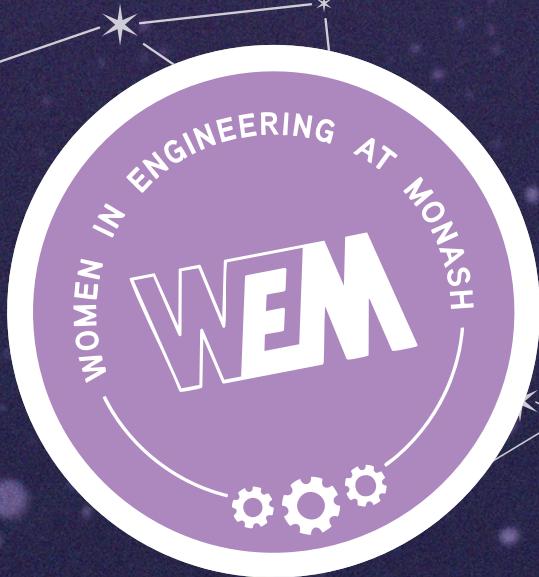


WEM 2025 INDUSTRY GUIDE*





© Copyright Women in Engineering at Monash 2024

A Warm Welcome:

We are proud to present the WEM Industry Guide 2025

By Dheekshanya T.A



Who are we?

Women in Engineering at Monash (WEM) is a student-led community dedicated to empowering women and gender-diverse students in STEM. Through social events, academic support, industry connections and outreach programs, we create spaces where students can grow, learn and thrive, both on campus and beyond.

What is the Industry Guide?

The WEM Industry Guide is our annual celebration of ambition, resilience, and possibility. Each page is designed to spark curiosity and provide guidance, whether through inspiring interviews, reflective articles or insights into the many pathways engineering can take you.

Just as stars form patterns that guide explorers, this guide connects the voices of students, graduates, educators and industry leaders, helping you map your own pathway through engineering.

This year's constellation theme reminds us that while each star shines on its own, together they form something greater. Our members, like stars, are diverse and radiant, following unique trajectories yet linked by shared ambition and community.

Within these pages, you'll find reflections from students navigating internships, clubs and challenges throughout the degree. It includes guidance from alumni and mentors and the wisdom of engineers shaping research, technology, and startups. You'll also meet the companies who sponsor and support us, organisations that champion inclusion and create opportunities for tomorrow's engineers.

This guide was made possible by the tireless dedication of the WEM committee. Thank you to everyone who contributed their words, ideas and support, and especially to the Industry Team for curating and executing both the guide and the launch event with care and creativity.

To our sponsors, thank you for lighting the way with your support and commitment to diversity. Your partnership empowers us to keep building a stronger, brighter community.

A special thank you goes to our designer, Nadya, whose work captured the wonder of constellations and brought the guide to life with artistry and imagination.

And finally, to our members and readers: this guide is for you. May it inspire you to chart your own course with courage, to connect with others along the way, and to remember that no star shines alone. Together, we form a constellation, brighter, bolder, and limitless.

To brighter horizons

Dheekshanya T.A *Industry Director*

Table of Contents

President's Address	1
2025 WEM Industry Overview Sem 1	2
2025 WEM Industry Overview Sem 2	3
2025 WEM Industry Overview	4-5
2025 WEM Outreach Events Overview	6-7
Sponsors	8-9
Company Overview	10-11
Aeurecon	12-13
Bae Systems	14-15
Department of Materials	16-17
Invetech	18-19
GHD	20-21
Ansto	22
Arcadis	23
Atlassian	24
CitiPower Powercor	25
Egis	26
S&C Electric Company	27
Wood	28
Exxonmobil	29
APA	30
Auroroa	30
BCG	31
Stantec	31
Honeywell	32
Orbits: Journey Through Engineering	33
Shooting Stars And Near Misses: The Bright Side of Failure	34
Charting My Orbit: Three Years of Software Engineering	35
Student Teams And Clubs: Find Your Sparkle	36
From First Year To First Offer	37
The Girls Club	38-39
When The Stars Aligned: From Uncertainty To New Directions	40-41
From AI Newcomer To AI Co-Lead	42-43
Finding Your North Star: A First Year Guide	44-45
Starlights And Streetlights: Cadetship, Experience And Skills	46-47
Supernovas: Breaking Barriers & Shaping The Future	48
A Look Through The Stars In STEM:	49-51
Equal Pay: The Missing Pieces Of The Equation	52
Stellar Perspectives: How Female Voices Illuminate Inclusive Design	53-54
Why We Need More Women In Engineering: Stories That Say It All	55
Breaking Societal Norms Is The New Norm	56
Igniting Bright Minds: Engineering Education For The Future.	57-58
Charting New Orbits In Science, Safety And Global Experience	59-60
Why Pink? Houston, We Have A Fashion Statement	61
Listening For Change	62-63
WEM Photos	64-65
Acknowledgments & Special Thanks	66-67

President's Address

By Kelly Li



From code to computers, cells to hearts, bricks to buildings- engineers have achieved the extraordinary. And none of it would have been possible without women. From Ada Lovelace, who wrote the first computer program, to Rosalind Franklin, who uncovered the structure of DNA, women engineers, often breaking through barriers, have always been at the core of innovation. It is this spirit of determination and ingenuity that drives the Women in Engineering at Monash Club today.

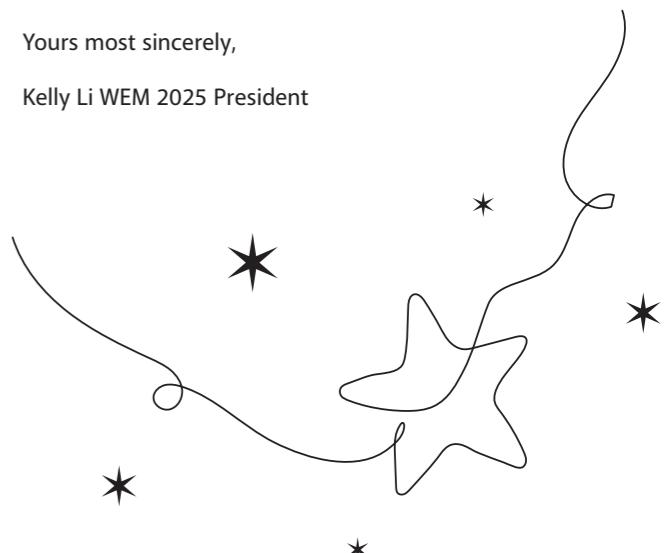
There has been so much happening at the Women in Engineering Club in 2025. From our Industry Team and our renowned Trivia Night, High Tea and Platinum Sponsor Events, to our Events Team and our multiple immensely popular study sessions and dodgeball collaborations. Not to forget the extraordinary efforts of our marketing team and their continuous effort to our promotions and the extent of our outreach team and their ongoing Monash Engineering Girls Program engagements- there is not much more you can ask for from a team.

All of this collectively coming together to also achieve 2nd place in Monash Clubs and Society's 'Most Popular Club (Category C)' and 'Most Popular Event (Category C)' it is clear that the Monash Community appreciates our efforts towards our goal of creating a supportive environment. Having been in the club for four years now I have seen it grow in terms of numbers as well as spirit, and this year leading the executives and whole committee has been a wonderful experience. All the members this year have contributed their utmost efforts into running our events this year and I cannot be more thankful for how smooth and easy they have made my own life out to be.

With all that being said, I specifically thank the industry team with their help with the articles and interviews featured in this guide. As well as the sponsors that made this event happen. Hopefully you will be able to learn a little something about the field that is women in engineering to help you, as much as the club and our small community has helped me.

Yours most sincerely,

Kelly Li WEM 2025 President



2025 WEM Industry Overview Semester 1

Trivia Night

Our first-ever trivia and networking night was the perfect blend of fun and professional connection. Students teamed up with peers and sponsors for rounds of lighthearted competition, sparking conversation and building confidence in a relaxed environment. The event set the tone for WEM's year of industry engagement, reminding us that networking doesn't always have to be formal to be impactful.



Tech Industry Night

In collaboration with SMEE and MECC, this major networking night opened the doors to a wide range of companies across the engineering and technology sectors. Students had the chance to engage directly with professionals from diverse disciplines, ask questions, and explore career pathways. The evening showcased the breadth of opportunities within engineering and highlighted the value of collaboration between student societies.

High Tea Networking

A highlight of the year, our high tea networking event brought together students with platinum and gold sponsors over an afternoon of tea, treats, and conversation. The elegant setting created an approachable space for meaningful discussions about career journeys, workplace culture, and future opportunities. Students left feeling inspired, supported, and better connected to industry leaders.



2025 WEM Industry Overview Semester 2



WEM x Aurecon

This exclusive partnership event invited students into Aurecon's offices for an immersive look behind the scenes. Participants gained valuable insights through a resume-building workshop and employability skills session, guided by Aurecon's team of professionals. The event gave students a deeper understanding of workplace culture, recruitment expectations, and how to position themselves for success in the industry.

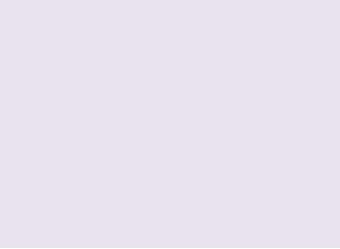
WEM x BAE Systems

WEM's collaboration with BAE Systems featured a keynote presentation from engineers who shared their experiences working at the forefront of defense and technology. Students were then challenged to pitch innovative solutions in a Shark Tank-style competition, testing their creativity, teamwork, and communication skills. The evening was both inspiring and practical, giving students the chance to showcase their ideas while learning directly from industry experts.

2025 WEM Events Overview

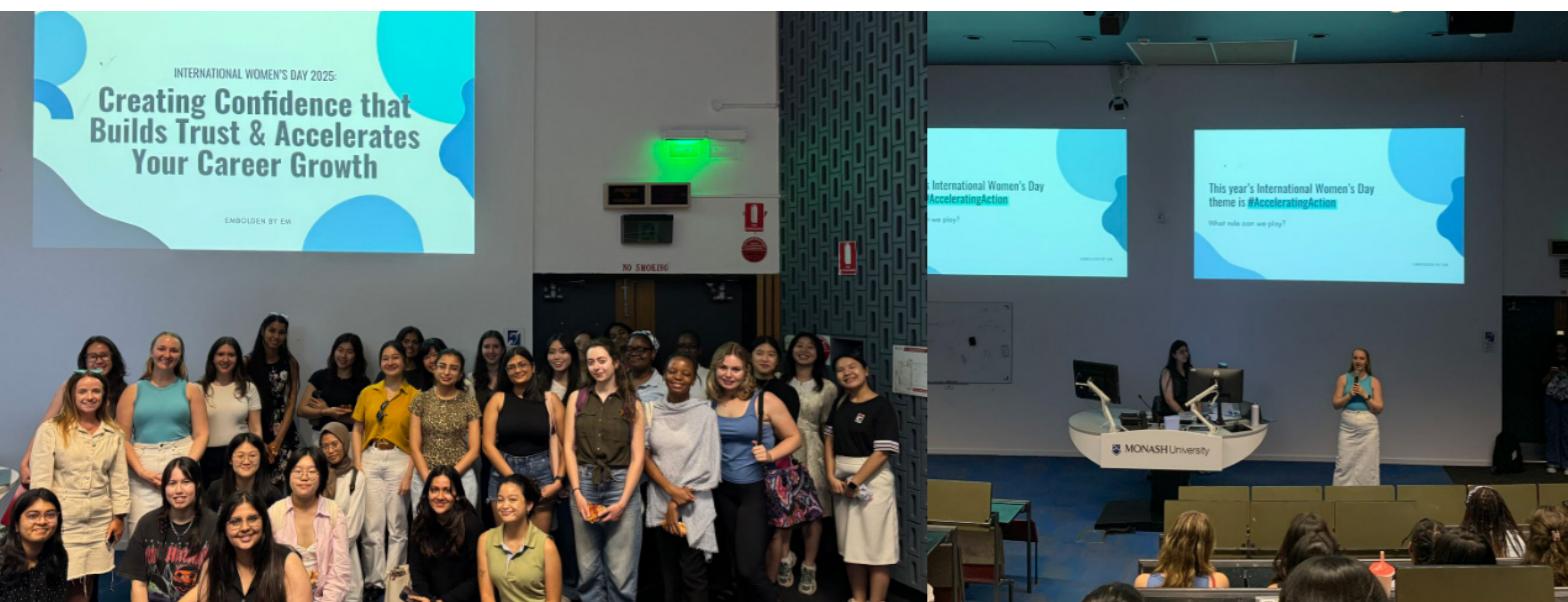
International Women's Day - Cupcake Decorating with MESS

We kicked off the year with something sweet! Our very first event of the semester was a cupcake decorating competition, run in collaboration with the Monash Engineering Student Society (MESS), to celebrate International Women's Day. The event gave new female-identifying students the chance to connect, make friends, and feel at home in the engineering community from day one. With plenty of sprinkles, laughter, and creativity, it was a fun way to highlight and celebrate the incredible women in engineering at Monash.



Building Confidence Workshop with GDGoC (Google Developer Group on Campus at Monash University)

In collaboration with the Google Developer Group on Campus (GDGoC), we hosted a workshop on building confidence, led by guest speaker Emma Goodman, a Senior Product Manager at REA and founder of Embolden by Em. The session created a safe and supportive space for women in engineering and across STEM to share their perspectives on confidence, ask questions, and explore how to carry this strength into their careers. Beyond the insights, the event doubled as a networking opportunity, encouraging students to connect and empower one another. A truly inspiring way to celebrate and uplift women in STE.



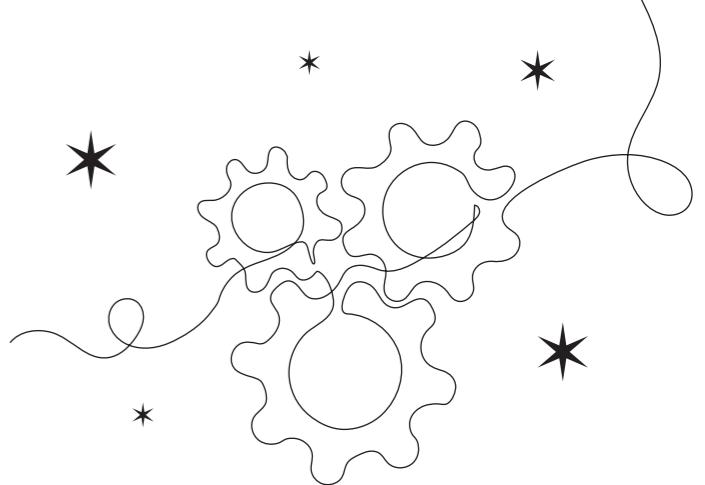
Study Sessions

Throughout the semester and during SWOTVAC, we hosted multiple study sessions that quickly became a student favourite. With food, drinks, and good music on hand, the sessions offered the perfect mix of productivity and connection, with a space to focus, collaborate, and unwind with friends and fellow women in engineering. These sessions proved to be not just about getting work done, but also about building community along the way.



WEM Bar Night

To wrap up the semester, we hosted a relaxed bar night. The perfect way to celebrate, unwind, and enjoy a night out with fellow women in engineering. The evening was all about good vibes, new connections, and plenty of laughter, making it a great space to meet new friends and strengthen long-lasting friendships.



2025 WEM Outreach Events Summary



WEM MEG Event

The MEG event gave students a unique insight into what studying engineering at Monash is like, including an introduction to the different specialisations available. Across the day, students participated in interactive workshops run by other student teams, gaining hands-on experience and exposure to a variety of engineering disciplines.

WEM's outreach team delivered a presentation on engineering pathways at Monash, encouraging students to consider how their interests and skills align with the opportunities available in the field. The session also included a fun and engaging quiz, where students competed for exciting prizes.

To conclude, a panel discussion created space for students to ask questions openly about university life, career pathways, and the realities of engineering study. This honest dialogue, combined with the workshops and presentation, left students with both practical knowledge and inspiration for their future studies.



GHD Geelong STEM Pathways program

At the end of last year, WEM had the opportunity to take part in the GHD Geelong STEM Pathways program. As part of the visit to the GHD Geelong office, we ran an interactive hydraulic arms activity with students, giving them hands-on experience with engineering concepts in a fun and engaging way. Alongside the activity, we also delivered a presentation on Monash University, highlighting the pathways available for students interested in pursuing engineering and sharing insights into university life.

The program was a fantastic way to spark curiosity in STEM, connect with students, and encourage them to consider engineering as an exciting and rewarding career option.



MEG Open Day

At Monash Open Day (3 August), WEM partnered with MEG to host the Women in Engineering Hub. The program featured student and alumni speakers, industry insights, and interactive break-time activities with ambassadors and club booths. With the support of eight volunteers, the event highlighted female engineering experiences and showcased the value of diverse talent to inspire future students.

Sponsors

Sponsors

10-11
Relevant Areas of Study

12-13
Aurecon

12-13
BAE Systems

14-15
Department of Materials

16-17
Invetech

18-19
GHD

20
Ansto

22
Atlassian

24
Egis

26
Wood

28
APA

30
Honeywell

21
Arcadis

23
CitiPower Powercor

25
S&C Electric Company

27
ExxonMobil

29
BCG

29
Stantec

Relevant Areas of Study Overview

	aurecon	BAE SYSTEMS	MONASH MATERIALS SCIENCE AND ENGINEERING	InveTech	GHD	ANSTO	ARCADIS	ATLASSIAN	beon CitiPower united energy U
Aerospace Engineering		✓				✓			
Biomedical Engineering		✓		✓	✓				
Chemical Engineering	✓			✓		✓	✓		
Civil Engineering	✓				✓		✓		
Consulting	✓			✓	✓		✓		
Electrical & Computer Systems Engineering	✓	✓		✓	✓	✓	✓	✓	✓
Environmental Engineering	✓	✓			✓		✓		
Materials Engineering	✓	✓	✓		✓		✓		
Mechanical Engineering	✓	✓	✓	✓	✓	✓	✓		
Robotics & Mechatronics Engineering	✓	✓		✓	✓	✓		✓	✓
Research			✓					✓	
Resources Engineering		✓			✓				
Software Engineering		✓		✓	✓	✓	✓	✓	✓
Hiring of international students	✓		✓		✓		✓	✓	✓
Interstate opportunities	✓	✓	✓		✓	✓	✓		
International opportunities	✓	✓	✓	✓			✓		

Relevant Areas of Study Overview

	egis	S&C	wood.	ExxonMobil	APA	AURORA	BCG	Stantec	Honeywell
Aerospace Engineering	✓		✓	✓		✓			
Biomedical Engineering				✓		✓			
Chemical Engineering				✓	✓	✓		✓	✓
Civil Engineering	✓		✓	✓	✓	✓		✓	
Consulting	✓		✓	✓	✓	✓	✓	✓	
Electrical & Computer Systems Engineering	✓	✓	✓	✓	✓	✓			
Environmental Engineering	✓	✓	✓	✓	✓	✓	✓	✓	
Materials Engineering	✓	✓	✓	✓	✓	✓		✓	✓
Mechanical Engineering	✓	✓	✓	✓	✓	✓		✓	✓
Robotics & Mechatronics Engineering	✓	✓	✓	✓	✓	✓		✓	✓
Research					✓				
Resources Engineering							✓		
Software Engineering							✓		✓
Hiring of international students							✓	✓	
Interstate opportunities							✓	✓	
International opportunities							✓		

Your career adventure starts here



We believe your career should be a rewarding adventure.

Whether you're passionate about making an impact in your community, shaping a sustainable future, or collaborating with designers, engineers, and advisors across Asia Pacific, our Graduate and Intern Programmes help you discover, grow, and succeed.

Your career shouldn't be ordinary. Work on real projects, build valuable skills, and enjoy the flexibility to balance work and life.

Are you ready to start your career adventure?



aurecon
Bringing ideas to life

aurecongroup.com/EarnCareers

We believe your career should be a rewarding adventure.

Whether you're passionate about making an impact in your community, shaping a sustainable future, or collaborating with designers, engineers, and advisors across Asia Pacific, our Graduate and Intern Programs help you discover, grow and succeed.

Your career shouldn't be ordinary. Work on real projects, build valuable skills, and enjoy the flexibility to balance work and life.

Are you ready to start your career adventure? Graduate applications open: February/March 2026 and Internship applications open: June/July 2026. Find out more aurecongroup.com/careers/early-careers

Why Aurecon?

At Aurecon, we'll help you build the technical skills, confidence, and experience to shape a successful career as a consultant and contribute to creating a better future.

- Learn from industry experts
- Gain real on-the-job experience
- Dedicated onboarding buddy
- Optional graduate rotations
- Join Limelight - our early career network
- Self-paced learning
- Inclusive and supportive environment
- Employee benefits and perks

About Aurecon

With 7,000+ professionals across Australia, New Zealand, and Asia, Aurecon is a design, engineering, and advisory company determined to bring ideas to life and co-create a better future. We are thinkers, solvers, and explorers — united by purpose and committed to making a meaningful impact for people and the planet.

Meet No'am Geffen – Engineer, Integrated Transport and Mobility, Aurecon



SERVICE GROUP: Integrated Transport & Mobility (ITM)
UNIVERSITY: Monash University
DEGREE: Bachelor of Commerce and Bachelor of Engineering (Honours)

To learn more, visit aurecongroup.com/careers/early-careers

I've always loved maths and science, especially problem-solving, which led me to study engineering. I completed a summer internship with Aurecon's rail team in 2018–2019, continued part-time during my final year, and started as a graduate in 2020. I now work in the Integrated Transport & Mobility (ITM).

1. What's your job about?

I focus on transport planning and traffic engineering. This involves looking at the best way to move people and goods and what corresponding infrastructure is required. No day is the same for me which I love! This is because, in my role, we provide many different types of services and often work across multiple projects.

2. Could someone with a different background do your job?

Yes, definitely! Our team is made up of people with lots of different educational backgrounds, such as mathematics, urban planning, data science and more. A lot of the skills are taught on the job, so I think it is more about having a passion and interest in the work we do that is important. Being a good communicator with strong analytical and problem-solving skills is hugely beneficial.

3. What's the coolest thing about your job?

I love that while my job is often about improving or designing transportation infrastructure, it is all about society and what/how people will use and interact with this infrastructure. It has a human-centred element to it that really appeals to me.

I have also been lucky enough to work on some big projects that have shaped the transportation network of Melbourne. It is really amazing to think that in 50 years' time, I can look

4. Words of advice for yourself when you were a student?

It's okay not to know what you want to do and be, or what kind of job you want after life at university. Just take whatever opportunity you get and learn as you go. And make connections! This can be with your peers at university, as they will ultimately be your colleagues one day.

aurecon
Bringing ideas to life

BAE SYSTEMS

Company Overview

At BAE Systems Australia, our purpose is to serve, supply and protect those who serve and protect us. We have grown over nearly seven decades to become the country's largest Defence prime contractor with over 6,800 employees across 40 sites nationally.

We provide the Australian Defence Force with a competitive edge across domains, including air, maritime, land, strategic surveillance, guided weapons and autonomy.

We provide aircraft design, development, production, training, support and maintenance for the Royal Australian Air Force.

We are responsible for the design and build of one of the world's most advanced anti-submarine warships — known as the Hunter class frigate — at the Osborne Naval Shipyard in South Australia. The Hunter class frigates will provide the Royal Australian Navy with critical capability to help protect the nation for decades to come.

We have played a central role in the development of Australia's critical sovereign surveillance capability over the past 35 years and we are currently leading the Jindalee Operational Radar Network upgrade, ensuring Australia remains a world leader in maritime and air defence over the horizon radar systems.

Since BAE Systems Australia's origins in South Australia in the 1950's, we have built a strong company and a legacy that we are proud of.

In 2023, we celebrated 70 years of operations in Australia supporting the Australian Defence Force.

Across 40 sites in every state and territory in mainland Australia, we have talented and experienced people delivering valuable and significant work. From our city and regional operations to the teams in our shipyards, hangars and the engineers designing cutting-edge technologies, our people are at the heart of everything we do.

We are committed to growing our capabilities, our products and services and our support for local communities. We continue our legacy of excellence through investing in our people, to develop new technologies and innovations that will help us tackle future challenges.

BAE Systems Australia is headquartered in Edinburgh Parks, South Australia and also operates in Victoria, New South Wales, Western Australia, Australian Capital Territory, Queensland and the Northern Territory.

BAE Systems Australia is the country's largest defence and security company, working on some of the nation's most significant and complex defence projects.

We also offer award winning graduate and internship programs that provide hands on experience, mentorship, and pathways into long term defence careers.

Workplace Diversity

All of our people have an active role to play in helping to create and maintain an inclusive work environment.

We have dedicated teams who focus on embedding inclusion into our cultural DNA and business as usual practice. As part of this, we have identified several key areas of focus that underpin our strategy.

We have several employee resource groups which are voluntary and employee-led. Each has a specific focus but a common aim to connect and share the voices, perspectives and experiences of our people.

Current Projects

BAE Systems is Australia's most versatile defence and security company. From air and maritime sustainment to shipbuilding, we have a long and proud heritage of providing advanced defence technology which protects both people and national security, keeping critical information and infrastructure secure.

Our strengths and core capabilities at BAE include hundreds of projects which provide the design, manufacture, upgrade and support services to the Australian Defence Force and commercial organisations across the country.

The 5 Year Plan

We are focused on delivering to our customers and contributing to Australia's sovereign industrial capability.

Together - with the Australian Defence Force and hundreds of local suppliers - we're delivering defence capabilities that will ensure our soldiers are safer and given the capability edge they need.

We're building a workforce of 8000+ workers, forging enduring partnerships and developing sovereign capability that will endure and contribute billions to the Australian economy.

Learning and Development

If you're curious, hungry for more responsibility, and prepared to step out of your comfort zone, there are endless opportunities to grow with us. At every stage of your career our first-class training, coaching and development programs, role models and mentors will help you embrace your potential and take the next step.

Graduate and Internship Programs

From the depths of the ocean to the far reaches of space, technologies developed by our people are there. Whatever your role at BAE Systems Australia we all contribute to keeping Australia safe.

Make the most of your unique talents to achieve your career and life goals with us – our diverse opportunities, benefits and flexibility will help you thrive.

BAE Systems Australia's graduate programs include engineering, IT, project management, supply chain, finance, and human resources to name a few.

Key features include

- Dedicated Graduate Career Mentors to provide support and guidance
- Graduate and Intern Partner to support the program and graduates
- Graduate Career Development Plan and specialised graduate training
- Salary increases throughout
- Opportunities for interstate secondments
- A National Graduate Committee to develop a sense of community
- National Graduate Conference

Insights into experiences of graduates/interns at your company

Interns in Australia | BAE Systems Careers

Application deadlines:

Applications for Grads will open in March 2026 for a Feb 2027 commencement and applications for interns will open in May 2026 for a November 2026–February 2027 for a 12-week placement.

Key dates for upcoming events

2026 The Big Meet: Melbourne: 19th March



MATERIALS SCIENCE AND ENGINEERING

Monash University's Department of Materials Science and Engineering is an international, research-active department with modern facilities and a broad education offering in materials science and engineering. Although our work spans the entire materials field, we specialise in both the cutting-edge and fundamentals of metals and alloys, biomaterials and tissue engineering, nanomaterials, polymers, composites, corrosion, advanced materials characterisation and materials modelling. Our department is well known for our outstanding facilities, integration of practical and theoretical learning, student-run teams and our focus on people and the community.

HISTORY

The department of Materials Engineering was officially launched in 1971 with 16 students and by 1980 had the largest research group in the Faculty of Engineering. The department has since gone through a number of incarnations before officially becoming the Department of Materials Science and Engineering in 2013. In 2025, according to the QS Academic Ranking of World Universities, the department was ranked equal 29th globally for materials science.

EMPLOYEES

Our department is made up of 35 academic staff (23% female). We have 146 Bachelors of Materials Engineering students (41% female), and 131 PhD students (35% female). Students and staff join our department from more than 40 countries around the world. Our department is largely based at Monash University's Clayton Campus and this places it within walking distance of the CSIRO's Clayton Central precinct, the Australian Synchrotron and the Melbourne Centre for Nanofabrication. Most of our researchers are located within the New Horizons research centre, a collaborative research environment designed to create new multi-disciplinary research opportunities for industry, engineers, scientists, researchers and government. We have several key academic staff working at our Suzhou Research Institute Campus.

Diversity is actively pursued in MSE, through academic recruitment and by providing a family friendly and open environment for staff and students. This is reflected in, for example, our gender balance which is higher than in other engineering disciplines. For example, female students in engineering disciplines in Australia are around 16% compared to 41% in MSE.

COMPANY VISION/FUTURE GOALS

Over the next five years we would like to grow our student base by the introduction of new, cutting-edge materials courses and minor specialisations at the undergraduate and postgraduate levels. We will achieve this by showcasing the exciting careers that Materials Engineering graduates are pursuing and diversifying our course offerings.

An example of a project we are working on is material development for the 3D printing of cells for tissue engineering applications. Many materials used today are derived from animals, such as gelatin. Our work is to design synthetic materials which can replace animal derived products using polymer science and the principles of biomimicry. Eventually, we expect that these types of materials can be combined with cells and developed into 3D printed constructs that have some level of tissue function. We are also working on relacing animal derived materials in organoids for drug screening. Organoids are disease models which contain tissue relevant cells and structures.

WHAT SETS MSE APART?

Our department prides itself on building life-long relationships with students, from enrollment through to alumni. We actively promote diversity and inclusion at all levels. We are strongly engaged with industry providing students with opportunities to engage through a variety of programs as well as providing cutting edge solutions through our research. Our department is committed to producing research outcomes that are in the public good. This includes the research and development of materials which help mitigate the effects of climate change, reduce the impact of environmental pollution and aid in the treatment of diseases.

PHD & MASTERS SCHOLARSHIPS

Materials scientists and engineers make a unique contribution – not just by making new materials, but also by improving what we already have. Here at Monash, our graduates and researchers are making things stronger, lighter, more functional, more sustainable and more cost-effective. Their contributions underpin all aspects of engineering, manufacturing and health sciences. Not surprisingly – they're increasingly in demand.

THE OPPORTUNITY

Expressions of interest are sought from outstanding candidates interested in undertaking research studies in Materials Science and Engineering at Monash University.

Our PhD and Masters by Research degrees are a great opportunity to work on a significant research project under the direction of world-leading researchers. These postgraduate research degrees allow you the opportunity to work in a flexible, highly self-directed way, to gain high level transferable skills whilst working on a program which results in new knowledge contribution and the opportunity to develop new, cutting-edge technologies. We have projects in the areas of energy materials, metals and alloys, biomaterials, additive manufacturing and functional materials. We have state-of-the-art laboratories for materials research, with centres for electron microscopy and additive manufacturing. We also have a number of research clusters (metallurgy and corrosion, engineered biological models and system) which provide development opportunities, shared mentoring as well as opportunities to develop collaborative linkages and networking.

TOTAL SCHOLARSHIP VALUE

A \$36,063 per annum (tax-free) (2025 rate). Tuition scholarships available to international students.

SCHOLARSHIP REQUIREMENTS

There are separate scholarship rounds for local (domestic) and international students. To be eligible to apply for domestic postgraduate research scholarships an applicant must be an Australian citizen, New Zealand citizen or a Permanent Resident of Australia. International postgraduate research scholarships are available for non-domestic applicants that cover both living allowances (stipend) and tuition (international student fees).

ELIGIBILITY REQUIREMENTS

Applicants will need to hold a first-class honours degree from an Australian University or equivalent degree from an overseas university in a relevant discipline.

Full details for the relevant requirements are available at: monash.edu/graduate-research/study/apply

TO RETAIN THIS SCHOLARSHIP

The recipient of this scholarship must maintain satisfactory academic progress throughout their research degree.

APPLICATION PROCESS

The first step in the application process is to identify a potential supervisor.

Research profiles of academics in the department can be found at: monash.edu/engineering/departments/materials/about-us/our-people/academic-staff

Once you have identified a potential supervisor, email them with your CV to discuss potential projects on offer. Next fill in an expression of interest form (need link). Academics will then issue a formal invitation to apply which you can use to start the online application process.

APPLICATION DEADLINES

The yearly scholarship application deadlines are:

International: 31st March & 31st August

Domestic: 31st May & 31st October

ENQUIRIES

Enquiries about the scholarship application processes can be directed to:

Faculty of Engineering Graduate Research Office

 eng-gradresearch@monash.edu

 +61 3 9905 5222

MORE INFORMATION

Find out more about PhD and Masters by Research degrees and scholarships at: monash.edu/engineering/future-students/graduate-research/phd



Invetech

Company Overview

For over 35 years, Invetech has been at the forefront of technological advancement, delivering innovative product solutions to clients around the world. While our roots span multiple industries, our focus today is firmly on healthcare, diagnostics, and the cell and gene therapy sectors.

As a product realization company, we design, engineer and manufacture fully customizable platforms, tailored to our clients' needs. We collaborate with a wide range of organizations from pioneering start-ups to global enterprises, helping transform visionary ideas into impactful products. Driven by the transformative potential of our clients' innovations, we remain committed to revolutionising human health through cutting-edge solutions.

We work closely with our clients to understand user needs, design solutions that are ready for scalable manufacturing, and support long-term production through our contract manufacturing services. Our headquarters in Mount Waverley, Melbourne, serves as our primary hub for design and manufacturing. In North America, our San Diego office provides engineering expertise along with sales and marketing support. We operate under ISO 9001 and ISO 13485 certifications, ensuring rigorous quality standards across all medical device development. Our projects span a wide spectrum, from end-to-end product development for companies with breakthrough science, to detailed engineering for clients with existing prototypes, and next-generation enhancements for established products.

At Invetech, our team brings together specialists from a wide range of engineering and scientific backgrounds, contributing to core capabilities in systems engineering, instrument architecture, optics, motion control, thermal systems, fluidics, microfluidics, and user experience design. We're united by a shared set of values, collaboration, innovation, excellence, enthusiasm, and integrity, that drive our purpose:

Making Healthcare Innovation Happen.

Workplace Diversity

We embed safety, respect, and inclusion into every aspect of our business. These principles guide how we work, how we lead, and how we support one another.

We actively engage our team in conversations around gender equality, diversity, and inclusion, ensuring their voices help shape our workplace culture. We recognize individuals who demonstrate respectful and safe behaviours.

Invetech has established an employee-led group dedicated to promoting diversity, inclusion, and professional growth within the workplace. The group's overarching goals include fostering continuous development, supporting advocacy and networking, and creating a strong sense of community through inclusive work experiences. Currently, the group engages employees through open forums that explore topics such as unconscious bias, the confidence gap, and mental load, encouraging meaningful dialogue and awareness across the organization.

Current Projects

Invetech manages multiple healthcare, medical diagnostics, life science, and cell therapy projects at any time.

One recent project has been the development of the BOND-PRIME by Leica Biosystems. This is a next-generation automated tissue pathology (IHC and ISH) staining system designed to streamline diagnostic workflows. BOND-Prime is sold in more than 30 countries globally and successfully empowers labs to achieve faster turnaround times, consistent results, and greater operational efficiency, making it a powerful tool for modern pathology labs focused on precision and productivity.

Other exciting and current projects have involved deploying our expertise in human diagnostics into veterinary diagnostics, or developing microfluidics consumable designs.

Finally, Invetech has recently partnered with AiCella to revolutionize cell therapy development by combining advanced automation with cutting-edge artificial intelligence.

engineering calculations, sourcing components, writing scripts, or assisting with design and documentation, all under the guidance of our expert teams.

As a company operating in regulated industries, we ensure all interns are trained in relevant quality systems, Environmental Health and Safety (EHS), confidentiality, ethical conduct, and diversity and inclusion. Our interns also receive training on the tools and processes they'll use throughout their placement.

We regularly hear from interns that they value the chance to work in a collaborative, hands-on engineering environment where their contributions have real impact, helping bring innovative healthcare products, diagnostics, and cell therapies to life. Many of our past interns have gone on to join Invetech or pursue careers in product development across Australia.

The application period typically runs from June through August.

Further Information

To learn more about Invetech and stay informed about our latest projects and career opportunities, please visit our LinkedIn profile and official website via the linked provided below.

LinkedIn – <https://www.linkedin.com/company/invetech/>

Website – <https://www.invetechgroup.com>





We're
GHD.

At GHD, we're committed to making water, energy, and communities sustainable for generations to come. Our commitments anchor us to what is truly important. They give us insights into the best ways to partner with our clients to solve the world's biggest challenges.

Commitment is how we grew from a small engineering practice in Melbourne, Australia, in 1928 into a global professional services company today with over 11,000 employees in 200 offices on five continents: Australia, Asia, New Zealand, the Americas, Europe, and the Middle East.

No matter where our work takes us around the planet, whether we're partnering on a local initiative or a global infrastructure project, we're helping create lasting community benefit. And that's why our work is more than just a job — it is an unshakable belief in the future we're building.

Renowned for our core values of Safety, Teamwork, Respect and Integrity, we have grown into one of the world's top employee-owned professional services companies. Our employee-owned status is a powerful point of differentiation and helps drive our passion and accountability in how we serve our clients, deliver projects, and pursue new opportunities.

GHD is the place for aspiring people to thrive, achieve their career goals, and make a lasting impact.

A culture where people can thrive

As a people-powered business, GHD strives to be an inclusive community where everyone feels they belong. Embracing

diversity helps us develop imaginative and responsive solutions that create lasting community benefit.

Our pursuit of gender equity in a traditionally male majority industry has continued since 2014 when female employee targets were first set. To drive a more equitable workplace, we developed a flexible parental leave and return to work policy. In 2007, we established the Women in GHD (WinG) network to empower our women. Today WinG operates across all our offices globally, providing a space for women to connect, inspire and grow.

In 2016, we established a National LGBTQIA+ Employee Resource Group, which is now supported by a growing network of more than 270 official GHD LGBTQIA+ allies across Australia. Since the publication of our LGBTQIA+ Action Plan in 2021, we have developed an e-learning module, partnered with Out for Australia, improved the induction process for new allies, and normalised the use of pronouns through email signatures, business cards and introductions during events. Our long-term membership with Pride in Diversity has helped guide and steer our LGBTQIA+ inclusion awareness training, enablement, policy change and initiative roll-out.

In 2022, we increased our strategic hiring efforts and have grown our Indigenous workforce to ensure we have Aboriginal and Torres Strait Islander peoples engaging with our people, communities, businesses and clients. As a result, we are closer to achieving our 1.8 percent Indigenous employment target as outlined in our Reconciliation Action Plan.

As well as developing a Hybrid/Remote Work Policy to foster wellbeing, flexibility and productivity, our Young Professionals Network continues to provide a platform to help early career

professionals build strong working relationships. And through our partnership with Neurodiversity Hub, we're supporting and providing employment opportunities for neurodiverse people. As a next step in our I&D journey, a global accessibility working group has been formed to help create a more accessible environment within GHD.

What We're Working On

At GHD, our driving force is our vision: to make water, energy and communities sustainable for generations to come. Here's how we're making it happen.

- **Kidston Pumped Storage Hydro Project**
This world-first project will repurpose an abandoned gold mine into a pumped storage facility to deliver clean energy to Queenslanders.
[Read more](#)
- **Designing Perth's new Airport Line**
This rail line is a game-changer for Perth, connecting the airport and the city's eastern suburbs with the rest of the urban rail network.
[Read more](#)
- **Hornsdale Wind Farm and Battery Storage**
Consisting of 99 wind turbines and the world's largest battery connection, this renewable energy project in South Australia is making energy sustainable for future generations.
[Read more](#)
- **Wurun Senior Campus**
Repurposing the historic Fitzroy Gasworks site in Melbourne, this vertical campus cleverly connects indoor learning spaces with the outdoors.
[Read more](#)

Graduate and Internship Programs

Commitment defines how we do business, how we serve our communities and how we care for one another. When you join GHD, we commit to encouraging your curiosity, fostering new ideas, and creating meaningful change.

All new-to-workforce grads are enrolled in our 2-year Graduate Development Program, which helps you become familiar with life in a consultancy. You'll be part of a global class that transcends disciplines and regions, helping you form your network within the business. You'll also meet and interact with senior leadership, learn how to access internal resources like employee groups and other training, and understand what the opportunities are for you to shape your career.

"I've been out in the field mentoring our young professionals to visually inspect airport pavements for defects that have the potential to deteriorate an airfield's service life. This practical approach has taught me more as a young professional than I would have learned by just being in the office environment."

- Christina Hayes, Brisbane, Australia



Whether it's through our Corporate Social Responsibility program, GHD in the Community, or our design-led innovation program, Smart Seeds, we give our people the opportunity to help make a positive social and environmental impact on the communities in which we operate.

To discover where a career at GHD could take you, visit ghd.com/careers



Company Overview

ANSTO is the home of Australia's most significant landmark and national infrastructure for research. Thousands of scientists from industry and academia benefit from gaining access to state-of-the-art instruments every year.

ANSTO operates key Australian infrastructure including one of the world's most modern nuclear research reactors, OPAL; a comprehensive suite of neutron beam instruments; the Australian Synchrotron; the National Imaging Facility Research Cyclotron; and the Centre for Accelerator Science.

The Australian Synchrotron is a major research facility located in Clayton, a technology and innovation hub of southeast Melbourne. It produces synchrotron radiation, a form of electromagnetic radiation that spans a broad range of wavelengths, from infrared to X-rays, which are used in individual experimental facilities to examine the molecular and atomic details of a wide range of materials. The advanced techniques are applied to research in many important areas including health and medical, food, environmental science, biotechnology, nanotechnology, energy, mining, agriculture, advanced materials and cultural heritage.

Workplace Diversity

ANSTO is very active with diversity and inclusion as it strives to enhance the workplace and its community. One of the initiatives has been the women in engineering internship program that involves networking with universities to connect with women studying engineering. This program has been a massive success with a total of 12 interns over 5 years. Additionally, ANSTO is looking into initiatives that foster cultural and neuro diversity.

Current Projects

ANSTO's current BRIGHT project aims to facilitate the design and installation of eight additional beamlines, of which four have now been completed, enabling the facility to meet the needs of Australian researchers and industry partners and continue enabling ground-breaking research well into the future. To find more information about the research and case studies the synchrotron is discovering, please visit: <https://www.ansto.gov.au/facilities/australian-synchrotron/synchrotron-case-studies>

Graduate and Internship Programs

ANSTO's highly-regarded Graduate Development Program aims to develop and nurture the next generation of Australian business and science leaders. Graduates gain invaluable hands-on experience and professional development opportunities during this 2-year rotation program. The next intake will be open for 2027 with applications starting in 2026.

This program will allow successful applicants to gain industry experience in a unique and supportive environment. Applications generally open in October.

We are looking for students with degrees in:

- Mechanical engineering
- Mechatronics engineering
- Software engineering
- Computer science
- Electrical engineering

Further Information

Australian Synchrotron has an Open day every 2 years, you will have a rare chance to go behind the scenes of the Synchrotron. There will be opportunities in 2026 to:

- Learn how the Synchrotron works and the amazing research it enables
- Talk to our scientists stationed at the beamlines
- Interact with ANSTO scientists, engineers and technicians



Create a legacy

Elevate your career through hands-on projects, community impact, and global opportunities.



ARCADIS

Arcadis strives for diversity in the workplace. We have achieved the WGEA Employer of Choice for Gender Equality citation each year since 2021. We have Affinity Groups designed to drive diversity including our Gender, Pride and Age Affinity Groups.

Learn more about our Early Careers offerings by scanning the QR code:

Learn more about our Early Careers offerings:

Register your details & we'll email you suitable job ads:



Fun facts about Arcadis



36,000+
People Globally

Our 36,000 people include architects, data analysts, designers, engineers, project planners, water management and sustainability experts all working together to deliver integrated and holistic solutions across the full project lifecycle.



40,000+
Projects

BARRABUP

We work on more than 40,000 client projects every year, delivering sustainable design, engineering, and consultancy to help our clients solve the challenges of today.



1st
Sustainability

We are leading the sustainability agenda, ranked number one in our sector by Sustainalytics for ESG performance, and in the top 1% of firms who have successfully integrated sustainable practices into their business and management systems according to EcoVadis.



30+
Countries

We operate across 30 countries, collaborating across borders to help serve the changing needs of our clients, wherever they are in the world.



1888
Arcadis Founded

Founded in 1888, we have more than 135 years of experience in bringing innovative and sustainable design, engineering, and consultancy solutions for natural and built assets.



€4bn
Gross Revenues

Our strategy is rooted in driving impactful growth, generating gross revenues of €4bn in 2022.



Company Overview

Atlassian is committed to building a truly inclusive and diverse technology workforce, with a focus on transforming early careers recruitment into a strategic driver of belonging and opportunity. Rather than treating diversity as a numbers game, Atlassian embeds inclusion into every stage of its early careers pipeline, guided by the belief that every Atlassian – not just recruiters – plays a role as an inclusive recruiter.

This collective responsibility is supported through comprehensive training for hiring managers, active sponsorship from senior leaders, and a growing network of Inclusion Champions who drive outreach, mentoring, and advocacy across the business. Atlassian's delivery model is built on four key practices: empowering all employees as inclusion advocates, hosting over 40 inclusion-focused events annually at Australian universities (reaching more than 2,000 attendees), proactively sourcing over 600 candidates from diverse backgrounds each year through data-driven rituals, and continuously measuring and refining outcomes.

These efforts have led to remarkable results, including increasing female representation in Australian early careers cohorts from 25% in 2019 to 54.6% in 2025. Thousands of students – many of whom had never considered a career in tech – have accessed opportunities through Atlassian's inclusive programming, with post-event feedback consistently highlighting a newfound sense of belonging and confidence. Atlassian's approach is not a "tick-a-box" initiative, but a long-term, evolving framework that is sustained and scaled through strategic university partnerships and the formalisation of the Inclusion Champions program. Atlassian's motto, "Impossible alone. Team Everyone – Anywhere," captures its belief that building a more inclusive future is a shared journey, achieved one cohort at a time.

If you would like to learn more about how you can be part of transforming diversity with us, visit our Early Careers programs at Atlassian: [Atlassian Internships: Students and New Grads | Atlassian](#)



ATLASSIAN



Energy's our future, let's shape it together.



Company Overview

At CitiPower, Powercor and United Energy, we're proud to deliver electricity to 2 million Victorian customers every day through our network of poles and wires. But more than that, we're here to power communities, support local businesses and keep critical services running smoothly, we're essential to them all.

As Victorians electrify everything from homes to transport, we're focused on ensuring our networks are ready to meet that demand.

If you want to be part of something essential across our 16 work locations including the head office in Melbourne CBD, be essential with us.

Workplace Diversity

Our commitment to a physically and mentally safe workplace is supported by our 2025-26 Diversity, Equity and Inclusion (DEI) Strategy and its four focus areas – inclusion, First Peoples engagement, gender diversity, and neurodiversity and disability.

Developing the next generation of women in leadership is vital for gender equality. We've set gender targets to ensure continuous improvement in representation of both women in leadership and women in each business unit. In addition, we work hard to ensure the process of pay and promotion is both fair and unbiased.

We are proud to be a WORK180 endorsed employer for women and an AAGE Top Graduate and Intern Employer in 2024. Our commitment to helping all women thrive in the workplace includes initiatives such as our Women in Power network, Women in Engineering and Electrotechnology scholarships, free menstrual products in bathrooms, a generous parental leave policy, and embedded flexible working options.

Find out more: [Inclusion and Diversity | CitiPower & Powercor](#)

Current Projects

- **Electrification of everything**

Our goal is to help our customers get the most out of their energy choices. Whether it's exporting excess energy, consistently charging their electric vehicle or ensuring our regional and rural customers can get equal access to reliable power, we want to make it as easy as possible for them.



Company Overview

Egis is a global consulting organisation with 20,500 employees worldwide. We offer multidisciplinary expertise in delivering sustainable solutions through our engineering, construction management, advisory, design, architecture, asset management and operations services.

Egis currently operates in over 120 countries with our head office in Paris. Our extensive global presence allows us to bring our expertise to diverse regions, addressing the world's most pressing challenges. Unlike many firms that treat sustainability as an add-on, Egis embeds it in every stage of its projects – from planning and design to delivery and operations.

In Australia and New Zealand, Egis is expanding rapidly, delivering transformative projects in rail, road, aviation, and energy. We work closely with government agencies and private partners to create smarter, more efficient infrastructure.

Workplace Diversity

Gender

In Australia and New Zealand, Egis has set a 50% female graduate hire target as part of its commitment to building a more inclusive workforce. We are well on track to achieving this for our 2026 graduate hires.

Females make up 38% of our total hires in 2025. This demonstrates a genuine, measurable commitment to improving gender balance in the engineering industry.

Diversity

Egis is committed to creating an inclusive, creative culture that embraces diversity and flexibility. From celebrating International Women's Day to supporting National Reconciliation Week and participating in campaigns like 'Sweat with Pride', we create opportunities for awareness, education, and connection across our teams. These initiatives reflect our belief that a truly inclusive workplace is one where everyone feels valued, supported, and able to thrive.



Current Projects

M6 Motorway – Sydney, Australia

In Australia, Fulton Hogan Egis has been awarded a 30-year contract by Transport for New South Wales (TfNSW) to manage M6 Stage 1, a critical new road infrastructure development in Sydney.

Aura – Sunshine Coast, Australia

Aura is a visionary, master-planned community development on Queensland's Sunshine Coast. It's distinguished as one of the first neighbourhoods to earn the 6-Star Green Star Communities certification—the highest rating awarded by the Green Building Council of Australia.

5-Year plan

Egis in ANZ is focused largely on growth. In the last 6 months, we have made 3 new acquisitions, expanding our services within water, energy, power distribution and digital asset / operational analytic capabilities. The five years are geared toward scaling with purpose – through bold expansion, diversification, decarbonisation, and innovation.

Learning and Development

Egis encourages learning and development through:

- An internal coaching program supporting employees in achieving professional accreditations.
- Paid membership in professional accreditation bodies is provided, including professional registrations.
- Paid support and paid leave to prepare for Chartership

Graduate and Internship Programs

Egis offers a tailored Graduate and Internship Program designed to accelerate early career growth. The program blends professional development, technical training, and Egis-specific knowledge to provide a strong foundation for success. With dedicated support, mentoring, and opportunities to work on landmark projects, the program equips graduates with the skills and confidence to thrive in a global consultancy environment.

Link to our current graduate and internship roles: <https://jobs.egis-group.com/jobs?options=899&page=1>



Empowering People to Transform the Grid

Over 100 years ago, S&C revolutionised electricity distribution with the invention of the Liquid Power Fuse, ushering in a new era of safer and reliable power delivery to homes and businesses. Today, S&C builds on this legacy to deliver innovative solutions for a more sustainable energy future.

Now more than ever, being involved in the electrical industry is essential. The shift to clean energy and the impacts of climate change are driving investments in grid resilience. Our solutions transform the grid into a more resilient, reliable, and responsive system that meets the needs of a rapidly changing world.

With over 4,000 team members worldwide, including presence in Australia, Asia, the Americas, Europe, the Middle East, S&C has supported customers in the APAC region for over 60 years, establishing a local Melbourne office in 2013.

Our People-First Mentality

S&C is an employee-owned company with a people-first approach, promoting an inclusive work environment that builds trust, teamwork, and belonging in our global workforce and communities.

Better ideas and decisions are made with diverse groups of people at the table. With our APAC team comprising 14 different nationalities, speaking nearly 10 languages, and a gender identity diversity split of 54% male and 46% female, we have a significant amount of diversity among our team members.

Year on year, our APAC engagement survey results showcase our people-first mentality. In 2024, we were proud to see that:

- 100% feel they are treated with respect at work and believe diverse perspectives are valued and encouraged
- 100% believe S&C is taking action to be socially responsible
- 100% feel comfortable reporting any safety concern, and believe that safety risks are quickly corrected
- 91% would recommend S&C as a great place to work

What We're Working On

Social Impact and Community Engagement: In line with our commitment to sustainability, we continue to support our local and regional communities. This includes volunteering at Taylor Park in Torquay to support the park's conservation efforts.

Emissions Reduction: Building on our decarbonisation goals to achieve net-zero emissions by 2050, S&C has led key projects designed to address our emissions targets. Read more about our sustainability efforts in the 2024 Sustainability Report.

Network Reliability: Collaborating with customers in New Zealand to improve network reliability for rural areas, preventing temporary faults from becoming permanent outages and reducing truck rolls, thereby delivering a rapid return on investment.

Join us as we transform the grid!

Our philosophy is to provide a rounded learning experience that combines commercial, technical and leadership skills training with hands-on experience.

- **International Exposure:** Collaborate with team members worldwide and customers across Asia Pacific.
- **Varied Assignments:** Get out from behind the computer to play a hands-on role in delivering projects and engineering solutions in the field.
- **Explore Careers:** Develop critical skills and knowledge while exploring various electrical engineering careers.

Students interested in an internship/graduate position with S&C can reach out to APACGraduateProgram@sandc.com and submit an expression of interest or resume.



Company Overview

With 35,000 professionals, across 60 countries, we are one of the world's leading consulting and engineering companies operating across Energy and Materials markets and our key markets include:

- Carbon capture & storage
- Hydrogen
- Oil & gas (upstream and downstream)
- Power
- Life Sciences
- Minerals & metals

The business all started in 1848 when Matthew Hall opens a leadlight business becoming an early specialist in plumbing and sanitation in the UK. After many mergers, acquisitions, and divestitures, it became the organisation that we know today. Our global headquarters are in Aberdeen Scotland with our Australian offices being in Brisbane, Melbourne, and Perth. Wood are one of a few organisations in this space that provide an end-to-end solution from concept to construction to decommissioning exclusively using Wood personnel.

Workplace Diversity

One of our sustainability goals is to improve gender balance with 40% female representation at senior leadership roles by 2030. We're currently at 25% so have a little way still go. Our vacation and graduate intakes consistently exceed expectations with gender balance. Our 2025 graduate intake comprises 70% male and 30% female which is a great outcome considering that approximately only 15% of STEM graduates identify as female. Additionally, we always ensure that interview panels comprise gender balance.

Current Projects

We have secured AUD \$3 billion (USD \$2 billion) of contract awards across Asia Pacific in the past 12 months, making for a record-breaking year in the APAC region.

We been awarded new contracts in addition to extensions and renewals to advise, design, execute and operate major energy and mining projects and infrastructure across Australia, Brunei, Papua New Guinea, Singapore, Timor Leste and the Philippines



Our regional order book comprises significant contracts and critical project scopes that support energy and resource security, including:

- Long-term maintenance solutions for Esso in Victoria's Gippsland Basin
- Brownfield engineering, procurement, and construction management (EPCM) solutions for Shell's Prelude Floating Liquified Natural Gas (FLNG) facility in Western Australia, the world's largest floating offshore gas facility.
- Front-end engineering design (FEED) for Singapore's second liquified natural gas (LNG) terminal, supporting Singapore LNG Corporation to secure LNG.

The Next 5 Years

We aim to achieve our sustainability goals by 2030 which include:

- Improve gender balance with 40% female representation at senior leadership roles by 2030
- Reduce our carbon emissions by 40% by 2030
- All our offices are singly use plastic free by 2025
- Give our time, resources and funding to contribute \$10 million by 2030

Graduate and Internship Programs

Across the 2-year program, there are 25 dedicated hours for graduate training which is over and above any technical training. All graduate managers attend a briefing prior to a cohort starting which articulates the learning & development requirements.

We offer a Certificate IV in Project Management, and which is in addition to the five induction workshops and 5 development workshops along with financial wellbeing training. We also have a vibrant early careers community that arrange many social and learning events.

Our page on GradConnection: <https://au.gradconnection.com/employers/wood/>

"Interning at Wood enabled me to contribute to diverse projects and hone my technical skills in a positive and supportive work environment."

"Working at Wood as a graduate not only provides us with a number of door opening opportunities, but further encourages cohort engagement and fun along the way!"

Application deadlines

Summer vacation program:

Applications open: 29th July 2025

Applications close: 24th August 2025

Graduate program (2026 intake):

Applications open: 24th February 2026

Applications close: 23rd March 2026

To learn more, visit <https://careers.woodplc.com/early-careers>

Build your career with us and use your energy to change the world



Our internship program

At ExxonMobil, our vision is to lead industry innovation that advances modern living and a low carbon future. As one of the world's largest publicly traded energy and chemical companies, we are powered by a unique and diverse workforce fuelled by pride in what we do and what we stand for.

ExxonMobil Australia offers challenging internship opportunities to students across various engineering disciplines. The program typically runs from March to November with positions based at our head office and operating facilities within Victoria.

How to join us

Scan the QR code or click [here](#) to sign up to alerts for upcoming programs.



What we offer

- A foundational on-the-job experience to solve real business challenges for current penultimate and final year students, and recent graduates
- Professional insights into a leading global organisation via interactions with industry experts and leaders
- Technical and personal development with access to a world-class suite of training courses
- A dedicated support system of buddies and mentors providing you with regular and structured feedback



**Meet Lucy Levecke,
Decommissioning Interface
Lead**

"I've had an incredible journey at ExxonMobil. My time as an intern is where I discovered my potential as an engineer. The opportunity to contribute to real projects during my internship made me feel valued and whilst it was challenging, I had plenty of support from my mentors who have geared me towards success in my career."

Supporting Diversity, Equity and Inclusion

ExxonMobil is an equal opportunity employer and values diversity of background and thinking. We encourage applications from all suitably qualified people, and offer excellent benefits and conditions to enable a strong work life balance and support the needs of our employees throughout their career. ExxonMobil Australia acknowledges the Gunaikurnai, Wurundjeri and Bunurong peoples as the Traditional Custodians of the land on which we operate.





What's in it for you?

- Real work, real impact
- Structured development
- Competitive salary and benefits
- Supportive environment
- Diverse opportunities

Workplace Diversity

APA's Executive Leadership Team is 50% women.

We're levelling the playing field, ensuring everyone has the same opportunities to succeed. We're proud to have been recognised in the APGA's Inclusion and Diversity Award in 2024 and WORK180 Top 101 Employers for Women.

In 2024, both our graduate and intern program intakes were 63% women, and the majority are engineers.

[Discover more at apa.com.au/careers](https://apa.com.au/careers)

About us

At APA, we're taking on one of Australia's greatest challenges: the energy transition. We're not doing it alone. We're doing it with our customers and communities as Australia's energy infrastructure partner - a role our unique experience and expertise position us to play.

We proudly own, operate and manage a diverse portfolio of gas, electricity, solar and wind assets which deliver essential services to communities and customers across Australia.

Today with our national footprint, we work across a diverse range of energy solutions. As Australia's energy infrastructure partner, we transport almost half of the nation's domestic gas supply and manage a large and growing portfolio of renewables, firming generation, and electricity transmission. And we're also exploring the fuels of the future as we look towards what's next.

Our Programs

Our graduates are permanent employees from day one meaning your 2-year rotational engineering program is your launchpad into the dynamic world of energy infrastructure. The program offers a mix of on-the-job learning, professional development and mentoring to accelerate your growth.

Our paid 12-week summer intern program runs from November to February and is a great way to get hands on experience and make a real impact.



Company Overview

From its academic roots, Aurora Energy Research is a thriving, rapidly growing company, currently serving over 600 of the world's most influential energy sector participants, including utilities, investors, and governments.

While we constantly strive to reach new markets and diversify our product portfolio, we are already active across the globe in Asia-Pacific, Latin America, Europe, and North America, working with leading organisations to provide comprehensive market intelligence, bespoke analytic and advisory services, and cutting-edge software.

Workplace Diversity

We are committed to building a company where everyone can achieve their potential in an inclusive and welcoming environment. Through initiatives like our Women@ Aurora network and the Aurora Pride group, we strive to provide further support and opportunities for under-represented groups in the energy sector.

Graduate and Internship Programs

At Aurora, you will apply the skills you have developed through your studies to solving some of our clients' most interesting and intricate problems. Through a mix of structured training programs and on-the-job learning, including regular content talks from our experts, sessions with external speakers, and a program of skills-focused training, we will help you raise your abilities to the next level, preparing you to build trusting relationships with clients, develop new business opportunities, nurture teams and communicate complex ideas with crystal clarity.

If you are a final-year university student or recent graduate, please keep an eye out for the Aurora Energy Research Graduate Analyst Cohort opportunities. Applications are expected to open in March 2026.



Further Information

For more information about Aurora, please visit auroraer.com. Stay updated with #TeamAurora on our Instagram page @lifeataurora.



Boston Consulting Group

At Boston Consulting Group, we believe that diversity is not just a value, but a driver of innovation, collaboration, and meaningful impact. We are committed to creating an inclusive workplace where women can thrive, lead and shape the future of business and society.

Through initiatives such as our Women@BCG pillar, mentorship opportunities, and leadership development workshops, we actively support women at every stage of their careers. Our culture emphasises flexibility, empowerment, and the importance of bringing your authentic self to work. By fostering a supportive environment, we ensure women have the tools and resources they need to succeed.

At BCG, we recognise the unique strengths and perspectives women bring to solving complex challenges. We work closely with student societies like Women in Engineering at Monash to inspire and connect with the next generation of leaders. Together, we aim to break barriers, create opportunities and champion gender equity in the workplace.

We invite you to be part of our journey in building a future where diverse voices shape bold ideas and women in STEM are empowered to lead with confidence.



Company Overview

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting.

In Australia, we're a community of over 2,100 people working in 26+ locations. We're designers, engineers, scientists, and project managers, innovating together to bring buildings, energy and resources, environmental, water, and transportation projects to life.

The Stantec community unites over 34,000 employees working in more than 450 locations across six continents.

Stantec differentiates itself through its global presence with a local focus. The company leverages its international network to share knowledge and technology while maintaining a deep understanding of local needs.

Graduate and Internship Programs

The program is highly industry relevant. Graduates work on real projects across engineering, design, and project management, tackling challenges that are shaping the industry today.

Stantec's Graduate Development Program offers extensive networking opportunities to support career growth. We partner with professional bodies such as Engineers Australia, helping graduates progress along a pathway to chartered status. Graduates also participate in in-person Grad Labs, two-day workshops packed with interactive learning, where they can connect with peers, exchange ideas, and gain insights directly from Stantec leaders.

Graduates also have access to internal professional groups, such as our Developing Professionals Group. This group complements the graduate program by offering additional learning opportunities, networking with colleagues across the business, and new challenges to further develop skills and career growth.

Current Projects

The new Footscray Hospital project will deliver more accessible healthcare to the community with more beds. Stantec is providing mechanical, electrical, communications, hydraulics, fire protection, fire engineering, acoustics, specialty lighting, and vertical transportation advisory services.



Honeywell

Company Overview

In Australia and New Zealand, Honeywell has been delivering solutions to businesses, industries, and consumers since 1962. Today, with over 1,700 employees in 25 offices, we are a diversified technology and manufacturing leader, serving customers with aerospace products and services, control technologies for buildings and industries, and specialty materials.

Workplace Diversity

We foster diversity through Employee Networks that enhance our inclusive culture, sense of belonging, and employee engagement in the Pacific. These networks include WE Connect for Women, Pride Connect, Veterans Connect, and IPP Connect.

Graduate and Internship Programs

Our Early Career programs aim to grow your technical expertise while developing your business and leadership capabilities for a successful career at Honeywell.

In choosing to shape your career with Honeywell as a Graduate, you can expect:

- **Immediate Impact:** Dive into a real role from day one, gaining hands-on experience and making a meaningful contribution.
- **Structured Growth:** Benefit from a 2-year program that culminates in a permanent job with competitive remuneration.
- **Guided Support:** Receive personalised guidance with an assigned buddy in year one and a dedicated mentor in year two as well as participating in your Graduate Huddle Group.
- **Continuous Development:** Embark on a graduate development journey to enhance your technical and leadership skills.
- **Showcase Your Talents:** Sharpen your communication and presentation skills through graduate presentations.
- **Personalised Careers:** Craft an individual development plan to shape your career journey with us.

To learn more about Honeywell Pacific Early Careers, visit our Honeywell Pacific Prosple site <https://au.prosple.com/graduate-employers/honeywell-australia-and-new-zealand>

THE FUTURE IS WHAT WE MAKE IT.

Make an Impact. Make Real Connections. Make the Best You.

Honeywell



Orbits: Journeys Through Engineering

34

Shooting Stars And Near Misses: The Bright Side of Failure

36

Student Teams And Clubs: Find Your Sparkle

38-39

The Girls Club

42-43

From AI Nwcomer To AI Co-Lead

46-47

Starlights And Streetlights: Cadetship, Experience And Skills

35

Charting My Orbit: Three Years of Software Engineering

37

From First Year To First Offer: How To Build Resume Experiencce Before You Have It

40-41

When The Stars Aligned: From Uncertainty To New Directions

44-45

Finding Your North Star: A First Year Guide

Shooting Stars And Near Misses: The Bright Side Of Failure

By Yesha Tesoro

When we think of success in engineering, we think of working prototypes or perfectly executed projects. But if you talk to any working engineer or even an engineering student, you'll quickly realise that every success is built on countless trials, errors and setbacks.

As engineering students it is almost impossible to avoid failure. It shows up consistently throughout your degree and can take shape in many different forms. Sometimes it's all the "ERROR" messages in your code that you spent hours debugging. Other times it could be a disappointing test result, or even an entire unit that doesn't go to plan. In times like these, failure can feel like the end of the world. But we often don't realise that failure is a lesson in disguise. Each one teaches us something new about ourselves and gives us the opportunity to nurture our problem-solving skills that no lecture slide could cover.

Think back to first year where we had to design and prototype bridges to withstand a certain weight. No group managed to get it right the first time. Multiple bridges failed and buckled, joints snapped and weights fell. But after every failed prototype we always learned something new and each rebuild just made the design stronger, more stable and more capable of carrying the load.

This concept can also be extended into the real world! For example, take a look at medical devices like the total artificial heart or the pacemaker. Neither of these breakthroughs came easily; they were the product of decades of failed prototypes, risky trials, and designs that simply didn't work. Yet every setback revealed new insights into how the human body and technology could work together. Each "failure" was really just another step toward creating devices that are now reliable, life-saving, and trusted worldwide, and showing us just how in engineering, failure is just a pathway to success.

As future engineers, especially as women in engineering, it's important we remind ourselves that failure is not a reflection of our ability, but a crucial part of our growth. Each setback, whether in class, in the lab, or on a project team, is an opportunity to adapt, improve, and build resilience. Our journey is not defined by how many times things go right, but by the persistence we show when they don't. If we can embrace failure as a stepping stone rather than a roadblock, we'll not only become better engineers, but stronger, more confident problem-solvers too.



Charting My Orbit: Three Years Of Software Engineering

By Fiona Kim

When people hear Software Engineering, they usually imagine one thing: sitting behind a laptop (preferably at home), typing code, while sipping tea with a cat on their lap. When I first chose Software Engineering, I imagined something similar. I assumed that finishing my degree would magically land me a job, titled Software Engineer, and I'd be making moolah straight away!

But as I wrap up my third year (out of five) at Monash, I've realised this degree is less like a straight road and more like a set of orbits — so many different paths, challenges and opportunities for everyone and it's definitely not always a smooth orbit.

In this article, I'll be sharing some of my biggest struggles at uni, and what I've learnt so far in Software Engineering. I hope my story helps anyone wondering whether this is the "right" orbit for them, as well as first-years who are considering Software Engineering as their specialisation.

Crash Landing My First-Year

I had no coding experience before starting my course. I enjoyed studying Methods 3/4 during my time at VCE, so I naturally thought majoring in Engineering/Computer Science would be a good fit.

In my first year, trying to make Connect 4 in FIT1045 after learning Python for 2-3 weeks was absolutely chaotic. I had messed up very badly during my first live coding interview for the assignment, and struggled to understand basic Python functions while my classmates seemed to breeze through it. And I wondered, "Is this really the right path for me?"

After many sleepless nights, I realised these struggles were not failures but rather great stepping stones in my growth. Software Engineering isn't just about writing perfect lines of code (without Googling!) — it requires time, patience, and resilience. The more I invested in understanding complex concepts, the more confident I became. Slowly, I learnt how to problem-solve and discovered that persistence is the true key to surviving this degree.

Another big challenge was comparison—competing against others can certainly motivate you to some extent, but it can also become pretty toxic. Learning to stop comparing myself to those around me has been one of the hardest, but most important lessons. Still, from time to time, I remind myself that everyone orbits at their own pace, and it's certainly okay to move forward in my own time!

Lessons from My Orbit

After my first two years in Engineering and Computer Science, I started getting more involved in clubs (like WEM!) and activities beyond the lecture halls. Joining clubs changed my understanding of many paths that 'Software Engineering' could take. I watched friends branch into AI research and backend systems, while others

discovered exciting hybrid paths like combining engineering with UX design, product management, or even transitioning into consulting and finance, where analytical problem-solving skills prove incredibly valuable.

If you're beginning to start out in Software Engineering:

- **Don't limit yourself to one pathway:** pick unique electives (not just WAM boosters!), experiment with new tools and see what excites you.
- **Always say 'Yes!' to new opportunities:** Sign up and apply to those club roles you've been eyeing. Get out of your comfort zone!
- **Embrace failure:** It's ok to not meet expectations at times
- **Stay curious:** If you wonder why this works and why that doesn't, always look into it and find the solution yourself. This is the key to learning and constantly improving yourself.

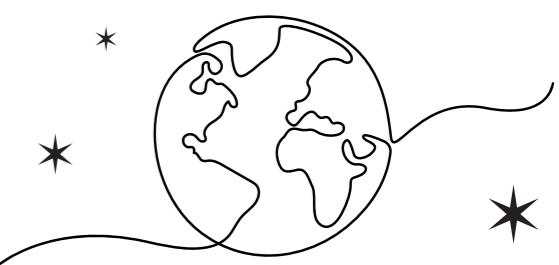
I'm Still Orbiting!

I'm only just past the halfway mark of my degree! There have been tough times, but I don't regret choosing Engineering and Computer Science for Software Engineering. I'm still quite unsure about exactly where my orbit will take me after graduation, but that uncertainty now brings excitement! (Although it still is a bit terrifying...)

I'm a strong believer that as long as you have passion and dedication, you'll find success in the end. And every now and then, coding gives you those special moments of joy, the dopamine rush when you see all 15 test cases pass after 12 straight hours of staring at your screen. Yay!

Your orbit might look different from your friends and others; that's exactly how it should be. The universe of possibilities in Software Engineering is vast; find the path that excites you and don't be afraid to change when new opportunities come and go in different directions. The analytical thinking and problem-solving skills you gain will serve you well in countless fields.

Always make sure to remember, many orbits are rarely perfect circles.



Student Teams And Clubs: Find Your Sparkle

By Arushi Gupta

Outreach Officer

The best way to make the most of being at university is being involved! In my personal experience, I have had the opportunity to be engaged in both student teams, clubs and societies.

Clubs and societies not only offer the opportunity to make friends, but they also offer an opportunity to build social skills in a diverse range of settings. I first joined Monash Boardgames Society (MBS) as a general member to make friends in my early years at university. As I gradually made friends and connections, a position in the committee was recommended to me by the president at the time. She helped me to understand the application process, as well as the commitment necessary for the various roles available to me. This led to one of my first positions in a committee, Diversity and Inclusion Officer. Holding this title for over 1.5 years, has allowed me to grow my interpersonal skills through applying them in a variety of situations. I learned how to voice my opinions at team meetings, represent my club at events, work with people in completely different fields and be a point of contact for people going through difficult circumstances. These soft skills are unique to student societies. Student teams are another great opportunity to build your skills, but perhaps in a more practical sense.

I joined the engineering student team, Precious Plastics Monash (PPM), at the beginning of this year. I had to go through a formal application process with an interview at the end, which was quite similar to a real-life scenario to get a job. Once I was assigned to my division and project, I found great joy to be in a team with like-minded people who have a passion for helping the environment, just like me. I have been learning through hands-on experiences in a lab and workshop setting and I would have definitely missed out, if I hadn't joined the team. It has also given me the rare opportunity to learn from academics and experts in the field.

As I volunteered for more experiences, I found that it got easier and easier to "get the job." There were 2 reasons for this. The first is, that I had more and more experiences and skills to not only add to my resume, but to also show to my interviewers. And the second is that I got increasingly better at the interview process through repeated practice.

These volunteering experiences have been truly valuable to me, not just for a job, but also for life in general. There are many situations that I would handle much better today than I would have before being a part of these experiences. As an added bonus, employers generally look for individuals that have the kind of skills and experiences gained from participating in student clubs, societies and teams. Hopefully, this article can guide you to a better future!



From First Year To First Offer: How To Build Resume Experience Before You Have It

By Imogene Jones

One of the most frustrating experiences for engineering students is that entry-level jobs and internships often ask for prior experience. How do you gain that first role when every role seems to require it? The good news is that experience comes in many forms, and often from places you may not expect. By reframing what you've already done and seeking out creative opportunities, you can show employers that you have what it takes. I landed my first internship using these strategies, and since then I've gone on to complete four during my degree.

Transferable skills from 'unrelated' work experience

Part-time jobs in customer service, hospitality, or retail can feel worlds apart from engineering, but they actually build skills employers look for. Handling tricky customers teaches you how to communicate under pressure. Training new staff or running a shift shows leadership. Even using stock systems or fixing equipment is a form of technical problem-solving. These kinds of experiences might not look like engineering on the surface, but they show initiative, teamwork, and adaptability, the same qualities you'll need in an internship.

Building a Project Portfolio

When you're early in your degree and light on professional experience, your curriculum itself can be a resource. Group assignments, and lab projects demonstrate technical skills, collaboration, and project management. Create a "Projects" section on your resume where you describe what you built, the tools you used, and the impact of your work.



Even small personal projects can shine. Maybe you automated a household chore with Arduino or developed a simple app. Give your project a name, frame it like a startup in progress, and explain the problem it solves. Treating your side projects seriously shows initiative and creativity.

Student Teams and Clubs

Joining a student engineering team or club is one of the best ways to gain hands-on experience, and these teams operate like small businesses. They involve technical work, business management, leadership, and collaboration. Not only do student teams give you projects to discuss in interviews, but they also provide a network of peers and alumni who can open doors to internships and graduate roles.

Tailor your CV

It's also worth tailoring your CV to the role you're applying for. If you're doing a double degree, keep two versions, highlighting experiences relevant to each field. If the position is in a more general area of engineering, like production or systems, adjust your CV to emphasise transferable skills and broader technical knowledge rather than focusing too narrowly on your specialisation. Having a few different versions ready makes it easier to show the most relevant side of your experience.

Embrace Networking

Experience isn't only about what you do, but also about who you connect with. Attending industry nights and networking events gives you the chance to have real conversations with engineers in the field. At the very least, these encounters can help you explore different career directions and clarify your interests. At their best, they can inspire project ideas, provide strong examples to use in interviews, and even open doors to mentorships or that elusive first internship.

When you're applying for your first internship, employers don't expect you to have it all. What they want is evidence of your potential. By reframing your part-time jobs, leveraging coursework, building a project portfolio, and joining student-run teams, you can create a compelling story that bridges the gap between "no experience" and your first engineering role.

The Girls Club

By Cleopatra Dhliwayo

Outreach Officer



Have you ever wondered why society makes such a big deal out of firsts, why we write down in big bold letters when someone is the first to innovate something, to discover something, or to dare venture into the unknown? It is the same reason we love heroes. We love people who dare to stand for something, because it takes a lot of guts to be brave. And we write these firsts down to remember that if someone else has done it, then maybe we could do it too.

My journey as a Zimbabwean mechanical engineering student at Monash has been nothing short of venturing into the unknown. I remember walking into my first mechanical engineering class and feeling something akin to a fish out of water, or maybe a fish in the wrong water (is a Finding Nemo reference too old to use now?). Contrary to popular belief, appearances do matter. And when you make a Venn diagram of female-identifying international students from Zimbabwe studying a particularly male-dominated engineering major, you are left with a pair of almost mutually exclusive subsets.

So why does representation matter in engineering? Think back to two famous moments in history: the four-minute mile and the first woman to run a marathon. For decades, scientists, doctors, and coaches believed the human body simply could not endure a mile run in under four minutes. They claimed the lungs would burst, the heart would fail, and the body would collapse. And women? Oh, they couldn't run marathons, what if their uteruses fell out! (People actually believed this.) Then, in 1954, Roger Bannister ran it in 3 minutes 59.4 seconds. And suddenly, within weeks, others followed. What was once thought scientifically impossible became not only possible but common among elite runners. And in 1967, Kathrine Switzer entered the Boston Marathon under her initials "K.V. Switzer" to avoid detection. During the race, an official even tried to drag her off the course. But she finished. She proved the gatekeepers wrong. Once women saw it could be done, more and more joined, and today women's marathons are a celebrated part of the Olympics. Both moments show that people, in most cases, need to believe something is possible for them to achieve it, and the most powerful way to believe is to see it done. Seeing is believing.

As modern and technologically advanced as our society is today, gender stereotypes are still barriers for young women, and even for seasoned professionals in STEM fields. The so-called "boys' club" was created through the compounding effect of having a disproportionate number of men in these fields for centuries. This happened through the positive feedback loop created by having men writing history through a patriarchal and male-centered lens, shaping geopolitics, art, literature, science and, most importantly, gatekeeping education through tyrannical structures that robbed women of basic rights such as voting, access to schooling, the right to own property and the right to take part in shaping socio-economic structures. Combine that with generations of women being portrayed as hysterical, irrational, and overly emotional compared to the pragmatic and logical male leader figure, and you have a long-standing narrative that dis-empowered women for centuries and cemented the imbalance we still feel today.



This is why it is still imperative and relevant to have women from diverse backgrounds in engineering. We need mirrors. We need beacons to show women, particularly young women and girls, that their dreams are possible and that the shackles and limitations society tries to impose are only real if they allow them to be. Something magical happens when you see someone do something monumental. It is more than inspiration. It is that spark in your mind that says, "That person is a person just like me. They look just like me. Therefore, I can do what they have done. I can mirror them."

In a way, I grew up in a room full of mirrors. I went to an all-girls high school and grew up seeing young girls turn into phenomenal young women. Many of my classmates graduated and were accepted into Ivy League schools. A majority of my class chose to study sciences, with a disproportionate number choosing mathematics over English. Contrary to popular belief, women and men are equally capable of high-level mathematics, engineering, and logic-driven problem solving. I never felt like I could not do something, or that something was reserved for one gender, because the mirrors around me showed me otherwise. The fastest runner was a girl, the highest achiever in academics, and this pattern followed in all the various extracurricular activities that were carried out in the school. This created an empowering environment where my mind believed that women can achieve anything they set their mind to. That was the power of representation in my life, and I still carry this mentality with me.

As an Outreach Officer in WEM, my passion is to inspire young women to follow their career dreams, regardless of the gatekeepers. This is why spaces like WEM are so important. They are not just a place to build community and networks but, more importantly, a place for young women to see their reflections and not be intimidated by the traditional "boys' club" often associated with engineering.

Engineering may have been a boys' club in the past. But welcome to the girls' club.



When The Stars Aligned: From Uncertainty To New Directions

By Claire Ahn

Hi, I am Yi Jing (she/her/hers) and I hope my reflections and stories are useful. It was challenging to condense 4.5 years into 2 pages and I want to say it is totally fine to not have everything figured out, just keep looking and the answers will come.

Can you share your journey from studying chemical engineering and arts to moving into industrial design? What made you decide to switch?

19: I started my double degree in Chemical Engineering and Arts during the midst of Covid. I was determined to be involved in university life as much as I could while offshore in Malaysia, so I decided to join the Monash Solar Decathlon Team (MSDT), back before we rebranded to the Monash Sustainable Buildings (MSB) we know now. Little did I know that MSDT would be a turning point in my degree and life later on.

In my second year, I took an intermission break. A perfectly healthy individual, but I began to experience tension headaches when I started my university education. I also felt dissatisfied and lost in life because of the lack of clarity and meaning. My love for learning and understanding was not able to cope with the sheer volume of content that engineering was feeding my brain. I constantly felt like I was swimming in content and concepts that I didn't fully understand.

Then, the moment happened. The moment when I rediscovered my enjoyment for creating.

The moments started during one of my first in-person catch-ups with the others in MSDT. We had a painting session, and I remember standing in front of Woodside, holding a make-shift cardboard arboard. I also did a summer research scholarship with PhD Candidate Benjamin Phua at the Inclusive Technologies Lab in the Faculty of IT. Through my scholarship, I was exposed to design sprints, 3D printing and the maker culture. These got me VERY excited and interested.

My conversation with my supervisor also prompted me to do more soul searching, and I thought I was self-aware then! Landing on industrial design was fairly quick: I realised I wanted an intersection between technical and creativity, so I did a quick google search and made a decision.

What were some of the biggest challenges or surprises you faced when making that change?

My grades were fairly good, so I was quite confident that I would be able to switch successfully and there were no additional requirements like portfolio submission.

The biggest challenge was probably turning up to my first day of design class without being officially enrolled and having to explain

the situation. I was doing ENG2005 during the summer and the enrollment team couldn't confirm my place until the results were released during the semester. I suppose taking a small risk is good at times. This was where I wanted to be.

I was surprised by how powerful design is, and how powerful I felt to be able to use design to bring my vision alive into physical reality.

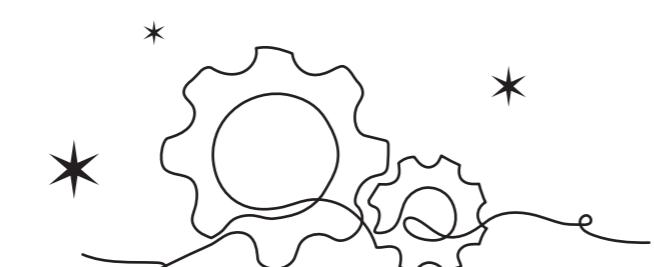
Are there skills or experiences from chemical engineering or arts that you still use in your industrial design work today?

My experiences in STEAM continued with me in their ways. The systematic approach and systems thinking from engineering; the essay writing from the arts. Together, they enabled me to bridge theory and practice in application.

How has studying in such different fields influenced the way you approach projects and solve problems?

Studying in these different fields has kept me with an open mind, and I often see opportunities arising from the combinations of unexpected areas. I also came to see the world as a complex system where everything is interconnected, and I like to approach problem-solving with this complexity taken into account. To me, complexity is a more accurate representation of how things work in reality rather than simplification.

Being a designer is less of a dreamer and intuition, design problem solves by asking the questions to find the right problems, by putting people first and by showing people what could be, what possibilities and future we could be living.

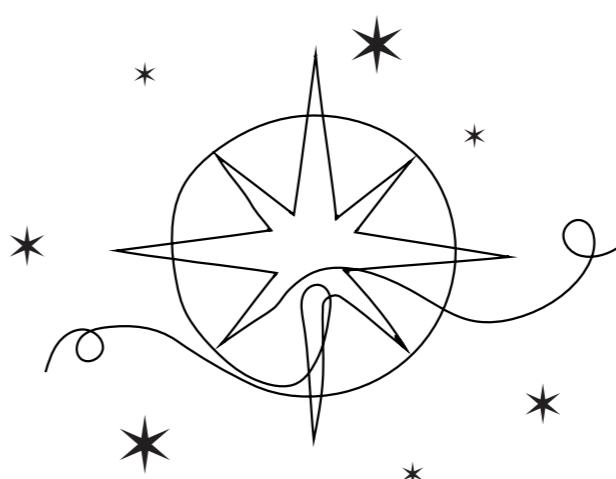


What sparked the idea for the Monash Assistive Technology Team, and what part did you play in getting it off the ground?

The lab's leadership team saw the potential and benefits in bridging engagement between students and research with success of the summer research scholarship. A student team was the perfect space to cultivate this. I remember Dr Kirsten Ellis bringing it up during our lunch session and asking Jai Kanda (another summer scholar) and I about our interests; we both thought it was a wonderful initiative.

MATT started with two leads, Jacquie Johnstone and William Chen, over the '22-'23 summer and I was not officially involved until April '23 when I caught up with Jacquie about the team. I met the small committee team of around 7-8 people first time on Zoom. Traction was slow during the first few months until August, when we held our first IT Student Team Fair. By then, the core team consisted of Will, Diana and I, who stayed and continued to build the team.

It's difficult to divide responsibilities between the three of us, we were doing a little of everything from recruitment, pitching, events to strategic planning of the team structure, project coordination etc. '23-'24 summer was my most memorable as I was traveling to Clayton from the city (too often!) to meet and work with the branch leads to lay the groundwork processes. More importantly, my role as interim team lead was to foster leadership confidence since we were expecting more recruits in the new year.



What is one lesson you did not expect to learn from leading a multidisciplinary student team?

Conflicts and disagreements are inevitable, and having these with raw, honest communication is overall better to foster an open team culture. Backgrounds aside, we're all just a group of people trying to do something meaningful while having fun.

What advice would you give to other students who are thinking about changing degrees or starting their own student-led project?

Changing degrees

1. Shift the perspective of university and your degree as stepping stones for job security back to its roots as a space for learning.
2. Do some soul searching, explore and talk to people.
3. Figure out what's important to you.
4. Think about career trajectory: some professions require qualification and license (think Medicine, Law, Architecture, Engineering) while others do not so much
5. Think twice.
6. Make a decision.

I have always been someone who follows my interests and tries my best at everything I dedicate myself to, so I would caution against changing degrees for better job prospects, unless that's aligned with your life goals. A lot of people have interesting career pathways where their tertiary education is not related to what they do later in life.

Student-led projects

Scenario 1: under an institution/ governing body (like student teams, MSA clubs and societies)

Think carefully, it's not as simple as getting a few friends together; you also need someone higher up to support your initiative or supervise, depending on where you decide to start. Be warned of power relations and bureaucracy.

Scenario 2: you and other like-minded people Just do it!

From AI Newcomer to AI Co-Led

**Sophie Xu,
Bachelor of Engineering / Commerce, 3rd Year**

By Kenuli Wijegunarathne



Tell us a bit about yourself.

Hello, I'm Sophie, the AI co-lead for Monash DeepNeuron. I'm currently in my third year studying a double degree in software engineering and commerce. Outside of academics, I'm a pretty outdoorsy person and love hiking. I also work as a teaching associate for ENG1012 and as a student engineer with Natural Beauty Care, which manufactures cosmetics and hair care products for different companies.

What sparked your interest in AI, and why did you want to explore it at university?

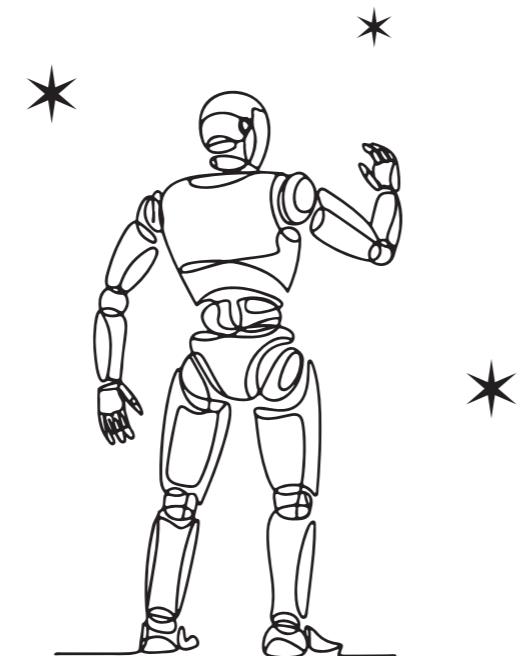
Honestly, I didn't really know much about AI, especially in my first year. Around 2023, it started to really blow up, but I didn't get a chance to do any AI-specific units due to my course structure.

The real turning point for me was a two-day workshop conducted by Monash at the end of my first year. It covered the basics like linear regression, clustering, and some high-level programming. That gave me a basic introduction, but it wasn't until I went to DeepNeuron's end-of-year showcase that everything clicked. Seeing all their projects on display was a "wow" moment for me. Even though I felt like I didn't have the strongest technical skills, I wanted to give it a go. Joining DeepNeuron was my way to gain hands-on experience and learn how AI really works beyond just theory.

How did working on AI projects at DeepNeuron shape your learning compared to self-study?

The biggest difference is learning with people. It's easy to go at your own pace, watch YouTube tutorials and follow line-by-line instructions, but you're not really challenged. At DeepNeuron, you're part of a team, you have objectives, and there's accountability. That's where the real learning happens, especially when you're surrounded by super passionate and driven people.

My very first mini-project was a convolutional neural network (CNN) project. We used a drone dataset, basically a bunch of aerial images, to train our model through segmentation. This process consisted of the AI identifying and mapping out objects, such as trees, pathways, and people, within those images. It only lasted



two weeks, but it gave me exposure to the full pipeline: finding the dataset, training the model, validating results, and presenting our work. Since then, I've worked on different models across multiple projects, which has really broadened my understanding of AI applications.

You stepped into the role of AI co-lead this winter break. How has this step up changed your perspectives?

It's been a big shift. As a team member, you're focused on the code, so you'll spend your time coding, debugging, and fixing what's broken. Then, as a project manager, I had to start balancing deadlines, coordinating availability, and making sure the team worked to everyone's strengths.

Now, as an AI co-lead, it's even broader. I'm across all AI projects, which means a lot more admin work than I expected. Suddenly, I'm not just responsible for one project, but for ensuring that all the project managers know what's happening, that everyone has support, and that the branch itself is running. I think it gave me a new appreciation for how much effort the previous leads were putting in; it's a lot more work behind the scenes than you realise at first.

What has been one of your biggest challenges when working with AI, and how did you overcome it?

One challenge I've noticed, both personally and more broadly, is the over-reliance on AI tools. They're so accessible now, which is both amazing and risky.

For example, I tutor a year 10 student in maths, and she sometimes comes to me saying, "ChatGPT told me this is the answer," but she doesn't understand the reasoning behind it. That's where the problem lies: people skipping over the "why" and just trusting the output.

I've had to remind myself of this, too. Even in my own work, I sometimes use AI tools to proofread and support my learning, but it's important to understand and edit what it gives you. Otherwise, you lose the critical thinking and learning that's supposed to be the whole point.

How do you juggle leadership, study, work and life?

It's definitely a struggle, but routine helps. My week is structured so I know exactly where I'm meant to be: certain days for uni, one day for teaching, specific times for work, and then leaving time free for DeepNeuron commitments, catching up on study or seeing my friends.

I'm also really lucky with my workplace. My manager is incredibly flexible, letting me adjust my hours when uni deadlines pile up. That support has been a lifesaver.

Of course, sometimes you have to make trade-offs like prioritising big assessments over smaller tasks, or accepting that you can't watch every lecture recording in full. I've learnt it's okay to let go of perfection and focus on sustainability.

AI is evolving so quickly. How has learning AI shaped your view of the future of engineering?

I think it's going to pivot engineering where there'll be a bigger focus on actual problem solving, logic and critical thinking. Engineers will also need a lot more soft skills, like communication and teamwork, on top of the technical skills. So, I don't see engineers disappearing, but I do see the role evolving a lot.

Finally, what advice would you give to students who want to get started in AI or join a team like DeepNeuron?

Just give it a shot! You don't have to be the most technical person to start, and you'll learn something no matter what. Look into free resources like YouTube tutorials or online courses to get some basics, and then apply to a student team where you can work on real projects with real people.

Joining a team is one of the best decisions I've made. Not only do you gain technical skills, but you also meet incredible people who're motivated to learn just like you. That community makes all the difference!

Finding Your North Star: A First Year Guide

By Hemali Katiyar



As my first year of university draws to a close, I have been reflecting on how unexpected and transformative the journey has been so far. The challenges I have faced have pushed me to grow, while the opportunities presented have helped me discover more about myself. Along the way, I have learned that uncertainty is a natural part of university life, but so too is the chance to build resilience and adapt.

To gain another perspective, I spoke with Jessica Hu, a fellow student, about her own experiences, and together we explored the decisions, challenges and lessons that have shaped our journeys thus far. We hope that we can impart some of the knowledge we have gained to aid the transition of future students.

What was the decisive factor in choosing to pursue the degree that you did?

Jessica: "Heading into uni, I wasn't sure where exactly my interests lay or more precisely, I am interested in many areas of study and I couldn't decide on picking one and giving up on the others. Therefore, I've chosen to engage with a double degree structure, and explore more fields of knowledge. I was also hoping that double degree can offer me some fresh perspectives when viewing questions in each of my courses."

Hemali: "Pursuing a single degree allowed me to concentrate more on one field of study, enabling me to achieve my best results while also graduating within four years instead of five - meaning I get to enter the workforce sooner. For me, I didn't particularly have a strong passion for any other area of study that I couldn't just pursue in my own time as a hobby or as an elective, so a single degree suited me best."

Was a career in engineering a lifelong ambition? How do you plan to utilise your double degree to turn it into a unique professional career?

Jessica: "As for now, I'd love to practice in the industry as an engineer. My double degree in commerce can help me with a better understanding of the business side of things when it comes to decision making in the engineering design processes. This composite perspective of both technical and commercial may become beneficial when integrated into a specific design for engineering projects, exploring more feasible possibilities in the industry."

Hemali: "Personally, I have known that I wanted to pursue a career in mechanical engineering since the age of 16, as it helped me select what VCE subjects I had to complete in order to enter the course. To make the most of my degree, I plan to take advantage of the student teams, clubs and internships from my second year so that I am able to achieve practical experience that contributes to my CPD hours as industry professionals have provided me with advice on its importance."



What tends to be your greatest source of stress, and have you ever experienced burnout? If so, what strategies do you use to recover and regain motivation?

Jessica: "When most assignments are due around the same time, I tend to stress out. Whenever I'm having a burnout, I bring these feelings up to my family and friends. Especially when talking to my uni friends and knowing that everyone is in the same boat together, I get to acknowledge and accept my anxiety and stress, then try to work with these feelings instead of against them. Aside from that, doing sports or going on outdoor trips is always my best therapy."

Hemali: "I tend to find myself stressed when I get results back for assignments I have completed, and they are not up to the level that I thought they would be. Sometimes my best effort is not good enough and that stresses me out which has led me to crash and burn a few times within my journey so far. To keep myself motivated, I have to think long term and how one grade is not going to limit me from achieving great success in my degree unless I let it. There will be plenty of opportunities to recover where I can do even better."

Have you ever grappled with feelings of imposter syndrome, and how do you navigate those moments of self-doubt?

Jessica: "Many people have experienced imposter syndrome and I'm no exception. However, I focus more on what's happening at the moment like the specific tasks or learning targets during these moments of doubts. It's always comforting when I know that I'm working really hard to achieve what I deserve."

Hemali: "When I first received my ATAR it was a huge point of contingency for me which led me to believe that I did not belong in my course. As time passed on and I worked with my peers, it dawned on me that my ATAR did not matter at all because I was achieving decent results regardless of my score. So, whenever I am overcome with feelings of doubt, I rethink to how something like my ATAR score ended up being so insignificant."

What is your advice for forging friendships and a support network within an academic setting?

Jessica: "Participating in different clubs and societies that you're interested in. You're likely going to meet like-minded people."

Hemali: "Sometimes within a class setting, being the first one to start a conversation by introducing yourself is enough to start creating friendships."

What single piece of advice would you offer to your younger self?

Jessica: "Tomorrow is now yesterday, YOLO :)"

Hemali: "There is always a pathway for you to achieve your goals, the alternative may be slower but that's why we live long lives."

Our conversation about imposter syndrome touches on a critical industry-wide issue. Women are severely under-represented in the Australian engineering industry, making up only 11.2% of the workforce. This stems from systematic barriers such as a "lack of familiarity" with the field and perceptions of it being "too difficult" of a field to pursue (Bell et al., 2022). These external challenges often trigger imposter syndrome; with research showing that this disproportionately affects women in engineering, with 50% of women experiencing it compared to only 33% of men (Bell et al., 2022).

However, the reasons to stay and succeed within the field are compelling. Female engineers report high job satisfaction in a profession dedicated to creative problem-solving and making the world a better place. Furthermore, diversity is a strategic asset; companies with diverse management teams generate 19% higher innovation revenues, proving that diverse engineering teams are crucial for tackling complex global problems (Lorenzo et al., 2017).

Retaining women is not just an equity issue but an economic imperative to solve Australia's skills shortage. Overcoming imposter syndrome by recognising it as a common experience and fostering inclusive workplaces are critical steps to unlocking this vital talent pool and building a more innovative engineering workforce.

References:

Bell, M., Briggs, P., Romanis, J. and MacMaster, J. (2022). Strengthening the engineering workforce in Australia: Solutions to address the skills shortage in the short, medium, and long term. [online] Engineers Australia. Engineers Australia. Available at: <https://www.engineersaustralia.org.au/sites/default/files/2022-08/strengthening-engineering-workforce-australia.pdf> [Accessed 28 Aug. 2025].

Lorenzo, R., Voigt, N., Schetelig, K., Zawadzki, A., Welpe, I. and Brosi, P. (2017). The Mix That Matters Innovation Through Diversity. [online] The Boston Consulting Group. The Boston Consulting Group. Available at: <https://media-publications.bcg.com/22feb2017-mix-that-matters.pdf> [Accessed 28 Aug. 2025].

Starlights And Streetlights: Cadetship, Experience And Skills

**Julie Leung,
Bachelor of Engineering / Commerce, 2nd Year**



By Elise Vayenas

Tell me a bit about yourself; What do you study? Where do you work?

My name is Julie, and I am currently in my penultimate year of a Bachelor of Civil Engineering and Commerce (majoring in Finance) at Monash University. Alongside my studies, I work part-time at Trafficworks Pty Ltd, a consultancy that provides specialist traffic management plans and traffic engineering advice to both public and private clients.

What does your workday look like?

I start my workday at 8:45am, usually settling in with a cup of tea. I begin by checking any outstanding emails that require my attention. My supervisor usually assigns me tasks or projects to work on for the day, and I do so, seeking guidance from my supervisor or colleagues as needed. My workday typically finishes between 5:00 pm and 6:00 pm, depending on the workload.

Balancing study and work, how do you avoid burnout? What do you enjoy doing outside of University?

I try to keep on top of my assignments and make a conscious effort to not leave tasks until last minute. Alongside this, I make sure to set time aside for activities I enjoy and spend time with friends and family.

Outside of work, I enjoy pilates and I love exploring different restaurants to try new food experiences. On the more unexpected side, I also enjoy gaming and have recently been playing a lot of Valorant, which often surprises people when they first get to know me.

Was there something about road engineering or traffic that interested you, perhaps from class or were you wanting to just try something new?

To be honest, what drew me to the traffic field was Melbourne's current traffic conditions. I'm sure for all of us, congestion during peak hours can be challenging, and I was curious about the solutions and designs implemented to improve traffic flow and capacity. With recent major projects such as the Suburban Rail Loop underway, traffic management and planning is very visible and relevant, making it an exciting field to explore.

What does your role involve? Has there been any overlap with what you learn at University and at Trafficworks?

My work involves conducting public lighting assessments of existing conditions to determine compliance with the Australian Standard requirements. I also provide public lighting recommendations for newly proposed designs, such as road humps and roundabouts.

While this wasn't directly taught in CIV3283 Road Engineering, many of the concepts are relevant. For example, the unit emphasises the importance of designing roads for the safety of both users and vehicles, which closely aligns with my work in ensuring lighting designs meet safety standards and enhance visibility for all road users!

How has your understanding of engineering evolved since you started working?

Since I started working, I have realised that engineering is a much more complex field than I thought. There are so many stakeholders to consider (clients, councils, government bodies and the broader community) and each has different expectations and priorities. This has shown me that engineering is not just about applying technical knowledge, but also about balancing safety, compliance, cost and user needs.

What kind of mentorship or support have you received in your role, and how has it helped shape your experience or confidence as a cadet?

All my colleagues are very supportive, approachable, and willing to help. I never feel afraid to ask questions, as I know they will treat my queries with respect rather than judgment. Since my first day, I have been given a variety of projects that have allowed me to gradually build my knowledge of street lighting.

At work, we use a software program called MicroStation extensively, which was initially quite overwhelming for me as I had minimal CAD experience. Yet over time, I gradually familiarised myself with the functions and tools, and with guidance and practice I have become much more confident in using it.

What sort of actions do you take to grow professionally within your job and tackle challenges that arise with new tasks?

My mindset is to treat each task (big or small) as a chance to improve, and to actively seek feedback so I can identify areas for growth. I also make it a habit to ask for help when I need it. On my first day, my supervisor encouraged me to ask as many (wise) questions as I wanted, as he would rather I ask a billion questions and successfully complete the task, than avoid asking and do things incorrectly.

What is a skill you have learnt on your job that you are most proud of?

Definitely my ability to work under pressure. Our clients sometimes request a quick turnaround, which can be challenging as I am still relatively new to the company and field, however, I have learned to prioritise tasks, helping me not only effectively manage my workload but also allowing me to deliver quality work in time-sensitive situations.

Is there anything you would do differently in your earlier years at University?

Looking back, I would have also sought more opportunities to engage in industry projects, internships, or simulations earlier in my degree. This would have helped me become more confident in applying technical knowledge, working under time pressures, and communicating with stakeholders - skills that are essential in my current role.



Supernovas: Breaking Barriers & Shaping The Future

49-51

A Look Through The Stars In STEM:

52

Equal Pay: The Missing Pieces Of The Equation

53

Why We Need More Women In Engineering:
Stories That Say It All

56

Breaking Societal Norms Is The New Norm

58-59

Igniting Bright Minds: Engineering Education
For The Future.

62-63

Listening For Change

A Look Through The Stars In STEM: How Women Have Shaped STEM Through The Years

By Stefani Rijab & Claire Zhang

Introduction

In 1993, during Ruth Bader Ginsburg's confirmation hearings before the U.S. Senate, she said "real change, enduring change, happens one step at a time."^[1] It has been over three decades since, and yet, her words still ring true. According to a 2022 report by Engineers Australia, women made up 13% of the workforce [2]. Now, in 2025, that number has grown to 16% [3]. However negligible this increase may appear, it must be remembered that Australia's first female Electrical Engineer, Florence Violet McKenzie [4], opened the door a little over a century ago, and little by little, one by one, women have passed through that door and held it open for the next. As a tribute to the women who come before, now, and after, this article aims to highlight their individual dreams and contributions into shaping STEM, and by extension, the world that we live in today.

Past

Ada Lovelace - Enchantress of Numbers

The first to theorise that machines could be applied to more than pure calculations was Augustus Ada King, the Countess of Lovelace, or better known as Ada Lovelace [5]. Educated thoroughly from an early age, Ada developed considerable interest and talent in mathematics. When she was 12, she decided she would fly and embarked on her project in a logical and orderly manner [6]. To build her wings, she looked at different materials and studied them. To decide on the right measurements, she inspected bird morphology. She even wrote a book on it, planning to utilise steam in her design. Beyond her genius in mathematics, Ada valued metaphysics just as much. Using her studies in poetry, she challenged basic mathematical assumptions [7]. In 1833, at age 18, Ada met Charles Babbage, regarded by many as the "Father of Computer". Ada's fascination with his idea on constructing a digital mechanical general-purpose computer, which he named the "analytical machine", marked the beginning of her contribution to computer programming [7]. Inspired by Babbage, she wrote "Note G", a computer algorithm that aimed to calculate the Bernoulli numbers on the proposed machine. Now, over a century later, the algorithm is generally considered to be the first ever published computer program [8].

Florence Violet McKenzie - First Female Electrical Engineer in Australia

Now, time jumps forward to 1915, in Sydney, Australia, when Florence Violet McKenzie went up to Sydney Technical College, planning to enrol in the Diploma of Electrical Engineering [4]. When told that she could only undertake the course if she was currently doing a job in electrical engineering, she went on her way and set up her own electrical contracting business, training herself under it to meet those requirements. She won the diploma in 1922 and graduated a year later. Starting from the 1930s, she began to dedicate her efforts towards educating other women about electricity and radio. Two years later, a Women's Radio College was established on Phillip Street, and many of her trainees ended up working in different sectors of the industry. Additionally, she became the founder of the Women's Emergency Signalling Corps (WESC) to train women in telegraphy. These women were tested and eventually accepted into the then all-male Navy, making up the original Women's Royal Australian Naval Service (WRANS). This was much thanks to Florence's tireless efforts in campaigning for them [4].



Hedy Lamarr - Mother of Wifi

Fast forward to the late 1930s, to the life of a Hollywood actress during the Golden Age, Hedy Lamarr. During this time, Hedy learned that radio jamming was a significant issue faced by the Allied powers in World War II, especially when guiding torpedoes [9]. As she discussed this with her new friend, avant-garde composer George Antheil, at a dinner party, she came up with the idea of frequency hopping. Combined with Antheil's technique in synchronising note hopping in one of his previous works, this led to the realisation that, by using piano-rolls to switch frequencies, radio-guided torpedoes could become harder for enemies to detect and jam. Together, they developed their "Secret Communications System" and donated their patent to the U.S. Navy [9]. Although their patent was shelved and never used in World War II, this approach became the basis of spread spectrum technology, whose principles had a firsthand impact on developing secure wireless networking. This includes the early versions of Wi-Fi and Bluetooth [10].

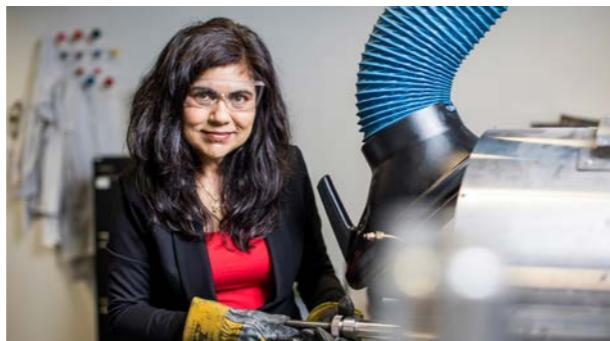


Present

Professor Veena Sahajwalla - Queen of Waste

From New Delhi to Sydney, Professor Veena Sahajwalla has carried her passion for science and sustainability across continents. An Engineer and Materials Scientist, she first studied Materials and Metallurgical Engineering at the Indian Institute of Technology Kanpur before earning her PhD at the University of Michigan. Now based in Australia, she is internationally recognised for pioneering the concept of "green steel," which involves replacing coke in steelmaking with recycled rubber from old tyres [11]. This innovation not only reduces greenhouse gas emissions but also diverts waste from landfill, transforming environmental problems into resources. In 2022, she was named the NSW Australian of the Year, and today she continues her vision as the Founder and Director of UNSW's Sustainable Materials Research and Technology (SMaRT) Centre, reshaping industries through recycling

science. Most recently, in March of this year, she unveiled the Plastics Filament MICROfactory, a small-scale recycling plant that breathes new life into hard plastics, such as discarded printers and computers, by transforming them into 3D printing filament [12]. This is a powerful example of turning society's waste into tomorrow's resources.



Vanessa Wyche - NASA's Rocket Woman

Across the globe, in Houston, Vanessa E. Wyche is carving new paths in the heavens. Born in South Carolina, she earned a Bachelor's degree in Science in Engineering and a Master's in Bioengineering from Clemson University, before beginning her career at NASA in 1989 [13]. Rising through the ranks, she became the first African American woman to serve as Director of NASA's Johnson Space Center in 2021, where she oversaw the center's human spaceflight missions, including the development of the spacecraft and selection of astronauts. She is now Acting Associate Administrator of NASA, where she oversees more than 18,000 employees and the annual budget of over \$25 billion to ensure smooth operations day-to-day. Her leadership has been instrumental in advancing Artemis, the program aimed at returning humans to the Moon and paving the way for Mars exploration. Today, she continues to lead with a steady vision, ensuring the next generation of astronauts and engineers reach beyond Earth with the same curiosity and courage that defined NASA's earliest days.



Dr Katalin Kariko - COVID-19 Vaccine Nobel Laureate

Meanwhile, in the laboratories of science and medicine, Dr. Katalin Karikó's perseverance has transformed global health. Born in Hungary, she earned her PhD in Biochemistry at the University of Szeged in Hungary before emigrating to the United States in the 1980s [14]. Despite decades of critics, doubt and limited funding, she persisted in her research on messenger RNA (mRNA), the genetic material that instructs cells to make proteins, driven by her conviction in its therapeutic potential. Her collaboration with immunologist Drew Weissman ultimately unlocked the key to enable mRNA to instruct cells to create antigens, laying the groundwork for the Pfizer-BioNTech and Moderna COVID-19 vaccines [15]. For this, she and Weissman were awarded the 2023 Nobel Prize in Physiology or Medicine. Today, Karikó is a Professor at the University of Szeged and the University of Pennsylvania, and she continues to be involved in biomedical research [16].



Future

From the pioneering visions of Ada Lovelace, Florence Violet McKenzie and Hedy Lamarr to the groundbreaking achievements of Veena Sahajwalla, Vanessa Wyche, and Katalin Karikó, women have continually reshaped what is possible in science and engineering. Although the former were often excluded from the recognition of their work and achievements, they never gave up in pushing the boundaries. This was not only for themselves, but for every woman that came after them, whose numbers are growing year by year. Like stars scattered across the night sky, their individual contributions shine on their own, but together, they form a constellation that lights the way forward. As their stories remind us, progress may come one step at a time, yet those steps chart a future where the brilliance of innovation belongs to all. We'll end this article with a quote from Katalin Karikó herself, in light of the journey ahead: "Stay curious, adopt the right attitude and stay on the track no matter how long and winding that road may be" [15].

References

- [1] California Commission on the Status of Women and Girls (CCSWG), "The Notorious RBG." [Online]. Available: <https://women.ca.gov/the-notorious-rbg/>.
- [2] W. Howard, "Just 13 per cent of engineers are female, but push for gender parity is building on International Women's Day," ABC News, Mar. 7, 2024. [Online]. Available: <https://www.abc.net.au/news/2024-03-08/push-for-more-women-in-engineering-and-stem-careers/103561460>.
- [3] Engineers Australia, "International Women in Engineering Day spotlights progress and gaps," media release, Jun. 23, 2025. [Online]. Available: <https://www.engineersaustralia.org.au/news-and-media/2025/06/international-women-engineering-day-spotlights-progress-and-gaps>
- [4] C. Freyne, "McKenzie, Violet," Dictionary of Sydney, Dictionary of Sydney Trust, 2010. [Online]. Available: https://dictionaryofsydney.org/entry/mckenzie_violet.
- [5] J. Fuegi and J. Francis, "Lovelace & Babbage and the creation of the 1843 'Notes,'" IEEE Annals of the History of Computing, vol. 25, no. 4, pp. 16–26, Oct.–Dec. 2003, doi: 10.1109/MAHC.2003.1253887.
- [6] B. A. Toole, "Poetical Science," The Byron Journal, vol. 15, pp. 55–65, 1987, doi: 10.3828/BJ.1987.6.
- [7] B. A. Toole, Ada, the Enchantress of Numbers: Prophet of the Computer Age. Strawberry Press, 1998. ISBN 978-0-912647-18-0.
- [8] "Ada Lovelace | Babbage Engine | Computer History Museum," Computer History Museum. [Online]. Available: <https://www.computerhistory.org/>.
- [9] Wireless History Foundation, "Hedy Lamarr." [Online]. Available: <https://wirelesshistoryfoundation.org/hedy-lamarr/>.
- [10] IEEE Standards Association, "Actress/Inventor Hedy Lamarr – and How Far Wireless Communication Has Come," Beyond Standards (IEEE SA blog). [Online]. Available: <https://standards.ieee.org/beyond-standards/hedy-lamarr/>.
- [11] National Museum of Australia, "Veena Sahajwalla," 2022 Australian of the Year exhibition, National Museum of Australia, Canberra. [Online]. Available: <https://www.nma.gov.au/exhibitions/2022-australian-of-the-year/veena-sahajwalla>.
- [12] UNSW Newsroom, "From trash to treasure: recycling facility launched to give e-waste a new life," University of New South Wales, Sydney, 23 Mar. 2025. [Online]. Available: <https://www.unsw.edu.au/newsroom/news/2025/03/world-first-UNSW-designed-recycling-facility-launch>.
- [13] NASA, "Vanessa E. Wyche," NASA People, National Aeronautics and Space Administration, Washington, DC. [Online]. Available: <https://www.nasa.gov/people/vanessa-e-wyche>.
- [14] Encyclopedia Britannica, "Katalin Karikó," Britannica, [Online]. Available: <https://www.britannica.com/biography/Katalin-Kariko>.
- [15] National Inventors Hall of Fame, "Katalin Karikó – Modified mRNA Technology Used in COVID-19 Vaccines," National Inventors Hall of Fame® (United States Patent and Trademark Office), 2023. [Online]. Available: <https://www.invent.org/inductees/katalin-kariko>.
- [16] Medical University of Vienna, "Nobel Prize winner Katalin Karikó visits Vienna," News in May 2025, Medical University of Vienna, Vienna, 19 May 2025. [Online]. Available: <https://www.meduniwien.ac.at/web/en/uber-uns/news/2025/news-in-may-2025/nobel-prize-winner-katalin-kariko-visits-vienna/>.

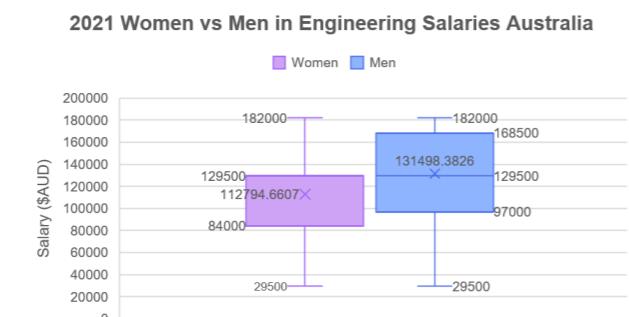
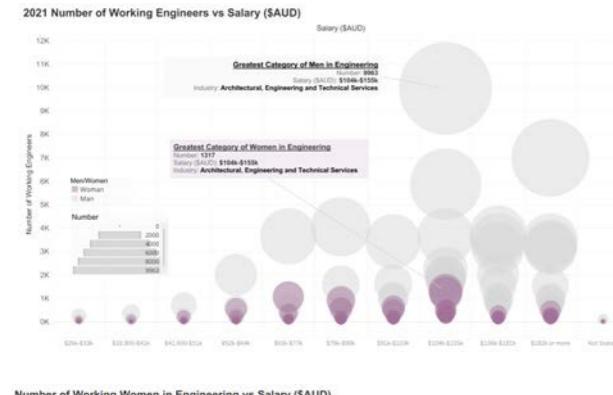
Equal Pay: The Missing Pieces Of The Equation

By Kelly Li

Behind every engineering project, be that a bridge we drive over everyday, a medical implant that saves someone's life or the clean energy that fuels our homes, there have always been women engineers. With a diverse and creative team, contributions made from women have always been there, electrifying innovation and expanding past the hurdles that they have to face. However, despite the effort that women put towards this field, when being faced with the data, the money speaks a different sort of story.

While I'm sure most women don't come into this profession solely because of the paycheck, it is important to discuss what potential prospects that this industry holds for women specifically. Which is why when the numbers are shown, the gender pay gap within engineering may be one of its biggest problems. According to Professionals Australia, women engineers in Australia on average for every \$1 a man makes, make 89c. When Australia's demand for engineers continues to rise, but half the population is held back in terms of their potential, it is only Australia that suffers in the long run.

Looking at the data provided by Engineers Australia for the 2021 year I've compiled several different graphs that aim to highlight this effect, illustrating what different types of industries earn the most and the overall statistics behind the salaries of engineers in Australia.



Data has been changed from ranges into averages

**The value 182000 within the data is stated to be 182000+ however for the sake of the plot has been converted to 182000 for analysis purposes

So what can we get out of this? It is clear that the engineering industry must do more than acknowledge the problem but enact tangible solutions within this space. Closing this gap ensures that women engineers are valued for their contributions towards the industry as well as reinforcing the diversity required for this sector, enhancing the profession as a whole. With engineering being all about solving problems and advancing innovation, it's time that the industry solves one of its own, looking towards a future where not only the numbers of women increase but are paid equally for the wisdom that they bring.

Reference

The engineering profession: a statistical overview, 15th edition: <https://www.engineersaustralia.org.au/publications/engineering-profession-statistical-overview-15th-edition>

Professionals Australia: Women in Engineering: Realising Productivity and Innovation through Diversity: <https://www.agec.org.au/wp-content/uploads/2018/09/Women-in-Engineering-Realising-Productivity-and-Innovation-Through-Diversity-2017.pdf>



Why We Need More Women In Engineering: Stories That Say It All

By Lakshmi Meena Palaniappan

Here's a little activity before we dive in. Close your eyes and think of an engineer. What's the first image that pops up? Maybe a man with glasses, hunched over a computer, wearing office formals, you know, the stereotypical "nerdy" type. Or maybe it was just... a man in general?

If so, that's totally okay, because that's what the majority of engineering still looks like today. From my own experience, when I walk into a class of 40 students, only 4-5 of us are girls. Some days, I've even been the only girl in the room. And that imbalance isn't just about numbers. It shapes the way technology is designed, tested, and imagined. History is full of examples that show what happens when women aren't included in engineering decisions.

non-essential ones. Her 'priority display' system let the computer shed unnecessary work and focus on what mattered most: landing safely. Because of her foresight, Neil Armstrong and Buzz Aldrin made it to the surface of the moon.

Hamilton later wrote that the computer was smart enough to recognize it was being asked to do too much, and to save itself. If her code hadn't been there, the story of Apollo 11 might have ended very differently.

Conclusion

The lesson from the above stories is pretty clear: engineering without women is incomplete. And the data backs it up. Just 18% of students starting engineering degrees are women, compared to 56% across all subjects. Even though girls perform just as well in maths and science at school, their numbers drop drastically at A-levels and in higher education. By the time we get to fields like mechanical or aerospace engineering, women shrink to barely 12-14% of undergraduates. This isn't because girls aren't capable, it's because they've been told, subtly (and not so subtly), that these fields aren't for them. The visualization even shows that while half of girls take physics and maths at GCSE, only 23% stay on in physics at A-level. Somewhere between age 16 and university, we're losing brilliant engineers before they even get the chance to step into a lab, a workshop, or a mission control room. Every percentage point tells us where to push back. More role models. More visible stories. More classrooms where a girl isn't the only one. Because when women do make it through, they don't just add diversity for diversity's sake, they literally reshape the world. Engineering needs women not just to even the numbers, but because the problems we face demand every perspective. Until the day comes when imagining an engineer doesn't automatically mean picturing a man, we still have work to do.

The Story of Sally Ride

Sally Kristen Ride was a physicist, astronaut, and the first American woman in space. Before her mission in 1983, she faced questions at a NASA press conference like: "Will the flight affect your reproductive organs?" and "Do you weep when things go wrong on the job?"

As if that wasn't bad enough, engineers asked her to help develop a "space makeup kit", assuming that's what a woman would want on board. They even suggested sending her with 100 tampons for a six day mission. Sally Ride then had to explain that no woman on Earth would need 100 tampons for a week.

It's funny in hindsight, but also deeply revealing. These weren't dumb people, they were brilliant engineers. They just didn't have women in the room when designing FOR women.

When Safety Forgot About Women

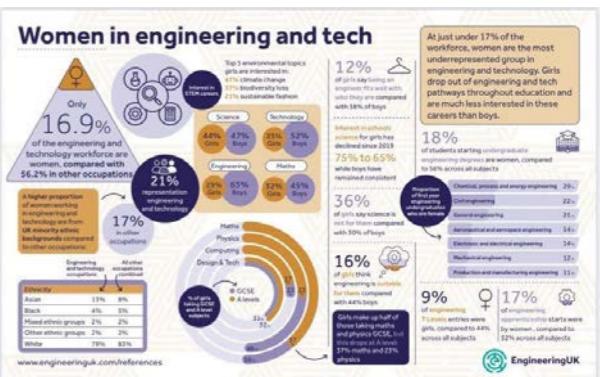
It's not just space travel. In car safety testing, the first crash dummies were built to represent the average male body. Women had different muscle distribution, different average heights and weights, but none of that was considered.

By the 1970s, the female dummy that was introduced was basically just a scaled-down male version, not an actual reflection of women's anatomy. Unsurprisingly, women were (and still are) far more likely to be injured in car crashes. Again, it wasn't malice: just the consequence of engineering teams that didn't reflect the diversity of the people they were supposed to protect.

The Software That Saved Apollo 11

Another name worth knowing is Margaret Hamilton, who led the team that developed the Apollo 11 guidance software. During the moon landing, just minutes before touchdown, the onboard computer became overloaded and started throwing out alarms.

Most missions would have been aborted right then and there. But Hamilton had designed the software to prioritize critical tasks over



Reference

[1] "Research | Women in engineering infographic dashboard," Engineeringuk.com, 2024. <https://www.engineeringuk.com/research-and-insights/our-research-and-evaluation-reports/women-in-engineering-and-tech-infographic-dashboard/>

Stellar Perspectives How Female Voices Illuminate Inclusive Design:

How Male-Centred Design Fails Half the Population

By Lily Wheeler

Have you ever noticed that certain spaces, products, or technologies just don't seem to be designed with women in mind? Whether this is sitting in an air conditioned room designed around male metabolic rates; failing to reach the tram's overhead handrails; or driving a car with seat belts and airbags optimised for male anatomy, engineering has long operated within a male-dominated orbit.

This isn't just an inconvenience and poor user experience - it's a safety hazard and a missed opportunity. When designs assume the 'average user' is male, women end up disadvantaged, excluded, and in some cases, endangered. Car safety testing illustrates the problem with crash test dummies modelled on the "average male," leaving women 47% more likely to be seriously injured in a crash [1]. A similar bias exists in occupational health, where research into work-related cancers remains poorly understood due to a lack of data on women's bodies, jobs, and exposures [2]. Women's smaller size, thinner skin, and higher body fat alter how chemicals are absorbed, yet safety standards still assume that "what is safe for men is safe for everyone".

These blind spots don't just compromise usability, accessibility, and fairness - they also overlook a massive economic opportunity. Regarding funding for women's health research, it has been suggested that a \$300 million investment into female health could generate around \$13 billion for the global economy. Further, in wealthier societies, women influence 70–80% of all consumer-purchasing decisions [3].

When half the population is sidelined in design, the result isn't just bad engineering - it's bad business. Simply put, when women aren't at the table, every solution starts with a blind spot.

When Women Design for Women

Encouragingly, society is already moving beyond a world where women adapt to male-oriented designs and towards one where technology adapts to everyone. Across engineering disciplines, women are driving innovations that address historically overlooked needs.

Through purposeful, gender-informed approaches to urban planning and civil engineering, women are reshaping the future of infrastructure and the built environment. Kalpana Viswanath, co-founder of Safetipin [4], has leveraged crowdsourced geolocation data to conduct gender-inclusive safety audits across more than 77 cities worldwide. This has led to improved street lighting, open sight lines, bridge and underpass visibility, and safer access points in public buildings - transforming spaces to be more inclusive and equitable for women and girls.

Further, software engineers behind I'm Safe, a women's personal safety app, aim to leverage technology to reduce gendered violence in public spaces [5]. The app allows users to send an SOS, share their location, record events silently, trigger a fake call and connect directly with women's safety NGOs.

Additionally, the FemTech sector has seen rapid growth, with the global market expected to reach \$16.4 billion by 2031 [6]. Research is currently well supported in Australia, with the government announcing a \$354 million investment over four years targeting women's health, including cervical and breast cancer, endometriosis, and reproductive health [7].

In biomedical engineering, researchers at Northwestern University and Rice University have developed wearable devices that accurately monitor breast milk intake during breastfeeding, offering clinicians and mothers real-time, clinical-grade data to improve maternity care [8].

Similarly, chemical engineers are pioneering sustainable menstrual hygiene products, such as Stanford's open-source process that converts plant fibres into absorbent materials for affordable, eco-friendly pads [9]. Startups like Sequel, founded by female engineers, have even introduced the first major tampon redesign in 80 years—creating a spiral-shaped, bio-based tampon designed to reduce leaks [10].

Further, mechanical engineers are developing at-home health monitoring tools to improve early detection and screening for women. Dotplot, a breast health device, pairs a handheld scanner with a Bluetooth app to guide personalised self-checks and detect tissue abnormalities [11], while Papcup, a non-invasive cervical screening device, allows menstrual blood samples to be collected at home and sent to a lab for analysis, providing a more accessible alternative to traditional Pap smears [12].

These innovations are not only life-enhancing; they are lifesaving.



Why Gender Diversity Powers Better Engineering

Solutions are embedded in female experience. Women and girls face disproportionate impacts from climate change [3], gender-based violence, financial volatility, health inequities, and underrepresentation in policy setting and decision making. However, the lived experiences of women can be leveraged. By bringing female perspectives into engineering, innovation can directly address these disparities - whether through safer infrastructure, more inclusive technology, or climate-resilient solutions tailored to vulnerable communities.

In healthcare, research has shown that male innovators tend to focus on male-specific health issues, whereas women-led teams are more likely to address both male and female health needs [13]. Further, in the workforce, gender-diverse firms tend to have better environmental reporting and climate governance than their peers, making greater investment in renewable power generation and energy efficiency [14].

Therefore, women-led engineering not only responds to immediate needs but also designs spaces, machines, and technologies that work for everyone, embedding equity into everyday interactions.

Designing the Future Together

Engineering without diverse perspectives limits innovation. It reinforces systemic bias - creating solutions that overlook the needs of women, marginalised communities and the natural environment.

When women contribute their perspectives, the outcome isn't just better engineering - it's inclusive, future-ready solutions that serve everyone. This isn't about replacing men; it's about broadening the lens so that engineering reflects the diversity of the world it shapes.

The future can be brighter - brilliant, even stellar - if we commit to building a universe where every perspective counts.

References

- [1] D. Bose, M. Seguin-Gomez, and J. R. Crandall, "Vulnerability of female drivers involved in motor vehicle crashes," *American Journal of Public Health*, vol. 101, no. 12, pp. 2368-73, Dec., 2011, doi: <https://doi.org/10.2105/AJPH.2011.300275>.
- [2] C. Andrzejewski, "The 'invisible' risks facing working women in France." *La Monde Diplomatique*. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.equaltimes.org/the-invisible-risks-facing-working>.
- [3] "Why women are key to climate action." UN Climate Action. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.un.org/en/climatechange/science/climate-issues/women>.
- [4] "Our Team." Safetipin. Accessed: Aug. 29, 2025. [Online]. Available: <https://safetipin.com/our-team>.
- [5] "Our Mission." I'm Safe. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.imsafe.app/about>.
- [6] "Femtech in Australia Trends and Forecast." Lucintel. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.lucintel.com/femtech-market-in-australia.aspx>.
- [7] "\$354 million to support the health and wellbeing of Australia's women." Department of Health. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.health.gov.au/ministers/the-hon-greg-hunt/mp/media/354-million-to-support-the-health-and-wellbeing-of-australias-women>.
- [8] J. Kim, S. Oh, R. Avila, et al, "A compact, wireless system for continuous monitoring of breast milk expressed during breastfeeding," *Nat. Biomed. Eng.*, May., 2025, doi: <https://doi.org/10.1038/s41551-025-01393-w>.
- [9] A. Molina, A. Kothari, A. Odundo, and M. Prakash, "Agave sisalana: towards distributed manufacturing of absorbent media for menstrual pads in semi-arid regions," *Commun Eng.*, vol. 2, no. 81, Nov., 2023, doi: <https://doi.org/10.1038/s44172-023-00130-y>.
- [10] "About." Sequel. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.trysequel.com/about>.
- [11] J. Flagg, "Smart engineering enables at-home breast cancer checks with mobile app." Institution of Mechanical Engineers. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.imeche.org/news/news-article/smart-engineering-enables-at-home-breast-cancer-checks-with-mobile-app>.
- [12] "About Us." Papcup. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.papcup.co.uk/>.
- [13] E. Kemble, L. Pérez, V. Sartori, G. Tolub, and A. Zheng, "The dawn of the FemTech revolution." McKinsey & Company. Accessed: Aug. 29, 2025. [Online]. Available: <https://www.mckinsey.com/industries/healthcare/our-insights/the-dawn-of-the-femtech-revolution#>.
- [14] M. Mansour, M. Al Zobi, D. Allah E'leimat, S. Abu Alim, and M. I. Tabash, "Female leadership, gender boards and environmental innovation: Comprehensive evidence from the global energy sector," *Innovation and Green Dev.*, vol. 4, no. 4, Aug., 2025, doi: <https://doi.org/10.1016/j.igd.2025.100275>.

Breaking Societal Norms Is The New Norm

By Jena Khatri

Supernova, a cataclysmic explosion to mark the end of a star's life, an event that can outshine an entire galaxy. Disseminating its elements into space, it allows for new stars and planet formation. It is destruction and rebirth.

Of course this has been a fascinating concept in the fields of astronomy, intriguing many scientists and, we humans, are also made of the same fundamental particles that constitutes the stars and the universe, so with no doubt, we have witnessed moments that shattered the norm and lit the way for new truths.

In an era where geocentrism, a belief where everything revolved around the earth, was accepted as the undeniable truth, Nicolaus Copernicus came in and dared to propose the idea of Heliocentrism, where planets revolved around the sun. Years later, Galileo Galilei, while observing the night sky with his telescope, saw the 4 largest moons of Jupiter, giving evidence that earth is not the center of everything and he openly supported the theory of Heliocentrism. For this, Galileo faced punishment from his society. Fast forward to 2025, all space exploration has been thriving on the ideas put forward by Copernicus and Galilei.

This tiny piece of story shows how societal beliefs that were once so firm and widely accepted are not necessarily the absolute truth.

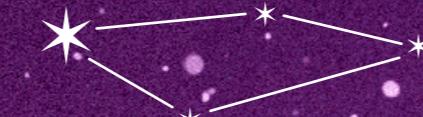
Women Engineers, whether past, present or future, have been no exception to harsh societal norms. Especially women from smaller nations and underrepresented identities where limits are given to their limitless potential.

"Engineering is not for women; it's too technical, too difficult." While it is no secret that for long, engineering has been a male dominated field. This is further encouraged by early gender stereotypes imposed on children with gendered toys: "dolls for girls while lego and cars for boys". According to a report by "The Educator Australia" in 2021, there is a 50% decline in girls studying STEM beyond school. The main reason was that they were pressured to choose a career considered more acceptable as a woman. As a girl from a very beautiful yet small nation studying engineering herself, the ratio of girls to boys in high school subjects like applied technology and home economics very well depicted the gender gap.

But of course we had Legends to break the barriers

Dr Aprille Ericsson was the first American woman to earn the PhD in mechanical engineering at NASA Goddard Space Flight Center, overcoming both racial and gender barriers in aerospace.

Lynn Conway, a computer scientist and electrical engineer, was key in pioneering the foundation of modern microchips. However, after coming out as a trans woman, she had lost her job



at IBM. This did not break her, but she rather broke the barriers and rebuilt her career, laid the foundation of modern computer processors and till date is known as one of the celebrated transgender activists.

These powerful women were indeed the Supernova of our societies, breaking old limits and paving way for the new and they were two of the many motivational women who dared against societal norms.

Every barrier broken creates new space for the next generation. Now a young girl in Fiji who sees a woman engineer succeed can begin to imagine herself in that light. Supernovas are rare, but their light travels far — inspiring, guiding, and reshaping galaxies. Likewise, women in engineering are not only breaking taboos; they are proving that diversity and inclusion are the very forces that will shape the future of technology, science, and humanity itself.

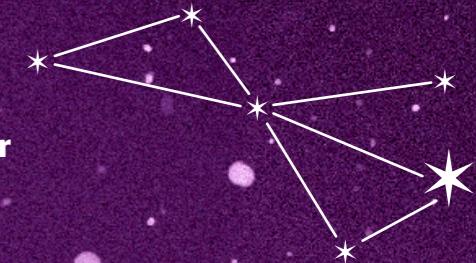
Not every norm is to be preserved, let's make it a norm to break those norms.



Why Pink? Houston, We Have a Fashion Statement

Mietta Livingston
Pink Rover Initiative Chair at Monash Nova Rover

By Jessica Hu



Breaking stereotypes and sparking bold conversations about identity, bias, and belonging in engineering — an interview with Mietta Livingston, the Pink Rover Initiative chair at Monash Nova Rover.

Could you begin by telling us about the Pink Rover Initiative at Monash Nova Rover—what it represents and why it was created?

Pink Rover started in 2023 with the aim of sparking conversations about women in STEM with a hot pink rover. Over time, this led to broader and more nuanced conversations about identity in STEM spaces, hence our updated messaging - 'sparking conversations about self-expression in STEM'. The concept works so well because people have such a strong reaction to it; I've been asked countless times 'why pink?' by people I know, by people we meet at competitions, and even by strangers walking past the team at field tests. The idea is that the visual symbol prompts conversations about these reactions, and the unconscious bias that can lead to the conclusion that robotics and the colour pink can't coexist. With our rover, we show that they can.

In terms of challenging stereotypes in STEM, what barriers have you personally experienced, and how has Pink Rover worked to address those for the next generation?

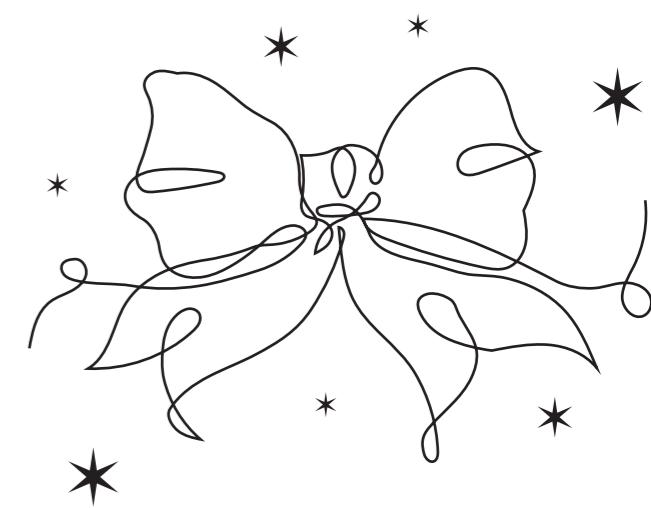
I'm personally in an engineering specialisation with a particularly low percentage of women, and this can definitely be hard. There have been many times when I've felt out of place, which has then affected my confidence. Pretty early in my degree I heard about Nova's Pink Rover, and I thought it was a great idea. I think this counter-stereotype approach really does break down barriers around what's expected in this field, which is why it resonates with me and hopefully creates a more inclusive environment for the next generation. We also have kids getting exposed to these ideas in Nova's outreach programs, as our pink rover is featured as the culmination of our work.

If we look ahead 5 years, what legacy would you like Pink Rover to leave at Monash and beyond?

Hopefully in 5 years the rover is still pink — that would be cool! At the very least, even if the colour changes, I'd like to think that the culture of inclusion within Nova and the wider community would

live on and even keep improving over time. I'd like to hope that it keeps prompting people to talk about and challenge unconscious bias — these conversations are really important for creating an inclusive culture for those who are underrepresented in STEM. Most of all, if Pink Rover leaves a legacy of students feeling more comfortable and included in the engineering community, then it will have done something truly meaningful.

Talking to Mietta has been a truly insightful experience. The pink rover is the Elle Woods in engineering, standing out as a bold statement on its own. A statement of diversity, inclusivity, and so much beauty in engineering. It's very special to see how student advocacy can impact the future landscape of engineering, especially in a university setting, where aspiring future engineers are made. The rover creates a 'supernova' in space engineering with a splash of hot pink!



Igniting Bright Minds: Engineering Education For the Future



Dr Joanne Tanner

By Ava Kernich

What is your current position?

I have been an academic at Monash for about 10 years, but in various roles. I have been in my current role, as a senior lecturer for approximately a month and before that I was a senior teaching fellow. Prior to that role, I worked as a teaching and research academic at a lecturer level. As part of my job, I teach first year, third year and fourth year engineering units, in addition to a design unit at the master's level. I also conduct both technical and education research.

What is it like teaching a first-year engineering unit?

It's really interesting having a first-year class, with brand new 'baby' engineers. Coming in from high school, students have been taught a certain way, and we have to 'un-teach' some of that knowledge and 're-teach' the way that learning works, including the independence required to learn at a tertiary level. This translates into lifelong learning, as engineers go out into industry and continue to learn for the rest of their lives. Across all levels of engineering units, I enjoy watching students have light bulb moments, where they finally connect theories and concepts that they have learnt across all of their units, and understand what it means to be a specialised engineer.

Part of your research lies in experiential learning. What does this mean, and what does it look like at a tertiary level?

Traditional learning is sitting in a classroom or lecture theatre and listening to an academic or watching a video that explains concepts to us. This is a formalised way of learning, and many students struggle to effectively learn this way. In comparison, experiential learning is essentially learning by doing. Particularly, there is an emphasis on learning by doing something incorrectly and being forced to problem solve and work out why it went wrong, ideally by connecting theoretical learning to practical applications. I think it helps people have a holistic view of concepts and of learning as well. This style also recognises the importance of non-technical engineering skills – including systems thinking, problem solving and communication skills. Currently, Monash uses our on-campus water treatment pilot plant (a small-scale version of a real industrial process) to teach students in this manner. Scaffolded across all year levels, it helps budding engineers see how core engineering concepts such as thermodynamics, heat and mass transfer, and mass and energy



balances work in a complex system. Using the pilot plant, we can connect our classroom teaching to the real world and provide students with an authentic understanding of what engineering looks like in practice.

Unfortunately, with the current Monash cohort sizes, we can't integrate this type of learning into every unit. That said, I hope we can get to a point where the university has more authentic experiences available to students, to give them more opportunities for experiential learning and therefore a better understanding of the environment and equipment they will work with in the future.

A growing part of the world is generative artificial intelligence (Gen AI). Do you find Gen AI to be a friend, a foe, or a bit of both?

If we go back and look throughout history, we have been using artificial intelligence (depending on your definition for it) for several decades. So, it isn't something entirely new. However, it is now easily and cheaply (depending on your definition!) accessible to the general public, which can be the dangerous part of it. Now, this doesn't mean that it is not a useful tool and that everyone in the world can't benefit from it. My take on it is that we just must be very careful in terms of how we personally use it. Contrary to popular belief, it isn't just a quick and easy way to do something. Instead, we need to ask the question – should we do something that way in the first place? Are there any ethical or moral responsibilities that need to be considered before we consult with Gen AI? I tell my first-year students to consider the Maslow's Hammer Law: Gen AI isn't a hammer and not everything is a nail. Essentially, just because you have it does not mean that you have to use it for everything and anything. The user needs to be in control, and be able to validate the GenAI outputs. In essence, I think that we have a long way to go in terms of education of what Gen AI really is, how to utilise it and what responsibilities we have to accept as a GenAI user. It can be a huge benefit – I use it all the time, but it's dangerous that it is so freely and widely available and yet poorly understood.

Finally, what advice do you have for current and prospective engineering students? Both in terms of their studies and when they are looking to integrate into the workforce and industry.

My advice to students who are going into industry would be to try as many different things as possible. Don't limit yourself to applying to one company or one industry or one role. It doesn't matter if you are not working in a Fortune 500 company straight away; the experience gained from working in a small company, or a start up makes for a well-rounded engineer. That is not to say that working for a big company straight away is a bad thing, but many excellent engineers that I know have worked in different roles and managed various levels of responsibility. This makes them the most flexible and adaptive engineers, who are also empathetic, and can understand the perspectives of others. Any experience, especially early in your career, is good experience. In a similar way, volunteering for things at university – events, teams, clubs – goes a long way towards developing yourself as a professional. People remember and recognise enthusiasm and will come to you with more opportunities.

A final word of advice is utilising an 'elevator pitch'. Essentially, this technique helps to pitch yourself to others, at networking events, in classes, and in a workplace. In short, an elevator pitch is a prepared 'blurb' about yourself that you have rehearsed, that can help you accurately advertise yourself with a professional flare.



Charting New Orbits In Science, Safety And Global Experience

Carmel Ghani
Junior EH&S Consultant, Lisam Consulting

By Reem El Machtoub



Carmel graduated with a Bachelor of Technology from the University of Technology and Applied Sciences in Oman. Currently, she works as a Junior EH&S Consultant at Lisam Consulting – which is in partnership with the Monash Innovation Labs. She is also pursuing a Master of Professional Engineering, specialising in Chemical Engineering at Monash University. She has gained experience undertaking internships across cultures – Schlumberger in Oman, and Woodside Energy in Perth, Australia. Carmel's journey shows what it takes to thrive as an engineer today by embracing new experiences and proving that the future belongs to those who blend technical skill with global perspective.

What inspired you to pursue a career in engineering?

I never thought about engineering because when I was in high school, my brother was doing civil engineering. Back then, engineering was just about construction to me—designing roads, buildings, dams. Then during the last year of high school, there was a career fair where they introduced us to different engineering specialisations. I remember one of the representatives there who told us that chemical engineers are known as “universal engineers”. They can work in all sorts of industries using a combination of science and technology, as well as education. That really captivated me. The idea that chemical engineers are universal engineers—it was a game changer for me.

If you could go back and give advice to yourself as a first-year undergrad, what would that be?

It would be: try everything. Because nowadays, with technology and the fast-paced world we're living in, it's important to understand what you really want to do. We have a lot of new areas and specialisations that never used to exist in the past such as the AI field that is rapidly advancing. So it's very important to try. Once you try, you really start to understand what you really want to do.

How well do you feel your university education prepared you for the demands and expectations of the industry? Were there any areas where you felt under-prepared?

I think during my undergrad, it was a bit of a challenge because COVID came around. For a couple of years, we just had online lectures—no hands-on experience. That's when I realised that just having a degree is not enough. I needed real hands-on experience,

through workshops, labs, and experiments. So, I decided to pursue a master's degree. When I came to Monash, I understood that the program gave me more exposure to industry, and the workshops and lab experiments prepared me better.

Having studied and worked in both Oman and Australia, how has working across cultures shaped your perspective as an engineer?

The working environment is different in terms of culture and norms, but if you dive into the details, the engineering work is pretty much the same. What differs is communication style, formality, and expectations. In Australia, people are really friendly. In Oman, it was more formal. Another difference is that in Oman, they would give interns a very detailed plan. It was structured and organised. In Australia, I noticed it's more self-directed—you're given an idea of the project, and you figure it out yourself. I liked the detailed approach, but I'd prefer a mix: a detailed plan with room for interns to add their own insights or approaches.

You've completed a couple of internships previously. Looking back, how do you feel each shaped your career path differently?

When I graduated, I thought engineering was all about hands-on field work. So, my first internships in Oman were lots of lab experiments and site visits—direct exposure. Then I came to Australia and did an office-based internship. At first, I thought it would be boring. But I realised office roles could be exciting too, depending on the project and the team. I learned new skills there, especially communication and collaboration.

How do you deal with self-doubt or pressure, especially in new environments like internships abroad?

I think as interns or junior engineers, a lot of the pressure comes from ourselves—not from outside expectations. We set high expectations for ourselves. But it's important to step back, remember that this is just an experience, and to take care of your wellbeing. Organisations don't expect interns to be experts, so that pressure is self-made.

What motivated you to move into a consulting role, and how does it connect with your background in chemical engineering?

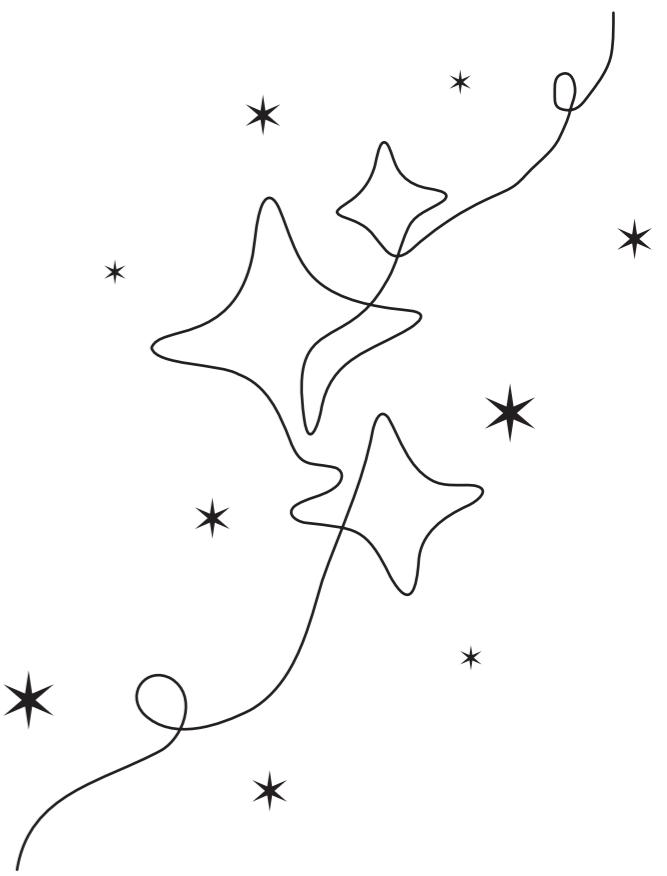
Currently, I'm working with Lisam Australia, drafting safety data sheets for chemicals. That relates to chemistry, chemical engineering, and health and safety. Health and safety was one of the most important parts of my degree. I wanted to understand how safety data sheets are created, what controlling measures are used, how risks are classified. That's what motivated me.

As a woman in a male-dominated field, have you ever noticed or faced bias, and if so, how have you navigated those situations?

Not really, to be honest. Even in Oman, when I was the only woman on site visits, people treated me well and made sure I learned as much as I could. Nowadays, industries are pushing towards gender balance anyway. Maybe I never gave gender much importance—I just focused on the project and building good professional connections. What others think is out of my control.

What advice would you give to current engineering students about to start their first internship or graduate into industry?

Don't overwhelm yourself. You're there to learn, not to prove everything. Make as many connections as you can, communicate, and observe how others solve problems. Remember, what you learn at university is different from industry. In industry, you're given a project, and you must figure it out, usually in a team. Watch and learn from others. And most importantly, choose a job you love. If one thing doesn't work, there are many opportunities out there. Don't stress—treat it like an experience to enjoy.



Listening for Change



Dr. Julie Dao

By Dheekshanya T.A

When Dr. Julie Dao talks about heart disease, she doesn't open with algorithms or hardware. She starts with a gap, the chasm between detecting illness and actually getting people treated. "What happens after you screen and you diagnose these people?" she asks. "How do you effectively get people the treatment that they need? Because we're only part of the story."

It's a revealing first principle from a founder who sees prevention not as a slogan but as design criteria. "Prevention is essentially better than curing," she says, a line that threads through her research career, her startup work, and the communities she aims to serve.

A disease you can hear

Julie's current focus is rheumatic heart disease (RHD), a condition that largely disappeared from wealthy cities but persists in remote and underserved communities. "Rheumatic heart disease is a disease caused by strep. It's been completely eradicated in western nations," she notes. You won't see much of it in metropolitan hospitals, but you will in Aboriginal and Torres Strait Islander communities, in parts of sub-Saharan Africa, and in some rural regions of New Zealand.

Her motivation is personal and practical. "I came from Vietnam, my parents and our family live very rurally." After growing up in Australia, she recognized "parallels between what I've seen in Vietnam and what is happening here in our Indigenous community." That sense of parallel lives pushed her toward solutions that work in the real world, places without easy access to specialists or high-end imaging.

Enter the core insight: "Rheumatic heart disease is a disease you can hear. Can we hear the disease before we can even see it?" Her team's device listens for minute changes in blood flow, the faint murmurs that precede visible damage on echocardiography. "In the really early instances of the disease you can hear it though it's just really hard to hear," she explains. The goal is to detect that whisper early, when a simple intervention can change a life's trajectory.

The power of prevention

RHD is the kind of problem that exposes both the promise of technology and its limits. Dao is frank about that. Detection alone doesn't save lives; systems do. "If we pick up the disease super early and then partner with existing organizations that have the treatment, then these people get the treatment that they need," she says. "Everyone has the chance and should have the chance to live a healthy, productive life whether you're here or in Vietnam or wherever you're from."

The treatment itself is not exotic: penicillin. "You give patients penicillin injections. These injections are really cheap, it can cost \$5 for a round." Caught early, penicillin prevents disease progression; in her words, "only a small percentage of people who get the penicillin injection actually develop the disease." The challenge is making that early catch routine in clinics where doctors are rushed, equipment is limited, and a child sent home "fine" may return sicker, again and again.

Designing with community

Dao's approach is deeply collaborative. A feature she once discarded, showing patients their own heart waveform is now back on the roadmap because communities asked for it. "They said it'd be good for us to understand what it looks like as it's their knowledge and their own body sounds," she says. Earlier she "killed it" as a mission-creep but later brought it back by co-designing with her target audience.

That responsiveness extends to constraints: low-fidelity computers, pairing with existing devices like echocardiograms, and stripping out features that don't pull their weight. "We had an ECG in our device, but with our recent device, we've removed the ECG components because we think our algorithm is powerful enough" to time heart sounds without it. It's the disciplined, boring work of real product-market fit, in places where the "market" is a clinic laptop that's seen better days.



Soft skills that aren't soft

Dao credits much of her progress to abilities engineers sometimes undervalue. "Understanding how to read literature and what it actually means" is a superpower, she says, seeing the through-line in research, critiquing methods, extracting what works. Equally critical is translation. "The ability to speak really technical terms in a way that's layman so everyone can understand. Clinicians don't need to know all the technical specs. They just want to see how it works, what do you need, and how can they help with the next steps?"

And then there's the muscle that opens unexpected doors: "Networking really early on," she advises, laughing about the many cold messages that went unanswered until some didn't. Curiosity and resilience compound. "Out of 50 people I'll message, at least a third will want to sit and have a chat with me."

A different kind of capitalism

For students wrestling with impact versus scale, the moral calculus of building for smaller, underserved populations, Dao offers nuance and resolve. She's been thinking about "empathetic capitalism": designing low-cost tools that deliver outsized benefit in places incumbents overlook. The venture math can be unforgiving. "Venture capitalists don't care about impact because the market's too small," she says plainly. But she points to examples of affordable, world-changing devices and insists it's possible even if "it's going to take a lot longer" and sometimes requires subsidizing impact work with more lucrative lines.

She's wrestled with the strategy herself by starting with broader valvular disease to satisfy investors, then "use that money to support the work of rheumatic heart disease." But urgency tugs. "You talk to people who have rheumatic heart disease and you sense the urgency and then you're pushed back to your moral compass."

How she hires (and how to get hired)

There's no mysterious gate at Dao's startup, just people, culture and a mission. "I just do a vibe check. I chuck them in a room with people I really like and see how they adapt," she says. Her team is diverse, including neurodivergent colleagues, and respect is non-negotiable. The process is informal by design: "Usually they come to the office, work with the team for a day or two, and then we give them a task based on what they want to learn and how it can contribute."

For more formal interviews, like the internship program she helps run at the Monash Institute of Medical Engineering (MIME), the advice is straightforward: know your "why," know the organization, and be ready to discuss "biomedical innovations you're particularly inspired by," conflict resolution, and your concrete contributions to past projects. Don't hide behind group work: "Articulate what your role was... and how the project went as a result of your work."

In the end, Dao's ambition is deceptively simple:

Listen earlier, act sooner and ensure the system catches people when they fall.

The technology is clever. The ethos is clearer. "Everyone should have the chance to live a healthy, productive life," she reminds us. The rest is engineering, of devices, of partnerships, and of a pathway from detection to care.





Acknowledgements

Special Thanks To...

Thank you to all our sponsors who helped make this Industry Guide possible:



Content Contributors and Editors:



Kelly Li
President



Sanika Ghanekar
Vice President



Bhavya Pathak
Secretary



Claire Zhang
Treasurer



Elise Vayenas
Assistant Treasurer



Clare Ahn
Marketing Director



Yesha Tesoro
Events Director



Lakshmi Palaniappan
Academic/Wellbeing
Director



Fiona Kim
Marketing Officer



Jena Khatri
Events Officer



Nur Azmina
Events Officer



Arushi Gupta
Outreach Officer



Cleopatra Dhliliwayo
Outreach Officer



Hemali Katiyar
General Representative



Lily Wheeler
2nd Year Representative



Stefani Rijab
2nd Year Representative



Ava Kernich
1st Year Representative



Jessica Hu
1st Year Representative



Dheekshanya T.A
Industry Director



Reem El Machtoub
Assistant Industry Director



Imogene Jones
Industry Officer



Honey Mutuel
Industry Officer



Kenuli Wijegunaratne
General Representative



Nadya Basterfield-Cereceda
Graphic Designer

GET IN TOUCH

✉ wem@monashclubs.org

⌚ @wem_monash

פייסבוק www.facebook.com/WEM.monash

لينكدين linkdin.com/company/womeninengatmonash