

ESD Fall

newsletter

2025



Welcome Greetings

Message by **Rakesh Nagi**

Professor, Head of Pillar ESD

Director of Aviation Studies Institute (ASI), SUTD

Welcome to a new academic year, where we are strongly advancing SUTD's positioning as the world's first Design-AI university. As Artificial Intelligence is fundamentally transforming the way we learn, conduct work, and more generally, live our lives, we are faced with a choice to embrace it and be the forerunner of ESD-AI or to be a follower. It's a rhetorical question, because ESD@SUTD always leads!

Under the backdrop of huge geopolitical uncertainties, ESD remains a vibrant major. Supply chains need to be redesigned under dynamic tariff structures; data analytics is much required for efficiency improvements and preparing for AI models; revenue maximisation using optimisation, and design, analysis, and management of complex systems remain the cornerstones of all enterprises. We continue to partner with our industry partners to provide our students meaningful learning experiences outside and inside the classroom. The 2024 GES indicated that 93.5% of ESD graduates had a full-time position within 6 months of graduation. The state of ESD is strong!

Last year was an exceptional year with many eventful happenings. In the newsletter, you will see profiles of our new faculty.

They come from the best institutions around the world and are passionate about sharing their expertise with students and colleagues alike. We also saw some of our faculty move on to other destinations, and we wish them our best.

We graduated the first batch of our Master of Science in Technology and Design in Data Science (MTD-DS), a world-class programme, that expands our educational offerings to professionally oriented post-graduate students. Two more batches have enrolled.

We welcome alumni and working professionals to upskill themselves in competitive, highly skilled AI, Analytics, Data Science and Systems Technology careers.

The newsletter has a special focus on Term 4 core subjects and resources for ESD students. Our students lead a vibrant life at ESD. They celebrate their projects' success at different showcases, participate in internships, global exchange and external competitions! We are also proud and inspired by our alumni's successes!

I invite you to read and enjoy the newsletter as we build ESD's journey to new levels of excellence!

Resources for ESD Students



Specialisation
Tracks



ESD
Games



ESD
Facilities

Key Dates

GEXP Minor Consultation, Oct 2025

ESD Welcome Event, Jan 2026

Dialogue Sessions



Chat with our Pillar Head

FRESH FACES



DU, Yihan · Assistant Professor
PhD, Tsinghua University

“My research interests lie in machine learning, with emphasis on reinforcement learning and online learning, and AI safety and alignment. My research focuses on abstracting mathematical models from real-world AI applications, e.g., large language models (LLMs) and robotics, designing efficient and human-in-the-loop decision-making algorithms, and providing both rigorous theoretical guarantees and useful insights for practice. I am confident that your journey with our pillar will be enjoyable and successful.”



YANG, Xiaotang · Assistant Professor
PhD, University of Minnesota Twin Cities

“My research interests are in the area of operations management with a focus on innovative technologies and new business models. Specifically, I seek to understand their impact within the contexts of on-demand service platforms, smart mobility solutions, the digital economy, and healthcare systems.”



YOUNG, Lee · Senior Lecturer
PhD, London School of Economics

“Prior to joining ESD, I worked at Singapore’s Ministry of Health and Roche AG, focusing on AI and machine learning in healthcare. My research interests lie in applied probability, statistics and machine learning.”

FOND FAREWELL

We extend our heartfelt thanks to our departing faculty for their dedication, mentorship and contributions to ESD. Your impact on our students and community will be long remembered, and we wish you the very best in your next chapter.



Term 4
Courses



Core Subject
Videos



Francisco Benita
Lecturer



Georgios Piliouras
Associate Professor



James Wan
Senior Lecturer

TERM 4 FACULTY LINE-UP



40.002 Optimisation
Assistant Prof. Antonios Varvitsiotis



40.011 Data & Business Analytics
Dr. Ying Xu & Dr. Douglas Rolph



40.017 Probability & Statistics
Dr. Young Lee & Dr. Sun Zeyu



PROJECT SHOWCASE

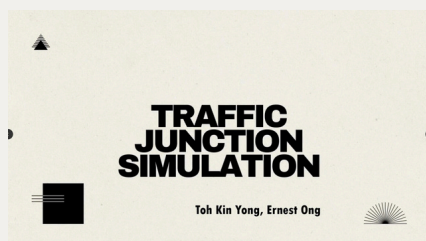
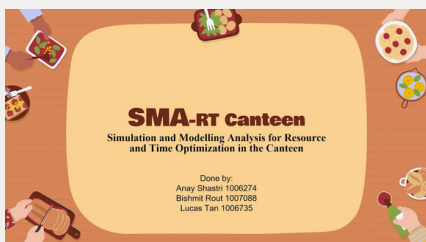
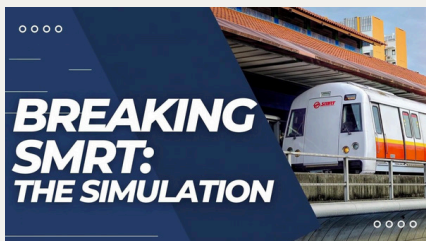
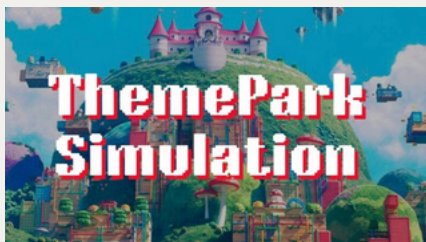
40.011 Data & Business Analytics

The Data and Business Analytics (DBA) course is ESD's flagship, providing students with hands-on experience in addressing industry challenges through data analytics and optimisation. In Term 4 of 2025, students undertook 29 projects in collaboration with 20 companies, showcased at a vibrant event that drew over 200 industry leaders, faculty members and peers. The showcase highlighted the skills, insights and real-world impact that ESD students bring to today's data-driven world.



40.015 Simulation Modelling & Analysis

ESD Juniors (Term 6) are challenged to identify and analyse complex engineering systems using simulation models, and critically evaluate competing design alternatives using appropriate statistical techniques.



RAISING THE BAR



Amni Syarah Imerya Binte Salim (ESD), Radhi Priya Janakiraman (ISTD), Qistina Binte Mohd Sahril (EPD), Raihanah Binte Saharudin (Freshmore)

1st Place

Healthcare and Accessibility, What The Hack 2024



Hillman Hung (ESD), Justin Wong (ESD), Bryan Tanaja (ESD)

1st Runner Up
Infineon Supply Chain Case Challenge 2025



Muhammad Ibrahim (ESD), Daniel Simmonds (ESD), Ng Sue Chi (ESD), Muhammad Ilham Fadhillah (ISTD)

2nd Runner-up
NUS Maritime Hackathon 2025



Ang Wenxuan (ESD), Faustina Anne Francisco (ISTD)

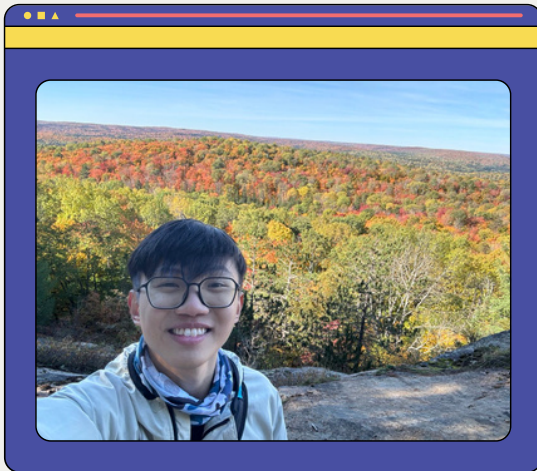
3rd Place SBS Transit Hackathon



Ryan Ng Ting Cheng (ESD), Goh Xun Yi Joey (ESD)

Team Finalist SBS Transit Hackathon

GEXP EXPERIENCE



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Waterloo was nothing short of an eye-opening experience. I made truly unforgettable memories with fellow SUTD friends, international students, and locals alike. With a vibrant campus life and countless clubs to join, I had the chance to explore new interests such as poker and ice skating, while enjoying a more relaxed academic pace. Plan your modules in advance and keep track of the ever-changing availability of modules offered during the Term you are going for exchange. Time on exchange passes faster than you think. Before your exchange, think of what you want to gain out of this opportunity and make your plans accordingly because sooner rather than later, you will find yourself already on the flight back to Singapore.

Kenneth Wong, University of Waterloo

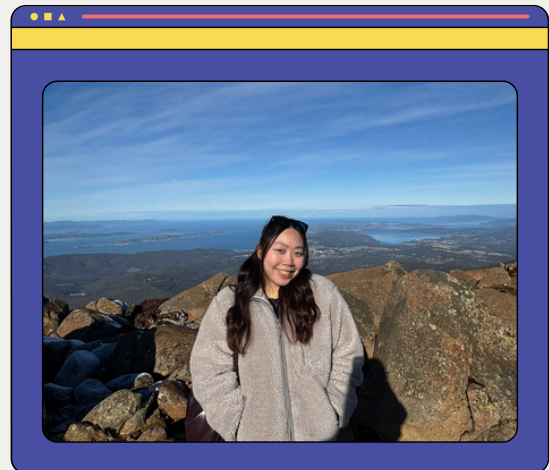
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Embarking on GEXP has been one of the most eye-opening and rewarding experiences of my time at SUTD. Living and studying in a different environment challenged me to adapt and grow in ways I never expected. Not forgetting Melbourne's vibrant city culture and stunning natural landscapes, I definitely made memories that will be etched in me for life. To those embarking on GEXP: push yourself to do what feels uncomfortable. You won't regret the growth and incredible memories that come with stepping out of your comfort zone!

Jenna Chan, Royal Melbourne Institute of Technology

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Scan this to find out more



about GEXP

STUDENT BONDING EVENT



The ESD Bonding Session was organised post midterms during the spring term. It was a rare opportunity for ESD students from all batches to get to know one another better and form stronger bonds. Through this chill evening session after midterms, members connected over food, games and casual chats.

INTERNSHIP DIARIES

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Last fall, I joined the Procter & Gamble Company (P&G) as an Associate Scientist intern under Beauty Measurement Science (R&D). Known for iconic brands like Gillette, Oral-B, and Tide, P&G is one of the world's largest consumer goods companies, and my role in R&D gave me insight into the extensive research that goes into its products. During my internship, I built automation flows and dashboards to facilitate consumer studies and even had the opportunity to design and conduct a few studies of my own. The design thinking approach practised in SUTD helped me to create better research studies and solutions that directly addressed user needs. My advice for those going on internship — be open to unexpected opportunities, don't be afraid to ask questions, and remember to have fun! All the best :)

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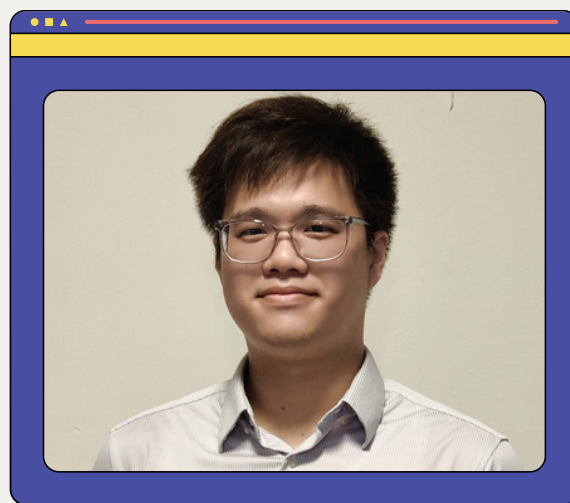
Marianne Lim, ESD Senior
Procter & Gamble

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During my internship, I joined Changi General Hospital as part of their Office of Improvement Science, where I supported various projects that enable others to drive process changes that lead to meaningful and impactful improvements. I collaborated with different team members to understand business requirements and translate them into actionable insights. This hands-on experience helped me to build upon skills and knowledge I had learned in school, such as project management, coding, analytics, and communication. This experience not only deepened my interest in pursuing a career in the healthcare industry, but also equipped me with valuable skills and practical knowledge that will undoubtedly benefit my future endeavors. As Spider-Man once said, "I'm just trying to do better." This quote captures my key takeaway from the internship — to approach every opportunity with a mindset of continuous learning and personal growth, a mindset I would encourage others to adopt as they embark on their own internship journeys.

Ernest Ong, ESD Senior
Changi General Hospital

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REAL WORLD, REAL WORDS



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Ever since I was young, my interest and strength in mathematics has made it easy to see that ESD is the pathway for me to extend that strength in designing engineering systems. Through optimisation, I have learned how to represent something as complex as a train network design. With stochastic modelling and queuing theory, I was able to capture the dynamics of customer service systems. Using simulations, I found that programming could go beyond running algorithms to model behaviour and better understand the world around me. ESD equipped me with tools that helped translate mathematical theory into actionable insights. ESD also gives me the foundation to build on my capabilities and knowledge in my further studies. In addition, ESD provides a trusted network of peers and faculty that I can turn to whenever I am in need of guidance and support.

Gabriel Yong, Class of 2024 · Research Assistant, A*STAR IHPC
M.Sc - MS, Operations Research, MIT

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93.5% Overall Employment Rate*
\$4,801 Average Mean Monthly Salary*

*based on SUTD GES 2024 survey

<https://www.moe.gov.sg/-/media/files/post-secondary/ges-2024/web-publication-sutd-ges-2024.ashx>