classmates

which means that I only need to focus on one module during its two-week period before moving on to the next one. This special arrangement would help me to be totally focused on each module. The most attractive part about this Master degree is the one year of studying combined with an internship and dissertation; this distinguishes it from other programs, making it my first choice.

How has it been like adjusting to living away from home?

Alejandro: I have visited Singapore back in 2014 when I was living in Bangkok. I really loved the place and could not stop going to the Gardens by the Bay and I am still going there today. Language is not a problem and the public transportation in Singapore is well connected and clean. I am having such a great time that I have not felt even close to homesick. The only aspect I am still getting used to it is the weather as it is very hot and humid as compared to Mexico.

Yuanyuan: Singapore impressed me with its clean streets and beautiful plants. As a Chinese, I find it very easy to adapt to life in Singapore as many people speak Mandarin Chinese. It is very convenient if you do not feel like cooking because there are food courts everywhere.

"what I appreciate is that all the professors that have taught me are excellent in their areas. I know that the person in front teaching me is a person that is well prepared and knows exactly about the topic as it is their expertise."

Alejandro Illan Manzano

Has anything stood out to you so far from studying at TUM Asia?

Alejandro: In the past, I have attended university courses in Thailand, the United States, Germany, and Mexico. TUM Asia has a different way of teaching and what I appreciate is that all the professors that have taught me are excellent in their areas. They have done so many important projects or had great collaborations with companies, universities, and the government. I know that the person in front teaching me is a person that is well prepared and knows exactly about the topic as it is their expertise.

Yuanyuan: We just finished our first course in Digital IC Design. The class was intensive and required some background knowledge. By placing in some effort, it goes a long way in terms of knowledge gained. Our professors are also very kind and patient and you can always ask them if you have any questions.

"The most attractive part about this Master degree is the one year of studying combined with an internship and dissertation; this distinguishes it from other programs, making it my first choice."

Yuanyuan Yin


Alejandro at his favourite place in Singapore, Gardens by the Bay

Photos: Alejandro, Yuanyuan, TUM Asia

What do you hope to learn while being in this Master's programme?

Alejandro: I want to learn the content of the courses I am enrolled to and gain the full perspective and the opinion of the TUM professors teaching me. They are the experts and they know a lot through experience on how to deal with real-life situations of logistics. I am also excited to learn about the mindsets of my classmates. My classmates come from India, China, Singapore, Colombia, Indonesia, Malaysia, and Jamaica. It was very interesting when we had discussions and compared point of views from different situations.

Yuanyuan: I hope to get some exposure to different fields in IC design and find a specific field that I am interested in. I would also like to get both theoretical knowledge and practice experience which are enough for me to start a career in the IC design field.

Alejandro (second from right) with his Orientation team mates

"Language is not a problem and the public transportation in Singapore is well connected and clean. I am having such a great time that I have not felt even close to homesick."

Alejandro Illan Manzano

What is one area of Engineering that you hope to make an impact in next time?

Alejandro: I am very interested in environmental engineering. I would like to dedicate more in this area as we are currently facing the different effects of climate change. I know that supply chain management, other processes where logistics are involved, green energy and sustainability can improve in many ways. The next step I am really looking forward is to work in this field and hopefully to be able to improve the daily activities in the logistics field. By improving such areas, we can lessen the damage on our planet.

Yuanyuan: It must be in the IC design field, although I have yet to decide on which branch of IC design to focus on. It is a very promising field and full of challenges!

Yuanyuan together with her classmates and seniors

Course Provider: TUM Asia

Knowledge Partners: TÜV SÜD, Fraunhofer Singapore

LEARN

AWARENESS - APPRECIATION - ADOPTION

LEARN Progamme Pioneer Batch

"Engineer Your Smart Factory Blueprint" Workshop

The LEARN Workshop on "Engineer Your Smart Factory Blueprint" Is part of the TUM Asia LEARN Programme targeted to guide companies in their digital transformation strategies and implement change.

During the workshop, participants will generate actionable problem statements through design thinking methodology leading to a solution blueprint that transforms their existing factory into a smart factory. Participants will also be introduced to TÜV SÜD solution taxonomy and Fraunhofer digital media technology.

DATES

25 - 27 September 2019

TIME

9:00AM to 6:00PM

VENUE

TUM Asia Campus
510 Dover Road
SIT@SP Building, Level 5
Singapore 139660

FEES

$3,000 per company

WHO SHOULD ATTEND

• For manufacturing (i.e. automation, electrical/ electronic, food, medical technology), machinery and systems, precision engineering and logistics sectors

• **Recommended team size and composition:**
- 1 x Senior Management
- 1 x Operations
- 1 x Supply Chain
- 1 x Engineering
- 1 x Human Resource

REGISTRATION

For more information about the LEARN Programme, please visit:
https://tum-asia.edu.sg/learn/
or email **exd@tum-asia.edu.sg**

WORKSHOP OBJECTIVES

• Understand and apply SIRI and the PM
• Understand core principles, frameworks and methodologies of Industry 4.0
• Determine the aspirational state of the company guided by its business objectives
• Generate actionable problem statements in Industry 4.0 focus areas
• Introduction to TÜV SÜD solution taxonomy and Fraunhofer digital media technology

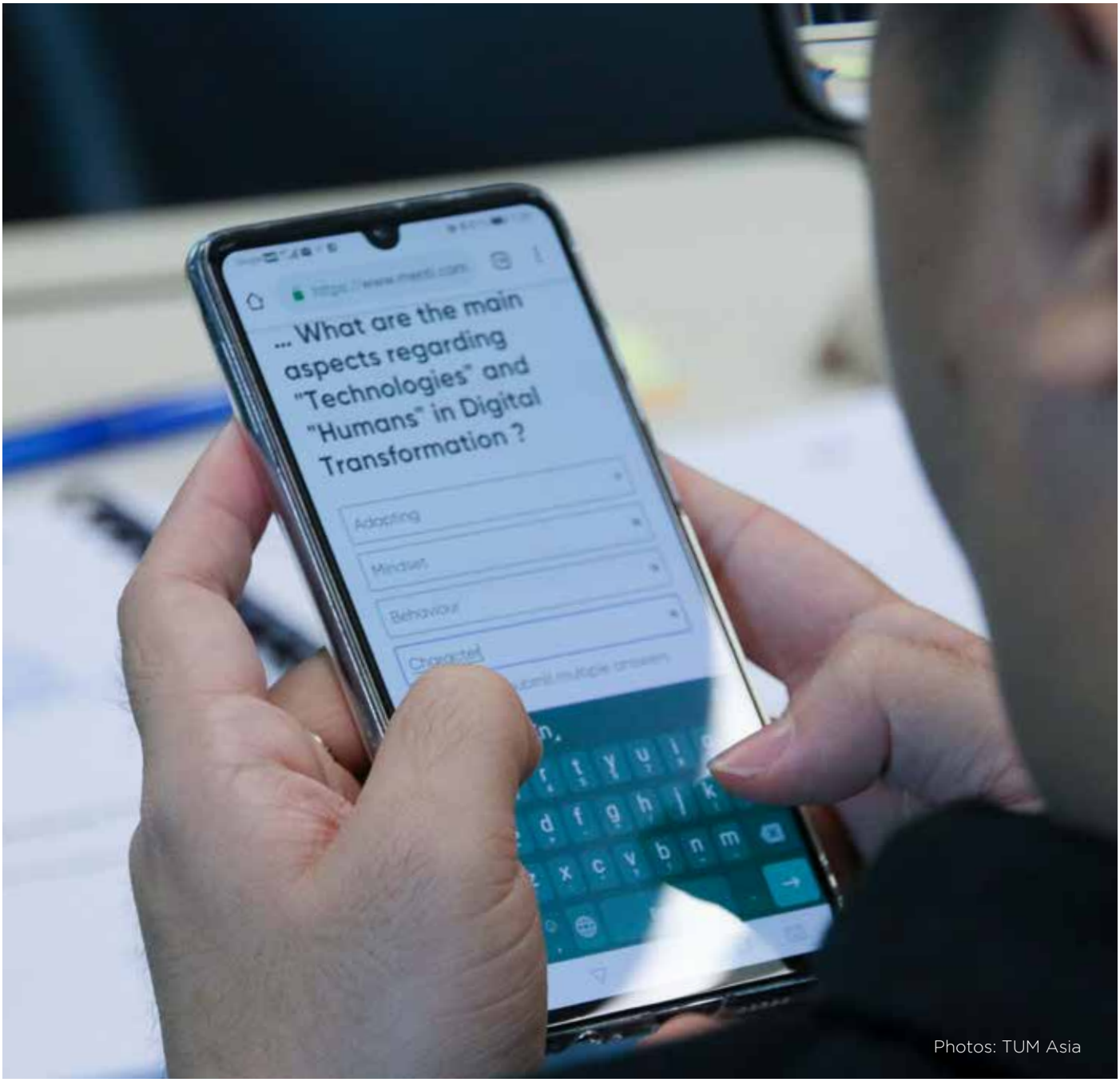
L	**LEARN, UNLEARN & RELEARN** Learn to identify company's maturity level and readiness based on SIRI and PM using proven methodologies
E	**EVALUATE** Evaluate existing process, technology, and organisation
A	**ACT** Act on refining problem statements using design thinking principles
R	**REVIEW** Review the current state of the company and frame problem statements with targeted Industry 4.0 focus areas
N	**NAVIGATE** Identify the right technology use cases based on business priorities, size of impact, and organizational readiness

WORKSHOP TRAINER

Frank Reppel
Managing Partner and Founder of Reppel & Partners Pte Ltd

Living in Singapore since 1997, Frank is leading digitalisation efforts, including business intelligence and Industry 4.0 projects, and has helped TÜD SÜD's Center of Excellence here in Singapore incubate its Industry 4.0 consulting practice. In that role, Frank was one of the very first accredited SSIRI workshop assessors and is a Singapore Certified Management Consultant.

The Future of Digitization and Industrial Production



Photos: TUM Asia

Digital Transformation continues to be a hot topic around the world. Industries are becoming increasingly digital. Terms like Industrie 4.0 (the 4th Industrial Revolution), Cyber-Physical Systems (CPS), Product-Service-Systems (PSS), Big Data or Artificial Intelligence (AI) has created massive awareness of the topic within many companies and among the public. There can be no doubt that beyond the hype, digitalization will transform industries. The technologies associated with it have changed the way we do business and will continue to do so.

From 29 July to 31 July 2019, TUM Asia held a 3-day Summer School, titled 'The Future of Digitization and Industrial Production'. This short programme was meant to be an insightful session for executive professionals, engineers, and managers keen to apply digitalization to their organizations.

Participants were able to gain in-depth knowledge of a range of the most relevant aspects on the digitalization of industries, while learning from each other through group discussions.


Fast food chain & delivery service
Pizza


Issues
1. Smartronics
2. Asset Health Monitoring & Servicing
- Physical Inspection
- Remote Monitoring
3. No real time information
4. Technologies + Policy

STUDENT FEATURE

A Special Internship Abroad

Ryan (left), with his colleagues at the Chair of Physical Chemistry where he did his Bachelor Thesis

He was all packed up and ready to head back from Germany to Singapore. However, he chanced upon a unique opportunity that became a life changing experience. The DIGEST Team catches up with Ryan, who graduated recently from the Bachelor of Science degree in Chemical Engineering, on his unique internship experience in Linde Gas.

Hi Ryan! Can you share with our readers how you landed your internship with Linde Gas?

Hello! The funny thing is that I did not plan for this opportunity at all. In fact, at the beginning of March 2019, I was already all prepared to head back to Singapore after completing my Overseas Immersion Programme (OIP). However, as I submitted my thesis to the Student Office, I was asked if I had any interest in taking up an internship with a local German company, whether I had any preferences in a specific field, such as battery research or reactor simulations. As a person who enjoys learning new things, my interest was piqued, and I figured that I might as well go for it regardless of the fields available. Thankfully luck was on my side! I was interviewed by a PhD student who was actively doing his research at an organization, which turned out to be Linde Gas. As he was interested in working with me as well, there was not much hesitation on my part to agree on the details. The company contract came within a week and altered the course on the next 5 months of my life.

How does it feel like working in a big and well-established company?

Initially, I felt somewhat pressured to be working in Linde Gas as they had really high standards to adhere to given the stellar reputation of the company and its recognition worldwide. However, my international colleagues treated me warmly and made me feel at ease throughout my internship. As the department I was interning at had many brilliant minds that exchanged ideas on a constant basis, it was a unique experience such that the work I was involved in deeply incorporated multiple aspects of knowledge that I had accrued during my studies and combined them into various practical industrial applications.

Tell us a little more about your day-to-day responsibilities during your internship!

I did my internship in the adsorption R&D division and my scope involved the supervision and conducting of experiments with a pilot experimental

set up of a high-pressure system. The results obtained were evaluated and conferred with my superiors on the next steps to be possibly taken in the research. We also did literature reviews plenty of in-depth discussions regarding the evaluations. Additionally, I also picked up programming work on the VBA (Visual Basic for Applications) platform to automatically evaluate raw data obtained from the main system control hub. One of my tasks involved refining the code that my supervisor had done previously himself. It was challenging as it was a lot to learn within a short time but when I eventually managed to tweak and improve it slightly, that was an amazing moment!

Working in an international company, was there anything that stood out to you?

Though I was just an intern, I felt that the work I did was not discounted in any way and my colleagues treated it very seriously, which made me value the importance of the work I did. I had the privilege of attending the division meetings and was involved in their discussions. I would be asked to provide opinions and inputs on topics that were deliberated on, before subsequently being asked on my thought process and reasoning behind them. My colleagues would also invite me out for gatherings on the weekends to places like Englischer Garten (English Garden) to just chill and relax. Everyone would bring something along, which meant that there was always plenty of food and drinks!

You spent a long time in Munich, Germany! Looking back, what were some of your highlights during your Overseas Immersion Programme (OIP)?

Having spent almost an entire year there, my top 3 memorable experiences would include traveling with friends to nearby countries, meeting with colleagues and hanging out with them socially and living like a local where the pace of life is enjoyable and comfortable. Elaborating on my travels to nearby countries, it would include spending Christmas in Croatia with my classmates, where we toured the night markets sprawled across many towns. There was so much revelry with the locals that you feel at home with them.

Ryan and his classmates atop Garmisch-Partenkirchen

Ryan (left), with Helko, his fellow R&D colleague

Ryan (left), with Dr Salazar, his internship supervisor

> **“Though I was just an intern, I felt that the work I did was not discounted in any way and my colleagues trated it very seriously, which made me value the importance of the work I did.”**

Now that you have come to the end of your Bachelor’s programme, what’s next for you?

I applied to study a Master of Science programme with TUM in Germany! While waiting for the results of my application, I am intending to travel while I can as a post-graduation trip since I would likely not have the time to do so once I start on my next phase in life. As much as I am inclined to admit that the relaxing and independent life I led there compels me to return, I do believe that having a higher education would be beneficial in the long run towards my future endeavors and provide me greater flexibility in my career options.

Herzlichen Glückwunsch, Class of 2019!

Photos: Dreamkatcher, Israel Tan Photography

On 16 July 2019, TUM Asia celebrated it's 16th commencement ceremony at The Star Theatre, The Star Performing Arts Centre. To date, over 1,500 Bachelor and Master degrees have been awarded to students studying at TUM Asia. The Class of 2019 comprised of a diverse range of graduands, coming from countries such as China, Germany, India, Indonesia, Malaysia, Mexico, Singapore, Spain, Taiwan, and Vietnam.

TUM Asia's 16th commencement ceremony included a special graduation ritual this year; one which involved the TUM delegation, faculty and partners from both Germany and Singapore, to be dressed in Academic dressing robes for a march-in procession, followed by the playing of the Singapore and German national anthems.

Professor Herrmann, President of TUM, who last attended TUM Asia's Graduation Ceremony during the 10th commencement ceremony, was very glad to be present. He warmly congratulated the graduands and ascertained that Graduation was just the start of their next chapter in life. "As a proud alumni and member of Technical University of Munich, I welcome you to the future of TUM. You now enrich the alumni community of TUM and we are proud of you."

For some graduands, it was a joyful experience for them to advance their studies and pursue their careers in desired industries as a professional or as a doctorate student. "A big thank you goes out to our family members, loved ones, and friends who have supported us in this journey," expressed Rajendran Gokulnath, the Valedictorian from the Master of Science programme, who took the time to thank the important people who helped him throughout his studies.


Class of
2019
GRADUATION CEREMONY


Class of
2019
GRADUATION CEREMONY
AMD
DELO
FESTO
PEPPERL+FUCHS
TUMCREATE

Summer Cultural Exchanges

Photos: Dreamkatcher, Israel Tan Photography

How would a Bachelor student make their summer holidays an unforgettable one? Well they could simply sign up for an international Summer School programme, which was what over one hundred students from various universities from India, Indonesia, Mainland China, Taiwan and the United States did this year. It was a unique experience for many to meet students across different countries, universities, and disciplines. What they had in common was their interest in learning something new in the area of Industrie 4.0.

Besides attending different lectures related to Smart Manufacturing and Smart Transportation Systems, the students were also able to experience different aspects of Germany and Singapore through German language classes, interactions with TUM Asia students through games, city tours around Singapore, a beer brewery processing tour together with a Bavarian lunch, among others. The students were also able explore how Industrie 4.0 is being applied at various companies in Singapore. “Singapore is a wonderful country. TUM Asia provided me a good chance to enjoy my summer filled with knowledge and fun activities,” said Liang Dong.

As the programme came to an end, each student shared their highlights and enjoyed the new friendships they had forged. “Our Smart Transportation lesson was unforgettable to me as it inspired me to consider more about other groups in society. Some small improvements can make a big impact to others. Moreover, it was closely related to my major and I now have a more specific idea on how to improve transportation in the future,” shared Wu Runzhe.

The summer school was open to undergraduate students keen to experience a short programme in another country during their vacation period. Stay tuned to the TUM Asia social media platforms or website for the next one!

For students interested in the 2020 Summer School, please look out for more updates on: **www.tum-asia.edu.sg/ss2020**

Photos: Israel Tan Photography

TUM Alumni Dinner – 14 July 2019

July was an eventful month at TUM Asia. TUM Asia was honoured to host a dinner for TUM Alumni in Singapore together with TUMCREATE and the Embassy of the Federal Republic of Germany to Singapore. TUM Asia was also happy to have the support from TVS-Asianics as our logistics provider for the TUM Jubila beer.

The participants were able to hear from President Herrmann and Professor Rieger reflecting on TUM's accomplishments. President Herrmann emphasized that TUM Asia and TUMCREATE were the strongholds of TUM in Singapore, which is a result of the many Bachelor, Masters and PhD from TUM residing in Singapore. "We are the first and the only foreign branch of a German University. Some have tried, some have failed, but we are still around and will continue to remain," said President Herrmann.


Photo: TUM Asia

TUM honors Singapore partner:
Golden Ring of Honor for former President Tony Tan

The former President of the Republic of Singapore, Dr. Tony Tan, was presented with TUM's Golden Ring of Honor by TUM President Wolfgang A. Herrmann during a visit by a TUM delegation to Singapore. The Technical University of Munich bestowed the honor in recognition of "the long-standing close ties with our friend, inspirational promoter of science and founder of the National Research Foundation".

Dr. Tony Tan was a strong supporter of TUM's campus in Singapore from the outset and as such has played a major role in the success of TUM Asia Pte. Ltd. since its foundation in 2002, according to Herrmann.

Dr. Tan held the office of President of the Republic of Singapore from 2011 to 2017 after serving in various ministries from 1995 to 2005 as Deputy Prime Minister. A graduate of mathematics and economics from the National University of Singapore, MIT and the University of Adelaide, Dr. Tan set up the CREATE joint research platform during his Chairmanship of the National Research Foundation (NRF). From 2007 onwards, he won numerous top international universities over to the CREATE platform (including MIT, Berkeley, ETH Zurich, TUM, Hebrew University, and Technion).

In Singapore, TUM Asia offers accredited Bachelor and Master degree programs. The research programs, currently supported by around 80 doctoral candidates, are organized within TUM CREATE. The research topics are mainly technical in nature with a focus on e-mobility for megacities, integrated traffic systems and smart logistics.

This article was first published on TUM's website at: **https://www.tum.de/nc/en/about-tum/news/press-releases/details/35587/**

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- Master of Science (Industrial Chemistry) by Technical University of Munich and National University of Singapore
- Master of Science (Integrated Circuit Design) by Technical University of Munich and Nanyang Technological University
- Master of Science (Rail, Transport and Logistics) by Technical University of Munich

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+ As rated by QS World Ranking 2015 - 2018

* As rated by Global University Employability Ranking 2018

**In partnership with Singapore Institute of Technology (SIT).

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