

***ENGINEERS
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Engineers Insight Editorial Board



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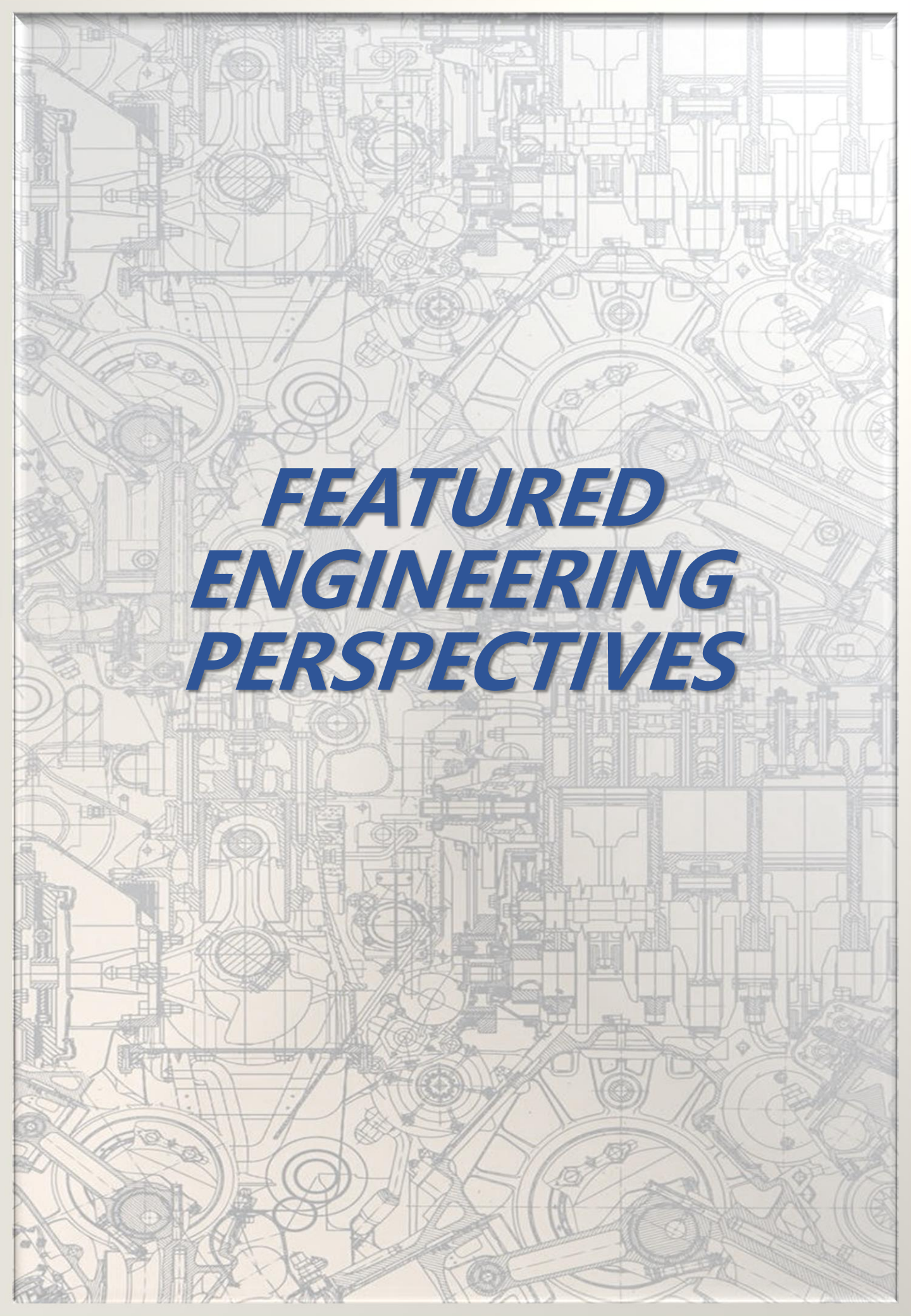
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The background of the entire page is a detailed, light-colored technical drawing of an internal combustion engine block. It shows various components like cylinders, valves, and internal mechanisms in a cross-sectional or exploded view style. The drawing is rendered in a light blue or grey tone, creating a complex, textured background.

FEATURED ENGINEERING PERSPECTIVES

Autonomous Mobile Robots and Drones: Shaping the Future of Mechatronics Engineering

by

Ts. Dr. Arun Seeralan

"The future of mechatronics lies not only in designing machines, but in creating intelligent systems that can perceive, analyse, and make decisions in real time."

The Rise of Intelligent Autonomous Systems

Autonomous Mobile Robots (AMRs) and drones are rapidly transforming industries around the world and are among the most exciting developments in modern mechatronics engineering.

Unlike traditional industrial robots that operate in fixed and controlled environments, AMRs and drones are designed to move independently through dynamic and often unpredictable surroundings.

Whether navigating a busy warehouse, inspecting remote infrastructure, monitoring agricultural fields, or supporting disaster response operations, these intelligent systems must continuously perceive their environment, analyse data, and make decisions in real time.

This capability is made possible through the integration of mechanical design, electronics, control systems, sensors, artificial intelligence (AI), and advanced communication technologies, all of which form the foundation of mechatronics engineering.

Edge AI: Enabling Smarter and Faster Decisions

One of the key technological advancements driving the growth of autonomous systems is Edge Artificial Intelligence (Edge AI). Unlike conventional systems that rely heavily on cloud computing, Edge AI allows data processing and decision-making to occur directly on the robot or drone itself.

Powered by compact yet powerful computing platforms such as NVIDIA Jetson and similar embedded processors, modern autonomous systems can perform tasks such as object detection, obstacle avoidance, navigation, and environment mapping without requiring continuous internet connectivity.

This capability offers several advantages:

- Faster decision-making with minimal latency
- Reliable operation in areas with limited network coverage
- Enhanced data privacy and security
- Improved operational efficiency in real-world environments

By processing information locally, autonomous systems can react within milliseconds, a critical requirement when operating around people, machinery, or unexpected obstacles.

How Autonomous Navigation Works

Modern drones and AMRs rely on multiple sensor technologies working together to understand their surroundings.

These systems typically integrate:

- LiDAR sensors for distance measurement and environmental mapping
- Cameras for visual perception and object recognition
- Inertial Measurement Units (IMU) for orientation and movement tracking
- GPS for location positioning in outdoor environments

The data collected from these sensors is combined using Simultaneous Localization and Mapping (SLAM) algorithms. SLAM enables robots and drones to construct a map of their environment while determining their own position within that map at the same time.

Together with AI-powered path planning and obstacle avoidance algorithms, these technologies allow autonomous systems to navigate safely and efficiently while continuously adjusting to changing environmental conditions.

Transforming Industries Through Real-World Applications

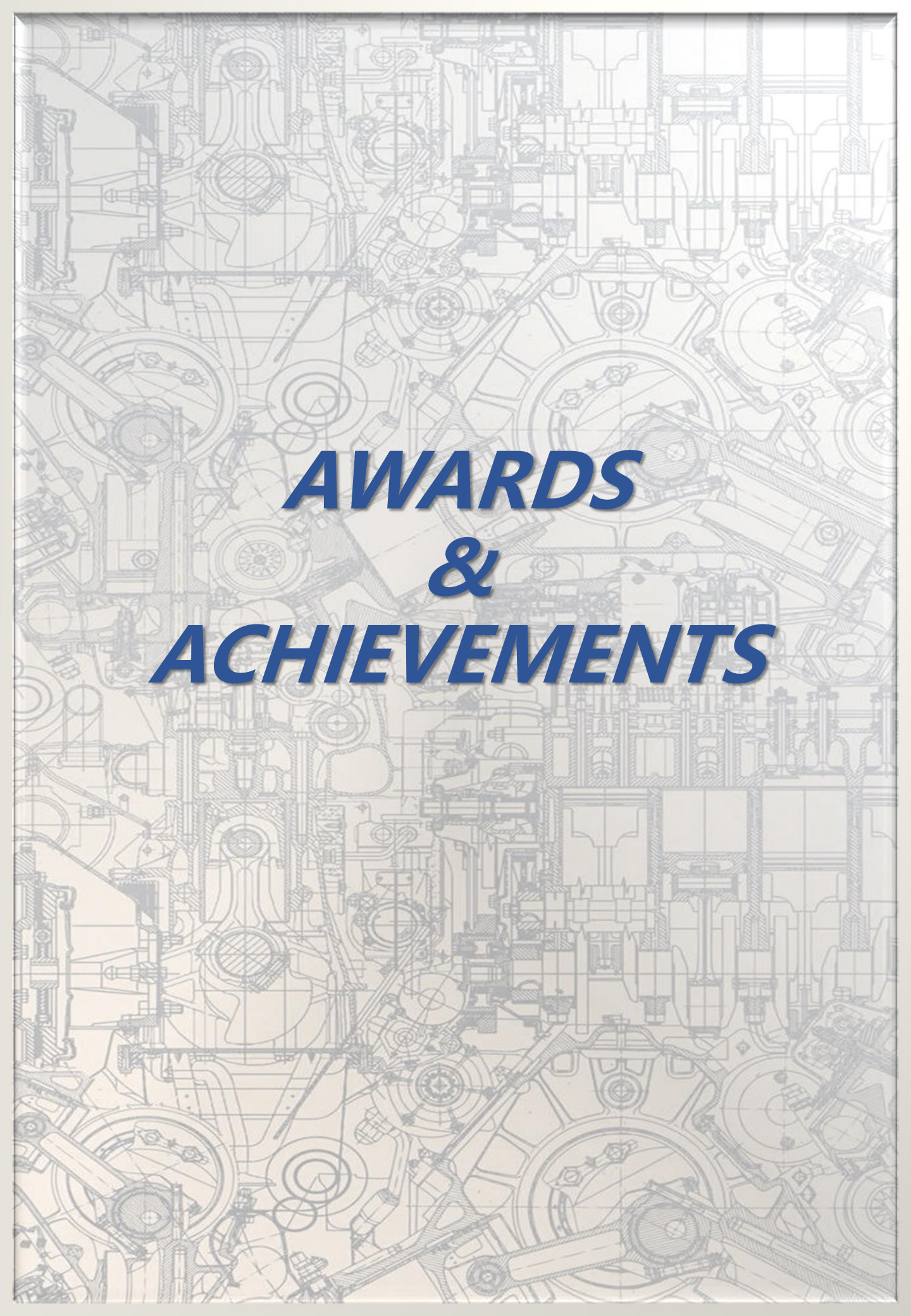
The impact of autonomous robots and drones can already be seen across multiple industries.

- Warehouse and Logistics Operations
- Infrastructure and Energy Inspection
- Precision Agriculture
- Disaster Response & Emergency Operations
- Challenges Driving Future Research

Looking Ahead

The future of autonomous robotics is incredibly promising. As sensors become more capable, processors become more efficient, and AI algorithms continue to advance, autonomous systems are moving beyond pilot projects into mainstream applications

For mechatronics engineers, this evolution represents an exciting shift in the profession. Future engineers will not only design mechanical systems and control algorithms but will also develop intelligent machines capable of understanding their environment, learning from data, and making informed decisions independently.

The background of the entire page is a detailed, light-colored technical drawing of a mechanical engine. It features various components such as pistons, valves, and connecting rods, all rendered in a precise, line-art style. The drawing is oriented vertically and covers the entire surface of the page.

AWARDS & ACHIEVEMENTS

APU's Student-Led AI Rover Wins Global Gold While Training the Next Generation of Innovators



The Asia Pacific University of Technology & Innovation (APU) has secured one of the most prestigious recognitions on the global invention circuit.

At the **EUREKA International Brussels Invention and Innovation Contest 2026**, APU earned a **Gold Medal** through its student-led **MultiSentinel SwarmGuard AGT Autonomous Mobile Robot** — an AI-powered industrial inspection rover developed to address real-world industrial safety challenges.

Conceived within **APU's Centre of Excellence for Research and Development of Drone and IoT (CREDIT)**, the award-winning system was designed to operate in environments too hazardous for human workers, including semiconductor fabrication facilities, chemical plants, and ammonia-laden manufacturing environments.

Engineering Innovation Born from Industrial Reality

Unlike many academic prototypes developed purely for demonstration purposes, the **SwarmGuard** project originated from pressing operational challenges faced by Malaysia's semiconductor and manufacturing sectors.

Hazardous chemical exposure, persistent workplace safety risks, and costly unplanned equipment downtime continue to pose major concerns across high-tech industrial environments.

In response, CREDIT developed the applied final-year research initiative to direct engineering education toward problems of genuine national and industrial significance.

Built upon the **SCUTTLE Autonomous Mobile Robot (AMR)** platform and powered by **ROS2 navigation architecture**, the rover integrates a proprietary **TriSense Detection suite** that combines acoustic sensing, gas monitoring, and thermal analysis into a unified inspection ecosystem.



MultiSentinel AGT Rover
Autonomous Mobile Robots
Multi-Sensor Inspection Platform for Industrial Safety

SENSOR STACK

- 2D LiDAR** 360° SLAM Navigation
Real-time mapping & obstacle avoidance
- Depth Camera** Intel RealSense D435
3D point cloud & visual inspection
- Gas Sensors** Multi-Gas Array
HF, NH₃, HCl, Silane detection
- Edge Compute** NVIDIA Jetson
On-device AI inference <2s

PERFORMANCE

- Coverage: **500m × 500m**
- Runtime: **8+ hours**
- Speed: **0.5-1.2 m/s**
- Payload: **15 kg**
- Response: **<2 sec**

✓ ATEX/IECEX Zone 1 Certified • ✓ SEMI S2/S8 Compliant • ✓ 95% RH Tropical Tested • ✓ 24/7 Autonomous Operation

Intech Solutions • Penang, Malaysia

An overview of the Autonomous Mobile Robot (AMR) developed by APU students Sin Jun Yan and Chin Kah Min, which won a Gold Medal at the EUREKA International Brussels Invention and Innovation Contest 2026, where they participated virtually.

These sensing capabilities are further orchestrated through an advanced Vision-Language Model anomaly detection pipeline, enabling the system to identify irregularities, trigger intelligent alerts, and support predictive industrial maintenance.

Most importantly, the system is designed to significantly reduce direct human exposure to hazardous industrial conditions, with the platform capable of lowering worker exposure risks by up to 90 per cent.

A Cross-Disciplinary Partnership in Action

The project was driven through a deliberate cross-disciplinary collaboration between two Final Year Project (FYP) students from different engineering disciplines, reflecting APU's emphasis on integrated problem-solving and interdisciplinary innovation.

Sin Jun Yan, a Bachelor of Mechatronics Engineering with Honours student, engineered the hardware-centric architecture of the system. His contributions included the dual-microphone acoustic array, multi-sensor integration framework, and the acoustic-triggered camera activation mechanism that enables intelligent environmental monitoring.

Complementing the hardware innovation, **Chin Kah Min**, a Bachelor of Computer Engineering with Honours student, developed the agentic AI framework and the OCAD software stack responsible for anomaly detection and autonomous analytical processing.

The project was supervised by **Assistant Professor Inv Ir Narendran Ramasenderan**, **Head of CREDIT** and **Chief Executive Officer of IoTech Solutions**, APU's deeptech spinoff company, alongside Research Fellow **Mr Krishna Ravinchandra**.

The initiative was conducted under the institutional patronage of **Professor Ir EUR ING Dr Vinesh Thiruchelvam**, APU's Chief Innovation & Enterprise Officer.

Further extending its international success, the students' FYP also earned global recognition at the **International Idea, Novelty, Invention Exhibition and Fair (IDEA 2026)**.

The innovation secured a Gold Medal Award and the prestigious Best International Invention Award, alongside two distinguished international special recognitions — a Special Award from Norton University and another from the Inventors College Organization — further underscoring the project’s global relevance and innovation excellence.

Advancing Sustainable and Safer Industries



Beyond its technical sophistication, the SwarmGuard platform also reflects broader sustainability and industrial transformation goals.

The innovation aligns directly with two **United Nations Sustainable Development Goals (SDGs): SDG 9, Industry, Innovation and Infrastructure**, through its contribution toward resilient and technology-driven industrial systems; and **SDG 12, Responsible Consumption and Production**, through its prevention of chemical incidents, reduction of equipment failure waste, and promotion of safer and more sustainable manufacturing practices.

By integrating AI, robotics, IoT sensing, and intelligent inspection capabilities into a deployable industrial platform, the project demonstrates how university-led research can contribute meaningfully to safer industrial ecosystems and future-ready manufacturing infrastructure.

Every Generation of Innovators Trains the Next

Crucially, the project does not conclude with the graduation of its creators.

In keeping with APU's deeply embedded culture of knowledge transfer and mentorship, Chin Kah Min and Sin Jun Yan have already begun passing their expertise to a new generation of engineering students at CREDIT.

Through hands-on training sessions, they have guided juniors **Harshayn Vythilingam** and **Gayatri Reshma Penjarla** in areas ranging from hardware integration and ROS2 system architecture to the OCAD anomaly detection pipeline and autonomous robotics development.

This continuity ensures that the SwarmGuard platform will continue evolving through successive student cohorts, allowing future researchers and innovators to refine, expand, and potentially commercialise the technology further.

Within CREDIT, this culture has become a defining tradition: **every generation of innovators trains the next.**

Building a Pipeline of Internationally Recognised Innovation

The Gold Medal victory in Brussels further strengthens CREDIT's growing international reputation in advanced engineering and deep technology research.

From 2025 to 2026 alone, the centre has accumulated more than 34 international awards, alongside over 37 active intellectual property filings, more than 60 research publications, and over RM300,000 in cloud research grants.

More significantly, the achievement reinforces a defining institutional philosophy at APU: that final-year projects are not academic exit rituals, but launchpads for international recognition, protected intellectual property, and commercially relevant industrial impact.

From lecture hall to laboratory, from laboratory to launchpad, and now from Kuala Lumpur to Brussels, APU's innovation ecosystem continues to nurture talent capable of addressing real-world challenges — generation after generation.

Well done to the entire team for proving that passion, creativity, and teamwork can lead to world-class success.

APU Students' AI Rescue Drone System Wins Double Recognition at VHack 2026



The winning team with their mentors. From left: Asst Prof Ir EUR ING Ts Dr Lau Chee Yong, Mervin Ooi Zhian Yang, Chin Kai Jack, Cindy Pua Kah Qi, Kok Jia Yin, and Ms Tan Li June.

A team of talented Computer Engineering students from the Asia Pacific University of Technology & Innovation (APU) has earned national recognition after securing a remarkable **double achievement at VHack 2026** with an innovation designed to support disaster response efforts when communication systems fail.

Competing under the name **Team SwarmguardHQ**, students **Kok Jia Yin, Cindy Pua Kah Qi, Mervin Ooi Zhian Yang, and Chin Kai Jack** impressed judges with “**SIREN—Swarm Intelligence for Rescue and Emergency Navigation**”, a fully offline AI rescue drone orchestration system built to operate in disaster-stricken environments without internet connectivity.

At the finals of VHack 2026, held on 25 April 2026 at Universiti Sains Malaysia (USM), the team walked away with both the **Best Presentation Award and a Consolation Prize of RM500**. Organised by the USM Computer Science Society, VHack is widely recognized as one of Malaysia’s most competitive university hackathons, attracting bright young innovators from across the country.

Addressing a Critical Gap in Disaster Response

What made SIREN particularly compelling was its strong humanitarian focus and immediate real-world relevance.

The team developed the system to address a major challenge often faced during floods, earthquakes, and other catastrophic emergencies that caused the collapse of communication infrastructure. In many disaster situations, conventional AI systems become ineffective because they rely heavily on internet connectivity and cloud-based operations.

SIREN was designed to overcome this limitation.



The command dashboard of SIREN.

Operating entirely offline, the system enables a fleet of rescue drones to continue coordinating missions autonomously, even in environments where communication networks have completely failed.

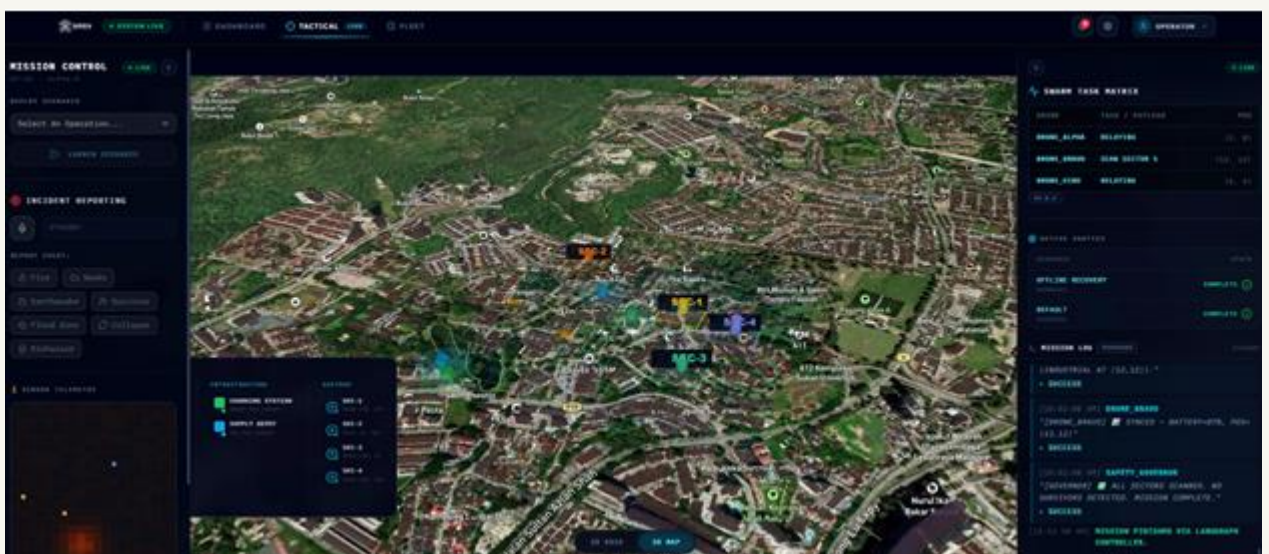
Powered by an on-device large language model (LLM) and a LangGraph-based AI agent, SIREN is capable of intelligent reasoning and autonomous decision-making without depending on external servers or cloud access.

The AI system communicates with rescue drones through 21 standardized Model Context Protocol (MCP) tools, allowing the drones to carry out mission-critical operations such as search-and-rescue scanning, battery management, emergency supply delivery, and self-healing mesh network recovery.

According to team member **Kok Jia Yin**, the idea behind SIREN emerged from a desire to ensure that technology remains useful precisely when humanity needs it most.

“When disasters strike, internet-dependent systems often fail at the worst possible moment. SIREN was created to bridge that gap by enabling rescue drones to continue searching, coordinating, and delivering aid independently, even when conventional systems go dark,” said Jia Yin.

Combining AI, Transparency, and Human Oversight



The command dashboard of SIREN.

Beyond its technical sophistication, SIREN also stood out for its emphasis on transparency and human oversight.

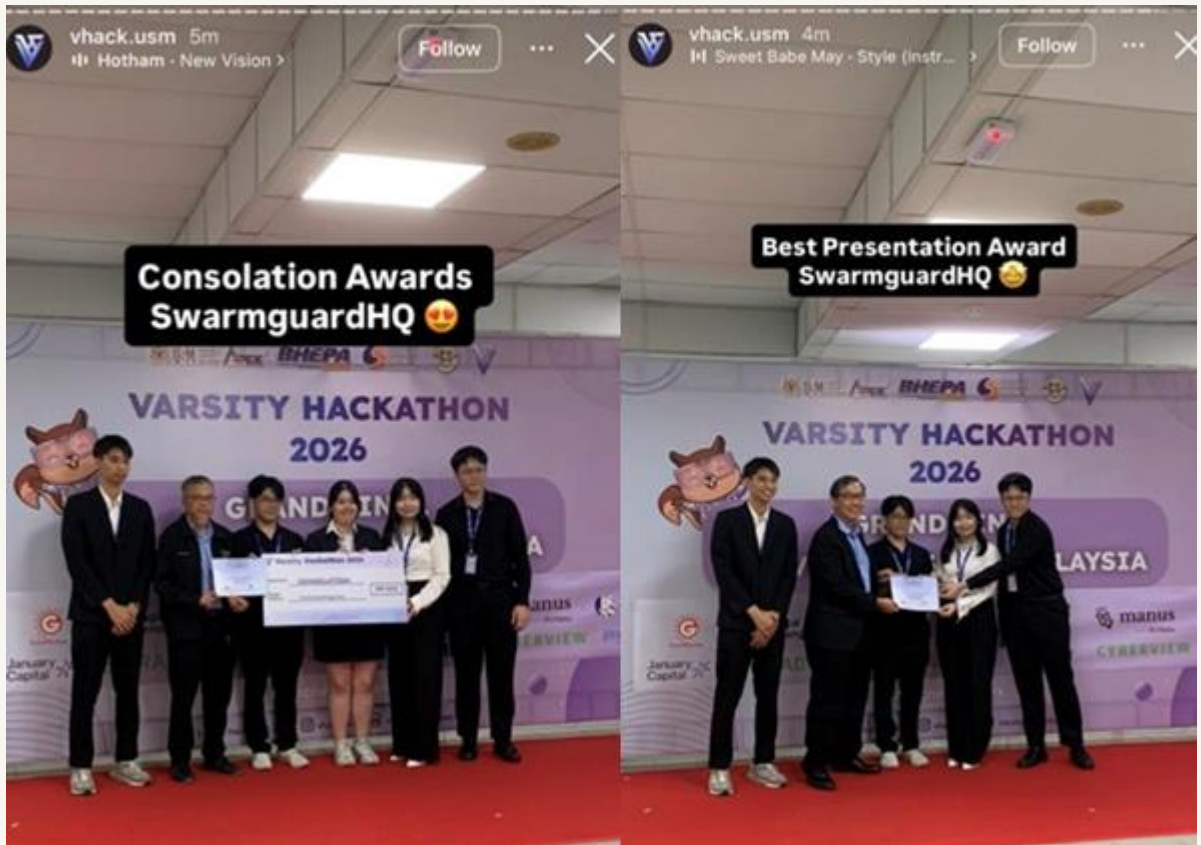
One of the system's most distinctive features is a live dashboard built on Next.js 15, which streams the AI's real-time Chain-of-Thought reasoning to field commanders. This enables rescue personnel to monitor and understand how the AI makes decisions during autonomous operations — an increasingly important factor in responsible AI deployment.

What truly differentiated SIREN from other competing solutions was its unique integration of multiple advanced capabilities into a single ecosystem. These included full offline functionality, on-device LLM reasoning, MCP compliance, self-healing swarm coordination, and an explainable audit trail — features rarely combined within a disaster-response system.

Mentorship and Collaborative Learning

The team's achievement was guided by strong mentorship and interdisciplinary collaboration.

Team SwarmguardHQ was mentored by **Ms Tan Li June, Lecturer from APU's School of Computing (SoC)**, alongside **Asst Prof Ir EUR ING Ts Dr Lau Chee Yong from the School of Engineering (SoE)**, who also leads the Visionary AI Studio at APU.



A moment from the VHack 2026 award ceremony, as shared on Universiti Sains Malaysia's social media.

Their guidance helped the students refine not only the technical dimensions of the project, but also their ability to communicate complex ideas clearly and meaningfully.

Empowering Students to Create Technology for Good

Prof Ir EUR ING Dr Vinesh Thiruchelvam, Chief Innovation & Enterprise Officer (CIEO) and Chief Sustainability Officer (CSO) of APU, congratulated the team on their outstanding accomplishment.

“This achievement reflects the kind of purpose-driven innovation we strive to cultivate at APU. SIREN demonstrates how young talent can apply advanced technology to solve meaningful humanitarian challenges while creating real societal impact,” he said.

The success of Team SwarmguardHQ at VHack 2026 further reinforces APU’s standing as a leading technology and innovation institution in Malaysia, where students are empowered to combine creativity, technical excellence, and social responsibility to address complex real-world challenges.

More importantly, it highlights how the next generation of innovators is increasingly driven not only by technological advancement, but by the desire to create solutions that can genuinely improve lives when it matters most.

Heartiest congratulations to Dr. Lau and the team for this remarkable success.

May this achievement inspire even greater innovations in the future.

APU Engineering Team Powers Into Top Ranks at UMHackathon 2026 with AI-Driven E-Commerce Solution



APU's Team AS with their mentors. From left: Omar Mahmoud Elsayed Shoair, Ali Mohamed Refai Mohamed Ahmed Ghalab, Youssef Mahmoud Elsayed Shoair (Mentor), Youssef Ahmed Said Ahmed Ghazy, Ahmed Elshafaay Haseb Elkhidr, Mohamed Hemdan Abdelaziz Abdelsalam Safaan (Team Lead), and Asst Prof Ir EUR ING Ts Dr Lau Chee Yong (Mentor).

A team of **Computer Engineering** students from Asia Pacific University of Technology & Innovation (APU) has achieved an impressive milestone at **UMHackathon 2026**, securing the position of **4th Runner-Up** among 272 competing teams and taking home **RM1,000 in prize money**.

Organised by PEKOM and the Faculty of Computer Science and Information Technology (FSKTM) at Universiti Malaya, the hackathon was supported by leading industry players including Z.ai, YTL AI Labs, Etiqa, Ant International, Alphared and TRAE.

Widely regarded as one of Malaysia's most competitive university hackathons, the event brought together some of the nation's brightest technology talents to solve real-world challenges through innovation.

The competition unfolded in two stages: an online preliminary round followed by a physically held final round on 2 and 3 May 2026 at Universiti Malaya's FSKTM Building and KPS Auditorium in Kuala Lumpur.

Standing Out in a Highly Competitive Field

The scale of UMHackathon 2026 underscored the significance of the achievement. A total of 272 teams comprising 1,103 participants competed in the preliminary stage across two domains. **Only 27 teams earned a place in the finals**, making advancement beyond the first round an accomplishment in itself.

Representing APU under Team ID 178 in Domain 1: AI Systems and Agentic Workflow Automation, Team AS consisted of Mohamed Hemdan Abdelaziz Abdelsalam Safaan (Team Leader), Ahmed Elshafaay Haseb Elkhidr, Ali Mohamed Refai Mohamed Ahmed Ghalab, Omar Mahmoud Elsayed Shoair, and Youssef Ahmed Said Ahmed Ghazy.

Competing against top university teams from across the country, the students demonstrated not only technical capability but also a strong understanding of industry needs through the development of a practical AI-powered solution.

Introducing Komplain.ai



Komplain.ai demonstrates strong commercial relevance and practical value. In this picture, Omar Mahmoud Elsayed Shoair pitches the team's solution to the panel of judges during the final presentation.

The team's innovation, “**Komplain.ai**”, is an **AI-powered complaint resolution assistant** developed specifically for e-commerce support teams operating in Malaysia's multilingual marketplace environment.

The solution streamlines what is often a labour-intensive process. Instead of requiring customer support agents to manually review complaints, locate order information, determine appropriate resolutions and draft responses, Komplain.ai automates the entire workflow.

Sellers simply paste a customer complaint—whether written in English, Bahasa Malaysia or Manglish—and may optionally upload a photo of a damaged or incorrect item. Within seconds, the system recommends an appropriate course of action, such as issuing a refund, arranging a reshipment, requesting additional information or dismissing the complaint.

The platform also generates bilingual responses in both English and Bahasa Malaysia, while adapting the tone to suit the customer's communication style. Importantly, all responses remain subject to human review and approval before being sent, ensuring accountability and quality control.

Designed to address the challenges faced by Malaysian online merchants handling large volumes of customer complaints across multiple languages, Komplain.ai demonstrates clear commercial relevance and practical value. **A working prototype of the solution is available online at komplai-test-xi2r.vercel.app.**

Innovation Under Pressure

The final round tested participants beyond technical skills alone. Teams worked through the night in campus rooms without beds, navigating long hours and limited rest while refining their solutions and preparing for presentations.

Despite the demanding conditions, the experience fostered a spirit of resilience, collaboration and innovation. For the APU team, the intense environment became an integral part of the hackathon journey and contributed to the excitement of competing at a national level.

Adding to the experience, top-performing teams were invited to participate in an exclusive session with Ant International's technology leaders and Head of Talent Acquisition. Several APU team members also received direct approaches from judges regarding potential interview opportunities, extending the impact of the competition beyond the event itself.

Mentorship Driving Success



Team AS members (from left) Youssef Ahmed Said Ahmed Ghazy, Ali Mohamed Refai Mohamed Ahmed Ghalab, Ahmed Elshafaay Haseb Elkhidr, Mohamed Hemdan Abdelaziz Abdelsalam Safaan (Team Lead), and Omar Mahmoud Elsayed Shoair receive a mock cheque from the organisers in recognition of their achievement at UMHackathon 2026.

The team's achievement was supported by dedicated mentorship throughout the competition.

Leading the guidance effort was **Asst Prof Ir EUR ING Ts Dr Lau Chee Yong, Head of the Visionary AI Studio (VAS) within APU's School of Engineering**, whose expertise helped the students refine both their technical approach and project direction.

Special recognition also goes to **Youssef Mahmoud Elsayed Shoair**, an APU alumnus currently pursuing postgraduate studies at the University. Serving as a close mentor from the earliest stages of preparation through to the final round, his advice and encouragement played an instrumental role in the team's success.

Building the Next Generation of Engineering Talent

Congratulating the students, **Prof Ir Ts Dr Siva Kumar Sivanesan**, Head of the School of Engineering at APU, said: *"It is truly gratifying to see our students not only compete at this level, but do so with a solution that is grounded in real-world relevance and technical rigour."*

"Their performance at UMHackathon 2026 is a reflection of the strong engineering culture we are building at APU, and I am immensely proud of every member of the team and the mentors who supported them along the way."

With Komplain.ai already demonstrating strong practical potential and attracting early industry interest, the future looks promising for Group AS. Their success at UMHackathon 2026 serves as a testament to the calibre of engineering talent nurtured at APU.

**A fantastic achievement by the team.
Keep pushing boundaries and inspiring
future innovators.**

APU Engineering Students achieve Double Bronze Success at International Invention, Innovation, and Design Competition 2026



Two Final Year students from the School of Engineering (SoE) at Asia Pacific University of Technology & Innovation (APU) achieved international recognition after securing two Bronze Awards at the International Invention, Innovation, and Design Competition (I3DC) 2026.

The projects were developed under the mentorship of **Ir Ts Dr Reena Sri Selvarajan** (Senior Lecturer, SoE at APU), who guided the students throughout their project journey with a strong emphasis on innovation-driven engineering and practical problem-solving.

I3DC 2026; organised by Universiti Teknologi MARA (UiTM), Kelantan, serves as a premier hybrid platform that brings together innovators, researchers, and students from diverse academic institutions and international backgrounds to exchange ideas and present their innovations, research outputs, and conceptual solutions that highlight emerging technologies, interdisciplinary approaches, and contemporary engineering applications aimed at addressing real-world challenges and advancing sustainable technological development.

SolarChargeX: Advancing Smart and Sustainable EV charging Systems



SolarChargeX is a next-generation electric vehicle (EV) charging solution designed to enhance convenience, accessibility, and sustainability within modern parking environments, aligning with Sustainable Development Goal 7, 9, 11, and 17 (SDG 7, SDG 9, SDG 11, and SDG 17).

The innovation features a mobile charging system powered by solar energy, enabling charging services to be delivered directly to EVs in a more efficient and user-friendly manner.

By integrating renewable energy with mobility solutions, the system supports more flexible and decentralised charging access, reducing dependency on fixed charging infrastructure.

The project reflects the growing importance of sustainable transportation, renewable energy adoption, and smart mobility solutions in shaping future urban infrastructure.

It demonstrates how engineering innovation can be applied to address real-world challenges, while supporting the transition towards cleaner and more efficient energy systems.

SkyInspect: A Smart Drone-Based System for Safer Infrastructure monitoring



SkyInspect is an AI-enabled drone-based solution designed to improve safety and efficiency in building inspection processes, aligning with Sustainable Development Goal 9 and 11 (SDG 9 and SDG 11).

Developed as a smarter alternative to conventional inspection methods, the system enables real-time monitoring of high-rise buildings and other hard-to-access structures.

By reducing the need for manual inspections in hazardous environments, it helps to significantly minimise safety risks, while improving the speed and accuracy of structural assessments.

Through the integration of drone technology and artificial intelligence (AI), the system enhances infrastructure monitoring capabilities, supporting more proactive maintenance and safer urban environments.

The innovation demonstrates how modern engineering solutions can be leveraged to address industry challenges, while improving operational efficiency and workplace safety.

Cultivating Innovation-Driven Students

Dr Reena highlighted that this achievement reflects the students' dedication, creativity, and perseverance in transforming engineering ideas into meaningful innovations.

“Their ability to develop sustainable and practical solutions demonstrates strong potential to contribute to future technological advancement.”

Through achievements such as this, APU continues to provide students with opportunities to apply knowledge beyond the classroom, while developing industry-relevant skills, innovative thinking, and the confidence to create solutions that address global challenges and contribute towards a more sustainable future.

**Congratulations to the students and Ir Ts
Dr Reena Sri Selvarajan on securing double
Bronze Awards at I3DC 2026.**

**This achievement reflects your innovation,
dedication, and commitment to
engineering excellence.**

Apu Students Crowned Champions At National Ai Competition 2026

Congratulations

**APU Students crowned Champions
at National AI Competition 2026**



Lavinesh Ravindran, Wong Jia Hern, Ivan Ho Jing Ming, and Chan Hao Wen

Mentored by: Ir Ts Dr Denesh Sooriamorthy (Assistant Professor, School of Engineering at APU)

Four students from Asia Pacific University of Technology & Innovation (APU) achieved national recognition after securing the **Champion** title in the **Engineering Track (Category B)** at the **National AI Competition 2026**, held on 13th June 2026 at Sunway University.

The winning team comprised **Lavinesh Ravindran, Wong Jia Hern, Ivan Ho Jing Ming, and Chan Hao Wen**, who competed under the team's name “The Team” and represented APU among finalists from institutions across Malaysia, with their innovative solution titled “SentinAI: Privacy-Preserving Elder Care through Wi-Fi Channel State Information sensing.”



The team's success was guided by the mentorship of **Ir Ts Dr Denesh Sooriamoorthy** (Assistant Professor, School of Engineering at APU), whose support and technical guidance helped the students refine and develop their innovative solution.

The National AI Competition 2026, jointly organised by Sunway University and Rakan Tutor, is one of Malaysia's largest artificial intelligence (AI) competitions.

Centred on the theme “**Sustainable Innovation for a better future**,” the competition challenges participants to develop AI-driven solutions that address real-world issues, while contributing towards the United Nations Sustainable Development Goals.

The competition features multiple tracks, including AI Engineering, where participants are tasked with designing practical and impactful solutions to contemporary societal challenges.

SentinAI: Privacy-Preserving Elder Care through Wi-Fi sensing

Designed to support Malaysia's growing ageing population, SentinAI transforms existing household Wi-Fi infrastructure into an intelligent fall-detection system for elderly residents.

The solution utilizes six low-cost ESP32-S3 sensor nodes to passively analyse Wi-Fi signal variations caused by human movement, enabling a machine learning model to identify falls in real time and instantly notify family members through mobile alerts.

Unlike conventional monitoring systems that rely on cameras or wearable devices, SentinAI preserves user privacy by requiring no behavioral changes from elderly individuals and capturing no visual data.

The solution is also highly affordable, with an estimated hardware cost of approximately RM500, making advanced elder care monitoring significantly more accessible compared to traditional caregiving alternatives.

Empowering the next Generation of Innovators



Dr Denesh noted that this achievement reflects the students' commitment, creativity, and perseverance in applying engineering knowledge to develop practical and impactful AI-driven solutions.

“Their work in addressing real-world challenges in elderly care demonstrates strong technical capability, coupled with a thoughtful approach to privacy, accessibility, and real-world usability, highlighting how student innovation can translate into meaningful contributions that align with both societal needs and technological advancement.”

“Through initiatives like this, APU continues to create opportunities for students to engage with applied learning beyond the classroom, strengthening their technical competencies, critical thinking, and confidence in developing solutions for complex global challenges and a more sustainable future,” he said.

An outstanding achievement that reflects the strength of APU's engineering talent and commitment to innovation.

Congratulations to the team and Ir Ts Dr Denesh Sooriamoorthy.

APUSPESC Recognised as Outstanding Student Chapter by SPE Kuala Lumpur

The **APU Society of Petroleum Engineers Student Chapter (APUSPESC)** has been recognized with the prestigious **SPE Kuala Lumpur Outstanding Student Chapter Award (2024/25)** during the **Society of Petroleum Engineers Kuala Lumpur (SPEKL) Annual General Meeting (AGM)** held on 29 June 2026.

The award was presented in recognition of APUSPESC's outstanding service, leadership, and commitment in supporting the mission and initiatives of the SPE Kuala Lumpur Section throughout the 2024/25 session.

The achievement reflects the chapter's active participation in professional development programmes, industry engagement activities, technical events, and community outreach initiatives that have contributed to the growth of student members and the wider engineering community.

The student chapter operates under the advisory of **Ir. Dr. Wong Siew Fan**, Senior Lecturer at the School of Engineering, Asia Pacific University of Technology & Innovation (APU), who has provided continuous guidance and mentorship to the student leadership team in planning and executing chapter activities aligned with the objectives of the **Society of Petroleum Engineers (SPE)**.



Recognition of Student Excellence and Leadership

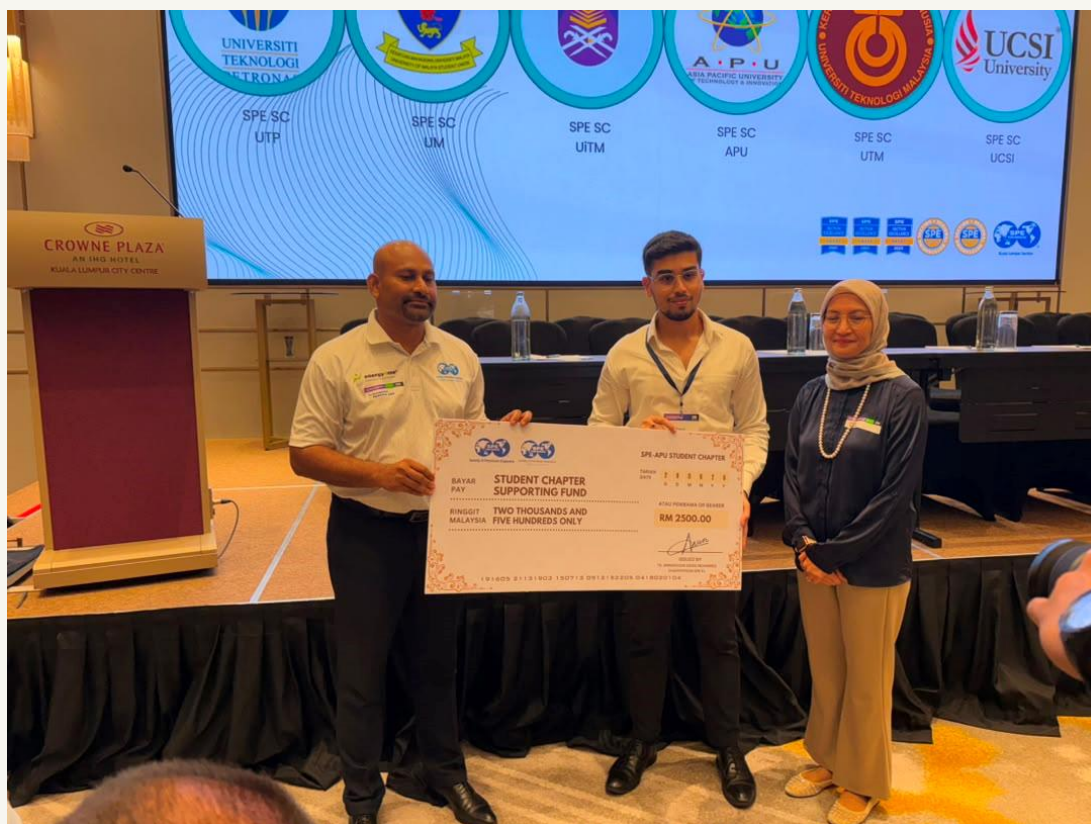
The **Outstanding Student Chapter Award** serves as a testament to the dedication and commitment demonstrated by APUSPESC members throughout the academic year. Through a series of student-led initiatives, members gained valuable experience in project management, teamwork, leadership, stakeholder engagement, and professional communication.

Under the chapter's leadership framework, students were encouraged to take ownership of activities while developing practical skills required by the engineering profession. The chapter's success reflects the students' ability to organize impactful programmes that support both personal development and professional growth.

Additional Support from SPE Kuala Lumpur

In addition to receiving the **Outstanding Student Chapter Award**, APUSPESC was also among the selected student chapters awarded a **RM2,500 Student Chapter Supporting Fund** by SPE Kuala Lumpur during the AGM.

This financial support will further strengthen the chapter's ability to organize future professional, technical, and community engagement activities, providing more opportunities for students to interact with industry professionals and enhance their industry readiness.



APUSPESC representatives receiving the RM2,500 Student Chapter Supporting Fund from SPE Kuala Lumpur during the SPEKL AGM 2026.

Advancing APU's Industry and Professional Engagement

The recognition received from SPE Kuala Lumpur highlights APU's continued commitment to producing industry-ready graduates through active involvement in professional societies and industry-linked activities.

Through **APUSPESC**, students are exposed to valuable learning opportunities beyond the classroom, enabling them to connect academic knowledge with real-world engineering practice. Participation in SPE activities also fosters stronger connections between students, academia, and industry practitioners.

The achievement further enhances APU's visibility within the petroleum and energy engineering community while reinforcing the University's commitment to nurturing future engineering leaders who possess not only technical competencies but also strong professional and leadership skills.

A Milestone for APUSPESC

The Outstanding Student Chapter Award represents a significant milestone for APUSPESC and reflects the collective efforts of student leaders, members, advisors, and industry partners who have continuously supported the chapter's activities.

As APUSPESC continues to expand its initiatives and strengthen collaborations with industry and professional bodies, the chapter remains committed to empowering students, promoting engineering excellence, and contributing positively to the engineering profession.

An inspiring achievement that highlights the strength of teamwork, commitment, and active engagement within the engineering community.

Congratulations to APUSPESC and Ir. Dr. Wong Siew Fan on this outstanding recognition.

Cultivating Innovation with Compassion

A research project designed to empower smallholder farmers through accessible artificial intelligence (AI) technology has earned international recognition for a student and academic from the Asia Pacific University of Technology & Innovation (APU), demonstrating how technological innovation can be harnessed to create meaningful social impact.



Chennupati Sai Dheeraj (left) and his mentor, Dr Mukil Alagirisamy, proudly display the certificates for the Best Paper Award they received at the International Conference on Emerging Technologies in Computing, Artificial Intelligence, Information Systems & Cybersecurity (ICETCAI 2026).

Chennupati Sai Dheeraj, a Bachelor of Computer Engineering (Honours) student at APU, together with his mentor, **Dr Mukil Alagirisamy**, Assistant Professor at APU's School of Engineering (SoE), received the **Best Paper Award at the International Conference on Emerging Technologies in Computing, Artificial Intelligence, Information Systems & Cybersecurity (ICETCAI 2026)** for their research titled **“SMART FARM AI: A Hybrid Deep Learning Mobile Application for Real-Time Crop Monitoring and Interactive Farmer Support.”**

Organised by Guru Nanak Dev Engineering College, Bidar, Karnataka, India, ICETCAI 2026 was held from 24 to 25 April 2026 and brought together researchers, academicians, and industry professionals from around the world to exchange ideas and showcase advancements in artificial intelligence, machine learning, advanced computing, information systems, and cybersecurity.

Their award-winning paper stood out among 50 research submissions presented at the conference, earning recognition for its innovative approach to improving agricultural productivity and sustainability through technology.

Using AI to Empower Farming Communities

As artificial intelligence continues to transform industries worldwide, Dheeraj sought to address a challenge closer to society's roots — agriculture.

Inspired by the belief that technology should benefit communities and improve lives, he embarked on a research journey to develop a practical solution that could help smallholder farmers gain access to advanced agricultural tools through a single mobile application.

The project was developed under the guidance of Dr Mukil Alagirisamy and with the continual encouragement of **Professor Dr Siva Kumar Sivanesan**, Head of the School of Engineering at APU, who advocates the importance of creating innovations that contribute positively to society.

The team envisioned a solution that combines several critical farming functions into one accessible platform. By integrating crop disease detection, soil-based crop recommendations, resource optimization, and multilingual advisory support, the application enables farmers to make informed decisions that can improve crop yields, reduce resource wastage, and promote sustainable agricultural practices.

Bringing Multiple AI Technologies into One Mobile Application

The primary objective of SMART FARM AI was to bridge the gap between sophisticated AI research and the practical needs of farming communities.

The mobile application incorporates four key AI-powered functions:

Crop Disease Detection: allows farmers to capture images of crops using a smartphone camera. A hybrid deep learning model then analyses the images to identify diseases across 38 crop categories.

Soil Analysis and Crop Recommendation: evaluates soil conditions using a Random Forest classifier and recommends crops best suited to the available land.

Resource Optimization: employs a Genetic Algorithm to determine the ideal amount of fertilizer and water required for each field, helping farmers maximize productivity while minimizing waste.

Trilingual Chatbot Support: enables farmers to communicate in English, Malay, or Tamil to obtain farming advice and answers to agricultural questions.

To ensure accessibility in rural environments, the entire system was developed using a Flutter mobile front-end and FastAPI back-end. The deep learning model was compressed through quantization to only 11.9 MB, enabling the application to operate directly on smartphones without requiring internet connectivity.

By consolidating multiple technologies into a single lightweight platform, the project demonstrates how advanced AI can be made practical, affordable, and accessible for underserved communities.

International Recognition and Valuable Learning Experiences

For Dheeraj, presenting at an international conference while still pursuing his undergraduate studies was both a significant achievement and a transformative learning experience.

“Participating in the conference was an immensely rewarding experience. The online format facilitated seamless networking with researchers and academicians from across India, Malaysia, and other parts of the world, providing a unique opportunity to connect with leading professionals in the field,” he shared.

He particularly valued the opportunity to engage with experts who provided insights that would help shape the future development of the project.

“The questions and constructive feedback I received during the session not only enhanced my understanding of edge-AI for agriculture but also encouraged the development of new ideas for my ongoing work,” he added.

Beyond the award itself, the experience reinforced his belief that technology can be a powerful force for social good.

A Future Driven by Purpose

Receiving international recognition has further strengthened Dheeraj's determination to continue developing innovative solutions that address real-world challenges, particularly in agriculture and community development.

Reflecting on his journey, he emphasised the importance of perseverance, curiosity, and meaningful mentorship in achieving success.

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“I would like to express my heartfelt gratitude to Dr Mukil Alagirisamy for her unwavering guidance, to the School of Engineering at APU for their continuous encouragement, and to the organising committee of ICETCAI 2026 for the opportunity to present and the honour of receiving the Best Paper Award,” he said.

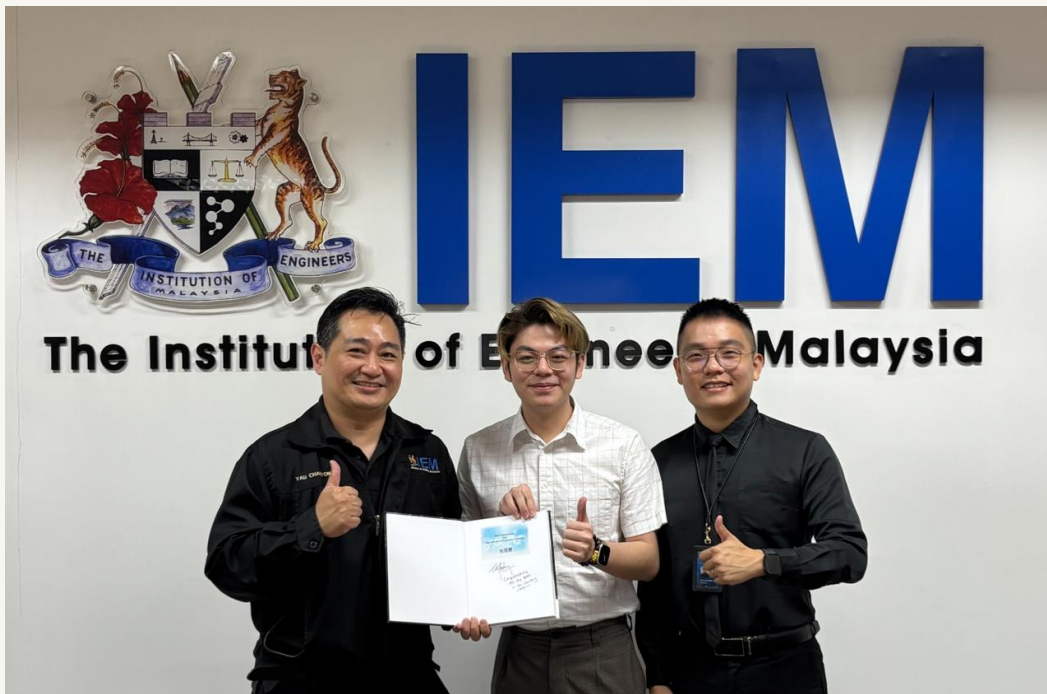
Proud of his mentee’s accomplishment, **Dr Mukil Alagirisamy** remarked, *“Dheeraj’s achievement exemplifies APU’s commitment to nurturing not only technologically competent graduates, but also socially conscious innovators who are driven to use technology for the greater good.”*

Through strong academic mentorship, industry-relevant learning, and a culture that encourages innovation with purpose, APU continues to shape future-ready graduates who combine technical excellence with compassion, creating solutions that improve lives and contribute meaningfully to society.

**Congratulations to Chennupati Sai Dheeraj
and Dr Mukil Alagirisamy on this
outstanding international recognition.**

APU Engineering Student Recognised by IEM as Best First-Year Engineering Student

Lim Yong Xing's recognition through the Institution of Engineers, Malaysia Book Prize reflects APU's commitment to nurturing future-ready engineering talent from the very beginning of their academic journey.



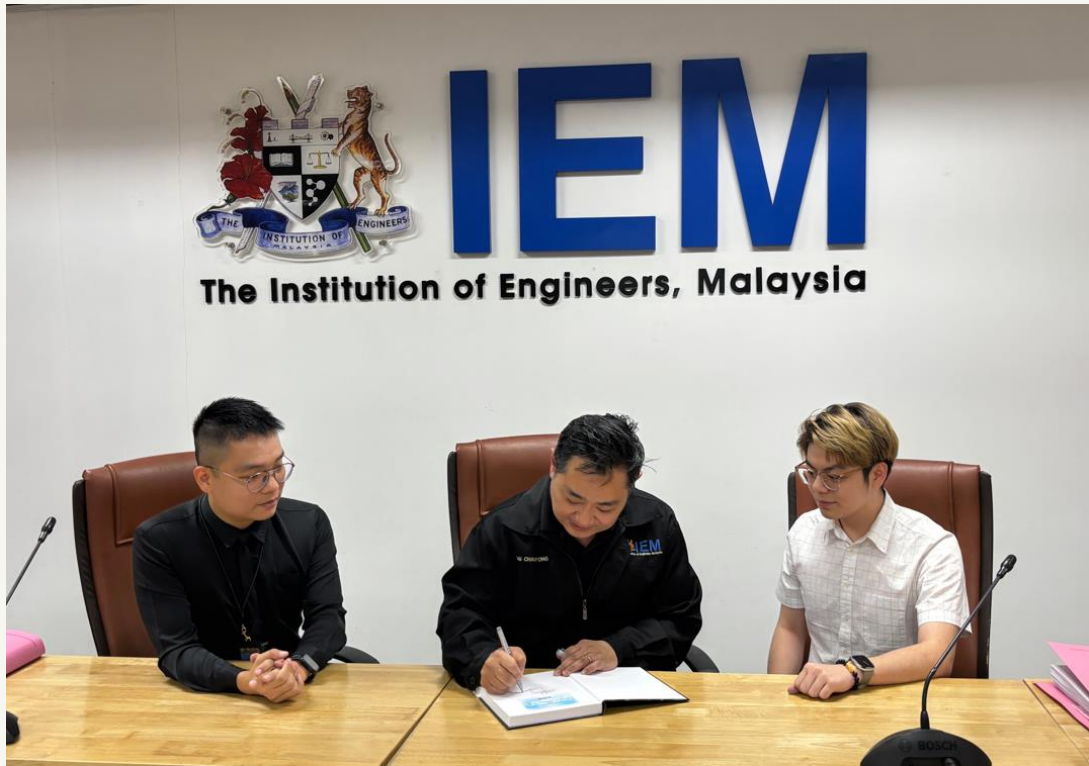
(From left to right) IEM President Ir Yau Chau Fong presents the IEM Book Prize to APU Computer Engineering student Lim Yong Xing, who is recognized as the Best First Year Engineering Student. Lim was put forward for the award by his Programme Leader, Asst Prof Ir EUR ING Ts Dr Lau Chee Yong from APU's School of Engineering.

Asia Pacific University of Technology & Innovation (APU) celebrates the achievement of **Lim Yong Xing**, a first-year Bachelor of Computer Engineering student, who has been awarded the Institution of Engineers, Malaysia (IEM) Book Prize for the “**Best First Year Engineering Student**” in recognition of his outstanding academic performance.

The **annual IEM Book Prize, worth RM500**, is awarded to one outstanding first-year engineering student nominated by each participating university. Nominees are required to be Student Members of IEM, reflecting the professional body’s aim to encourage young engineering undergraduates to engage early with the engineering profession, while cultivating strong academic discipline and a habit of reading from reliable references.

As part of the award process, Lim selected an engineering reference book of his choice, which was subsequently reimbursed by IEM. In keeping with tradition, the book was brought to IEM headquarters, where it was inscribed with the dedication, “**The Institution of Engineers, Malaysia Book Prize for the Best First Year Engineering Student**” and personally signed by the IEM President.

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IEM President Ir Yau Chau Fong (centre) signs the inscribed engineering reference book chosen by Lim Yong Xing (right). Looking on is Asst Prof Ir EUR ING Ts Dr Lau Chee Yong (left), Programme Leader of Computer Engineering at APU's School of Engineering (SoE).

On 3 July 2026, the incumbent IEM President, Ir Yau Chau Fong, signed the dedicated book and presented it to Lim during a simple but elegant ceremony at IEM headquarters. The gesture formally commended Lim as **APU's Best First Year Engineering Student for 2026.**

During the presentation, Ir Yau commended Lim for his commitment to his studies and encouraged him to continue striving for excellence throughout his engineering journey. The signed and dedicated book now serves as a lasting memento of Lim's achievement, while also symbolizing the standards of excellence upheld by Malaysia's engineering profession.

Lim was put forward for the award by **Asst Prof Ir EUR ING Ts Dr Lau Chee Yong**, Assistant Professor and Programme Leader of Computer Engineering at APU's School of Engineering (SoE), who is also the Lead of the Visionary AI Studio (VAS). Dr Lau accompanied Lim to IEM headquarters for the presentation.

According to Dr Lau, Lim's nomination reflected his consistent dedication and strong academic results during his first year of engineering study. Such early recognition is important, as it motivates young talents to build confidence, remain disciplined and begin seeing themselves as future contributors to the professional engineering community.

Congratulating Lim on the achievement, **Prof Ir Dr Siva Kumar Sivanesan**, Professor and Head of the School of Engineering (SoE) at APU, described the recognition as a proud moment for the University and a reflection of the calibre of students within the Computer Engineering programme.

"We are immensely proud of Lim Yong Xing for earning this recognition from the Institution of Engineers, Malaysia in his very first year with us. This award is a testament not only to his own hard work and discipline, but also to the strong foundation our Computer Engineering programme provides for students to excel from the outset of their studies," said Prof Siva.

“I would also like to acknowledge Dr Lau for his continued mentorship and for championing our students in platforms such as this. We look forward to seeing Lim and many more of our students continue to flourish,” he added.

For APU, Lim’s achievement reinforces the University’s ongoing commitment to nurturing well-rounded, industry-relevant and professionally aware engineering graduates. By working closely with professional bodies such as IEM, APU continues to expose students to professional standards, industry expectations and opportunities for recognition from the early stages of their academic development.



The golden triangle of academia, professional bodies and students is represented by (from left to right) Asst Prof Ir EUR ING Ts Dr Lau Chee Yong, Ir Yau Chau Fong and Lim Yong Xing. Through APU’s close engagement with IEM, students continue to be exposed to professional standards, industry expectations and opportunities for recognition.

This milestone also highlights the role of strong academic mentorship in shaping future engineering talent for Malaysia. Through dedicated faculty guidance, professional engagement and a curriculum that supports both technical competence and professional growth, APU remains committed to building the next generation of engineers who are prepared to contribute meaningfully to industry, society and the nation.

**An inspiring achievement that reflects
dedication, academic excellence, and a
passion for engineering.
Well done!**

Transforming Engineering Ideas into Sustainable Healthcare Solutions

APU Mechatronics Engineering student **Raveen Sangaran** won the **Bronze Medal** (Tertiary Category) at the **International Virtual Innovation Competition (VIC) 2026** for his Final Year Project, **Solarbeat: Solar-Powered Intelligent Heart Rate Monitoring Wristband**, a research-driven innovation developed under APU's Research Development and Innovation Grant (RDIG) on self-powered wearable healthcare technologies.



An innovative Final Year Project (FYP) developed through APU's research-driven education approach by Mechatronics Engineering student Raveen Sangaran earned international recognition after winning the Bronze Medal (Tertiary Category) at the International Virtual Innovation Competition (VIC) 2026.

The prestigious online innovation exhibition and pitching competition, co-organised by **Universiti Teknologi MARA (UiTM)**, attracted outstanding innovations from universities across Malaysia and abroad.

The VIC 2026 concluded with its online award ceremony held on 23 June 2026 following the completion of its submission and evaluation process.

Raveen's project, **Solarbeat: Solar-Powered Intelligent Heart Rate Monitoring Wristband**, competed against entries from leading institutions and ultimately emerging as one of the competition's top achievers.

Solarbeat is a sustainable wearable healthcare device that combined renewable energy harvesting, intelligent physiological monitoring and embedded biomedical engineering to support continuous health monitoring.

The project was developed under the supervision of **Ir Ts Dr S. Reena Sri Selvarajan**, Senior Lecturer and Principal Investigator at the School of Engineering (SoE).

The project formed part of an active Research Development and Innovation Grant (RDIG) on self-powered wearable healthcare technologies, reflecting APU's research-informed teaching philosophy by enabling undergraduate students to contribute to ongoing research while developing practical engineering solutions.

By combining scientific research with hands-on prototype development and technology validation, the project enabled Raveen to experience every stage of the innovation journey — from identifying engineering challenges and applying scientific principles to designing, developing and evaluating a functional prototype.

The wearable device integrated solar energy harvesting, photoplethysmography (PPG)-based heart rate sensing, embedded intelligence and wireless connectivity to create a self-powered smart healthcare solution capable of continuous cardiovascular monitoring.

By reducing dependence on conventional battery charging, the innovation demonstrated significant potential for preventive healthcare, remote patient monitoring and future digital health applications.

The prototype also achieved an estimated Technology Readiness Level (TRL) 6–7, indicating that the technology had progressed beyond laboratory validation and demonstrated strong potential for further development and commercialisation.

Beyond its technological capabilities, Solarbeat supported several of the United Nations Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being) through continuous health monitoring, SDG 7 (Affordable and Clean Energy) by incorporating renewable energy into wearable technology, and SDG 9 (Industry, Innovation and Infrastructure) by advancing sustainable biomedical engineering innovation.

According to **Ir Ts Dr S. Reena**, integrating students into active research projects enabled them to develop innovative technologies while strengthening their engineering and research capabilities.

“Research should not remain confined within laboratories. One of our goals is to transform knowledge into practical solutions that create meaningful impact.

“By integrating students into active research projects, Final Year Projects become opportunities to develop technologies that can potentially benefit society,” she said.

She added that APU believed FYPs should extend beyond fulfilling academic requirements and instead become platforms that encouraged innovation and generated meaningful impact for end users.

“By integrating students into active research, they gain the opportunity to develop technologies that create meaningful societal impact while strengthening their research, engineering and innovation capabilities,” she said.



Raveen Sangaran's Solarbeat demonstrated the potential of self-powered wearable healthcare technology, highlighting APU's commitment to research-led education and sustainable engineering innovation

Turning research into impact

Reflecting on his award-winning innovation, Raveen explained that Solarbeat was designed as a solar-powered smartwatch capable of extending battery life through renewable energy while reducing the need for frequent charging.

The device monitored heart rate, blood oxygen saturation (SpO₂), heart rate variability (HRV) and displayed real-time photoplethysmography (PPG) waveforms.

It also tracked daily physical activities such as step count and incorporated Bluetooth Low Energy (BLE) connectivity with a graphical user interface (GUI), allowing users to monitor their health data wirelessly on external devices.

He believed the project stood out because it combined sustainability, practical engineering and user-centred healthcare innovation within a single wearable solution.

With Dr Reena's mentorship, he was able to refine the design, overcome technical challenges and successfully develop a fully functioning prototype that clearly demonstrated the project's practical applications and societal benefits.

“From this competition, I learned how to transform an idea into a real-life prototype and effectively communicate the concept through a video presentation. I also improved my skills in project development and learned how to explain the technical aspects of our solution in a clear and understandable way,” said Raveen.

He added that participating in the competition had been an invaluable learning experience that strengthened both his technical knowledge and communication skills.

“This competition added value to my course because it allowed me to apply my engineering knowledge to a real-life project.

“It also exceeded my expectations by improving technical skills, creativity and confidence in presenting project,” he said.

Encouraged by the experience, Raveen expressed his interest in participating in more engineering competitions in the future, believing such platforms provided valuable opportunities to apply classroom knowledge, develop new skills and transform innovative ideas into practical engineering solutions.

His success also reflected the strength of APU's research-driven engineering education, where students were encouraged to engage in innovation beyond the classroom and develop technologies with genuine societal value.

The recognition at VIC 2026 demonstrated how undergraduate research, when supported by strong academic mentorship and industry-relevant research, could produce innovations capable of competing successfully on the international stage.

As emerging technologies continued to shape the future of healthcare and sustainability, achievements such as Solarbeat highlighted the growing role of young engineers in addressing global challenges through creative thinking, interdisciplinary collaboration and technological innovation.



Raveen's accomplishment not only brought international recognition to APU but also underscored the University's commitment to nurturing future engineers who possessed the knowledge, skills and innovative mindset required to develop sustainable technologies that could improve lives and contribute meaningfully to society.

A proud achievement for both student and mentor.

May this recognition inspire even greater innovations in the future.

APU Secures MCMC Research Grants to Advance Malaysia's Digital Society

Two government-backed studies will examine children's cyberwellness and gig worker protection, reinforcing APU's role in policy-relevant research that supports national development.



Members of the APU research teams gather for a group photo following confirmation of the university's success in securing the MCMC Digital Society Research Grant (DSRG) and Digital Society Research Grant for Industry (DSRGX) 2026 Cycle 1. From left: Ms Hema Latha, Asst Prof Ir EUR ING Ts Dr Lau, Prof Ir EUR ING Ts Dr Vinesh, Assoc Prof Dr Thang, Asst Prof Ts Dr Vinesha and Mr Tan Wei Yu.

Asia Pacific University of Technology & Innovation (APU) has strengthened its contribution to Malaysia's digital society agenda after securing two research grants worth **RM20,000** from the **Malaysian Communications and Multimedia Commission (MCMC)**.

Announced in July 2026, the grants were awarded under **MCMC's Digital Society Research Grant (DSRG)** and **Digital Society Research Grant for Industry (DSRGX) 2026 Cycle 1**. The projects will be led by academics from APU's School of Technology and School of Engineering, supported by multidisciplinary researchers across the university.

Measuring the Impact of Internet Safety Education



Assoc Prof Dr Thang Ka Fei (centre), project lead of APU's MCMC-funded evaluation of Kempen Internet Selamat, with research team members Mr Tan Wei Yu (left) and Asst Prof Ts Dr Vinesha Selvarajah (right)..

The first project is led by Assoc Prof Dr Thang Ka Fei, Senior Head of APU's School of Technology. Under the Digital Citizenship & Cyberwellness (DCC-3) focus area, the study will evaluate Kempen Internet Selamat (KIS), MCMC's nationwide school-based campaign promoting safe and responsible online behavior among students.

Running from July 2026 to March 2027, the project adopts a mixed-methods, quasi-experimental and longitudinal design. It will track a cohort of school-going children in Negeri Sembilan, together with a matched control group, across three time points.

Joining Dr Thang are Asst Prof Ts Dr Vinesha Selvarajah of the School of Technology, who will serve as Digital Safety and Cyber Risk Content Specialist, and Mr Tan Wei Yu of the School of Psychology, who will lead the behavioral and educational psychology components.

Guided by the Theory of Planned Behaviour, the Ebbinghaus Forgetting Curve and Cognitive Load Theory, the research will assess cyberwellness through information processing, social reinforcement and applied cybersecurity competency.

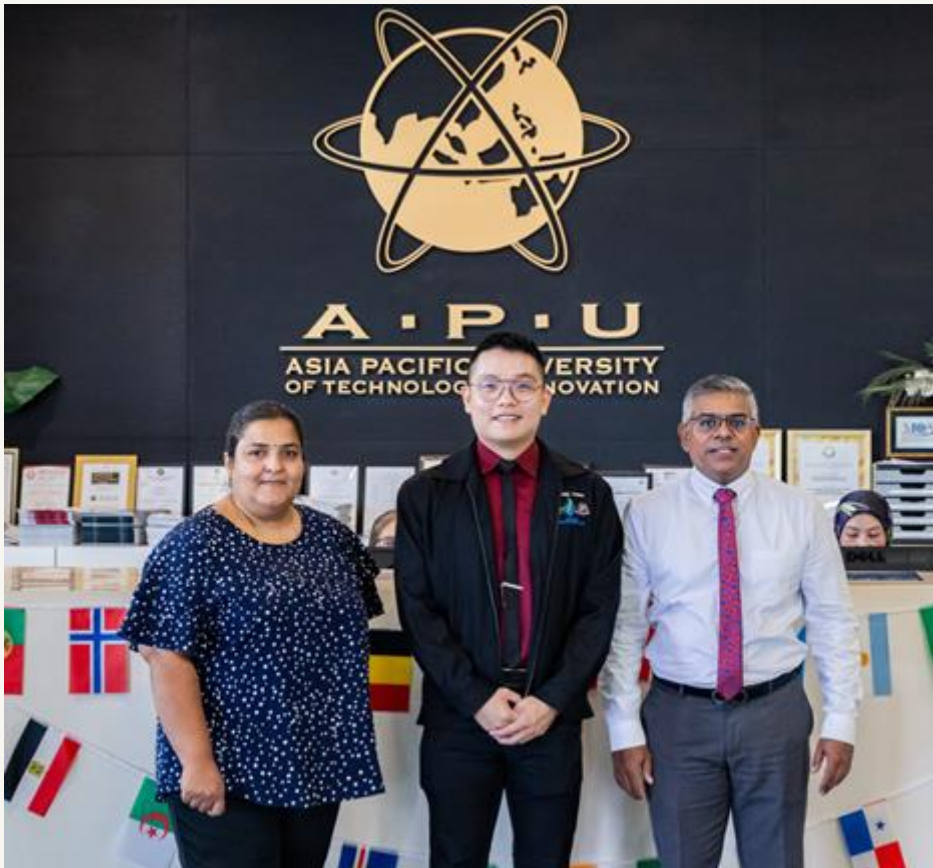
Rather than measuring awareness alone, the study will examine students' digital-safety knowledge, message retention, behavioral intentions and demonstrated safe-online practices. Data will be gathered through gamified assessments, scenario-based simulations and theory-driven surveys, supported by insights from teachers, parents and programme delivery partners.

The findings are expected to provide MCMC with its first structured longitudinal evidence on whether KIS produces measurable improvements in students' knowledge and behavior. The results may guide future refinements to the campaign's content, delivery and reinforcement strategies.

Advancing Fairness in the Gig Delivery Economy

The second project, titled **“Parcel Delivery Pricing and Worker Protection in the Gig Economy: Policy Implications”**, is led by **Asst Prof Ir EUR ING Ts Dr Lau Chee Yong**, Assistant Professor and Programme Leader of Computer Engineering at APU's School of Engineering, and Lead of the Visionary AI Studio.

Parked under the Future of Work (FW-1) focus area, the study also runs from July 2026 to March 2027. It builds on Dr Lau's MCMC-funded DSRG 2025 research, which assessed Malaysia's courier industry readiness for work-sharing models.



Asst Prof Ir EUR ING Ts Dr Lau Chee Yong (left), project lead of APU's MCMC-funded study on parcel delivery pricing and gig worker protection, with research team members Ms Hema Latha Krishna Nair (centre) and Prof Ir EUR ING Ts Dr Vinesh Thiruchelvam (right).

This new phase shifts the focus from operational efficiency to the pricing and compensation dynamics affecting gig delivery workers. It will examine how differences between traditional home-delivery pricing and subsidized platform pick-up services influence compliance with MCMC's non-mandatory parcel delivery pricing guidelines and affect courier compensation and welfare.

The mixed-methods study will combine surveys, semi-structured interviews and focus group discussions with courier companies and gig delivery workers. It will also use AI-based data interpolation techniques, including Gaussian Process Regression and multiple imputation, to reconstruct fragmented pricing and compensation data.

A supervised machine learning model will be developed to generate a Worker Vulnerability Index, predicting income precarity based on platform type, delivery mode and working conditions.

Dr Lau will be supported by Prof Ir EUR ING Ts Dr Vinesh Thiruchelvam, APU's Chief Innovation, Enterprise & Sustainability Officer, and Ms Hema Latha Krishna Nair, Senior Lecturer at the School of Computing and Head of the Asia Pacific Centre of Analytics (APCA).

Prof Vinesh will contribute expertise in technology-enabled logistics innovation and policy framework development, while Ms Hema will lead the survey design, statistical analysis and qualitative analysis of stakeholder interviews.

The findings are expected to support MCMC in developing fairer pricing guidelines and worker protection frameworks under the PAKEJ+ sustainability agenda for Malaysia's gig delivery economy.

Research that Supports National Development

“It is encouraging to see APU researchers recognized in two equally important areas under the DSRG and DSRGX 2026 Cycle 1 call. Dr Thang’s study examines whether digital safety campaigns truly influence children’s online behavior, while Dr Lau’s research addresses the welfare of gig workers in Malaysia’s digital economy,” said Prof Vinesh.

“Both projects reflect the rigorous, evidence-based research needed to strengthen MCMC’s programmes and policies. I am proud of APU’s research excellence and congratulate both teams on this achievement,” he added.

The grants expand APU’s portfolio of MCMC-funded research and reinforce its commitment to delivering policy-relevant recommendations that support Malaysia’s digital society, cyberwellness and future of work.

**Congratulations to the research
team on securing these
prestigious grants.**

APU Researchers Secure RM399,720 in Industry and International Research Grants

Seven APU researchers have secured funding from industry and international partners, reinforcing the University's growing research strength and its commitment to transforming academic expertise into solutions with real-world relevance and impact.

Asia Pacific University of Technology & Innovation (APU) has marked another encouraging research milestone, with **seven researchers** successfully securing funding through a series of industry and international grant programmes.

Collectively, the latest awards reflect the depth and diversity of research expertise within APU, while demonstrating the confidence that external organisations place in the University's academics and their ability to contribute meaningful solutions to contemporary challenges.

The newly secured grants span multiple disciplines and will support research activities that advance knowledge, strengthen industry-academia engagement and encourage greater knowledge transfer.

Industry Grants – Turning Academic Expertise into Industry Impact



They also create further opportunities for APU researchers to work alongside external partners, bringing academic capabilities closer to practical applications that can generate social and economic value.

A significant portion of the latest funding comes from industry and local organisations, with **RM369,220** secured across 11 grants.

Assistant Professor Ir EUR ING Ts Dr Lau Chee Yong secured three grants comprising **RM10,000 from MCMC, RM7,000 from JET Engineering Solutions Sdn Bhd** and **RM5,000 from Vitrox Technologies Sdn Bhd.**

Ir Ts Dr Denesh Sooriamoorthy secured **RM105,000 from Pixel Pine Sdn Bhd.**

Beyond their monetary value, these grants strengthen the bridge between academic research and industry needs. Such collaborations provide researchers with opportunities to apply their expertise in practical settings, while enabling industry partners to tap into academic knowledge, specialised skills and innovative thinking.

APU's research reach is also expanding internationally.

International collaboration plays an important role in strengthening research quality by encouraging the exchange of ideas, expertise and perspectives across borders.

Such partnerships also help position APU researchers within wider research networks and create opportunities for knowledge generated at the University to contribute to conversations and developments beyond Malaysia.

Together, the industry and international awards amount to **RM399,720**, representing another affirmative step in APU's pursuit of research excellence.

These latest successes underscore the strength of APU academics and the University's dedication to producing high-quality research that addresses societal needs, supports economic development and contributes to global knowledge.

APU congratulates all grant recipients and looks forward to the research outcomes, new partnerships and meaningful impact that will emerge from their work.

Congratulations on this impressive accomplishment.

May these grants lead to even greater discoveries and collaborations in the future.

Advancing Professional Engineering Excellence in Academia: A Contribution to Engineering Education and Institutional Development



Ir. Dr. Wong Siew Fan (APU) with Mr. Teoh Chi Yang during the IEM PI 2.0 interview session, where professional registration, engineering education, and the development of future engineering professionals were discussed..

The engineering profession plays a critical role in shaping the nation's technological progress, industrial innovation, and sustainable development. Within higher education institutions, engineering academics serve not only as educators and researchers but also as role models who cultivate professional competencies and inspire future generations of engineers.

Recently, **Ir. Dr. Wong Siew Fan**, Senior Lecturer at the School of Engineering, Asia Pacific University of Technology & Innovation (APU), was invited by the Institution of Engineers Malaysia (IEM) to participate in a Professional Interview (PI) 2.0 sharing session.

The interview, conducted by **Mr. Teoh Chi Yang**, highlighted the significance of professional registration, lifelong learning, and the role of academics in strengthening the engineering profession.

While the discussion reflected on **Ir. Dr. Wong's** journey towards obtaining Professional Engineer (PE) status, it also underscored broader contributions to engineering education, institutional development, student mentoring, and professional engagement that align closely with APU's commitment to academic and professional excellence.

Strengthening Professional Standards in Engineering Education

As a Professional Engineer in Chemical Engineering, **Ir. Dr. Wong** brings together academic expertise, industrial collaboration experience, and professional practice. With over a decade of involvement in teaching, research, postgraduate supervision, and industry-linked projects, she has consistently advocated for the integration of professional engineering competencies within engineering education.

Her successful completion of the IEM Professional Interview (PI) 2.0 pathway demonstrates the importance of ensuring that engineering academics remain actively connected to professional practice. Professional registration provides an additional layer of credibility and assures stakeholders that engineering educators possess competencies that have been independently assessed and recognized by the profession.

For institutions offering accredited engineering programmes, professionally registered academic staff contribute significantly towards maintaining professional standards and supporting Engineering Accreditation Council (EAC) requirements. Such achievements strengthen institutional capacity and enhance the quality assurance framework underpinning engineering education.

Enhancing Student Mentorship and Graduate Readiness

One of the key themes highlighted during the interview was the importance of guiding students beyond technical knowledge and preparing them for professional engineering careers.

Having successfully completed the Professional Interview process herself, **Ir. Dr. Wong** is now able to provide first-hand guidance and practical insights to students aspiring to become Graduate Engineers and **Professional Engineers** in the future.

Her experience enables her to bridge the gap between classroom learning and professional engineering practice, helping students better understand the competencies, responsibilities, and ethical expectations associated with the profession.

Through teaching, project supervision, research activities, and student mentoring, she continues to encourage students to view professional registration as an integral component of their long-term career development rather than an achievement to be pursued only later in their careers.



Ir. Dr. Wong Siew Fan with engineering students at APU. As a Professional Engineer and academic, she continues to mentor and inspire future engineers while promoting professional competency development and industry readiness among graduates

Promoting a Culture of Lifelong Learning and Professional Development

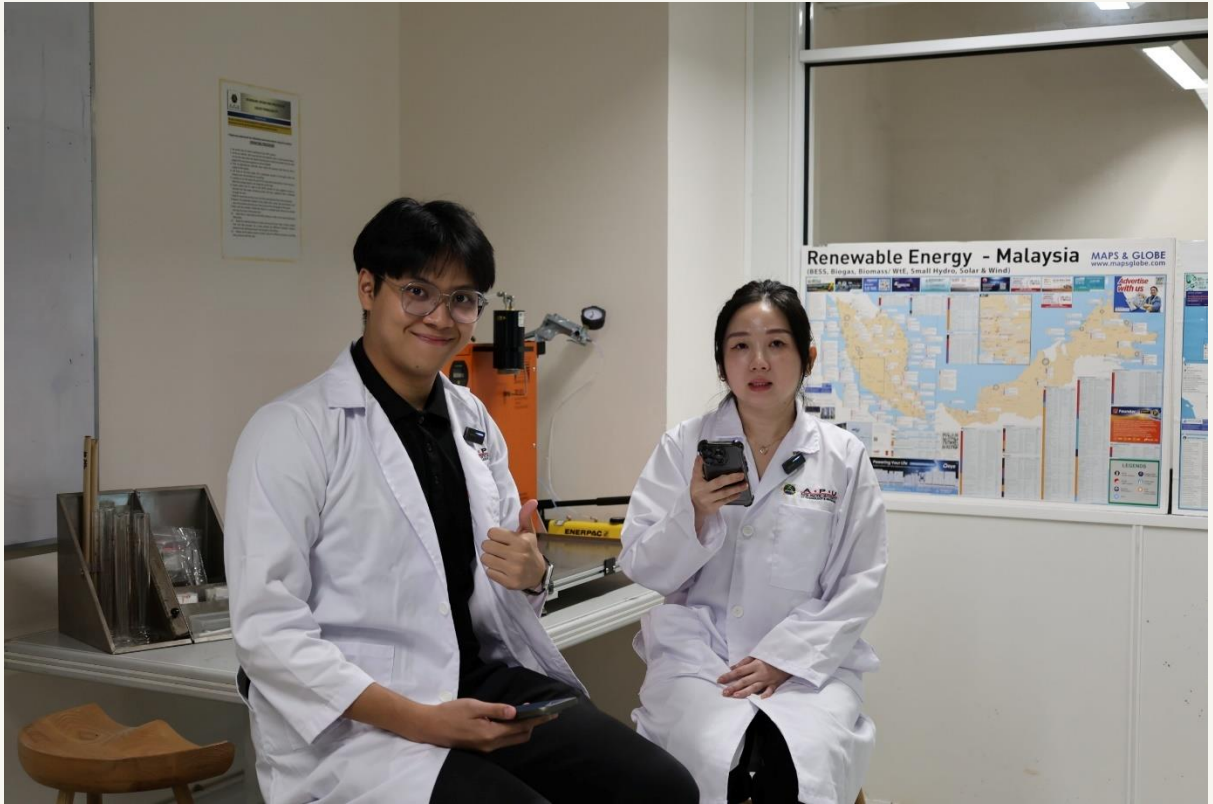
A notable message emerging from the interview was the value of continuous professional growth.

Reflecting on her PI 2.0 journey, **Ir. Dr. Wong** shared that balancing professional development alongside academic responsibilities and family commitments required discipline, perseverance, and consistency. Her experience demonstrated that professional advancement can be achieved even amidst demanding schedules and competing priorities.

By openly sharing these experiences through an IEM platform, she contributes to promoting a culture of lifelong learning among both engineering academics and practicing engineers.

Such advocacy supports efforts to encourage greater participation in professional registration pathways and continuous competency development across the engineering community.

The interview also served as an encouragement to young engineers, particularly women engineers, to pursue professional excellence without waiting for perfect circumstances.



Ir. Dr. Wong Siew Fan participating in the IEM PI 2.0 interview session. The engagement provided a platform to share perspectives on professional registration, engineering education, student development, and the role of higher education institutions in nurturing future Professional Engineers.

Strengthening Academia–Profession Linkages

Universities play a critical role in developing engineers who are industry-ready and professionally competent. Active engagement with professional bodies such as IEM helps strengthen the link between academia and professional practice.

Ir. Dr. Wong's participation in the IEM interview reflects ongoing efforts to engage with national professional institutions and contribute to broader discussions on engineering competency development, professional registration, and engineering education.

Through participation in professional outreach initiatives organised by IEM, Ir. Dr. Wong contributes to enhancing APU's visibility within the national engineering community while strengthening engagement between academia, industry, and professional institutions.

Such engagements help reinforce the university's commitment to professional excellence and foster stronger collaborations that benefit both students and the wider engineering profession.

By representing APU in professional forums and knowledge-sharing initiatives, academic staff contribute to the university's reputation as an institution committed to producing graduates who are technically competent, professionally prepared, and aligned with industry expectations.

Supporting Institutional Development Through Professional Leadership

The recognition of academic staff by professional institutions contributes directly to institutional development. Professional achievements such as attaining Professional Engineer status and participating in national-level professional engagement activities reflect positively on the university's academic standing and commitment to excellence.

The IEM PI 2.0 interview provided an opportunity for **Ir. Dr. Wong** to showcase not only her professional journey but also the importance of embedding professional engineering culture within higher education.\

Through her roles as educator, researcher, mentor, and Professional Engineer, she continues to contribute towards strengthening engineering education, supporting accreditation excellence, enhancing student professional development, and promoting greater engagement between academia and the engineering profession.

The participation of **Ir. Dr. Wong Siew Fan** in the **IEM PI 2.0** interview reflects APU's commitment to professional excellence, engineering education quality, and engagement with the national engineering profession.

It reflects a commitment to advancing professional engineering standards, strengthening engineering education, and fostering a culture of lifelong learning within the academic community.

By sharing her experiences with the wider engineering fraternity, Ir. Dr. Wong contributes to the promotion of professional registration, inspires future engineers to pursue excellence, and reinforces the important role universities play in developing professionally competent engineers for the nation.

As institutions continue to respond to the evolving demands of the engineering profession, such professional engagement initiatives remain essential in strengthening the connection between engineering education, professional practice, and institutional excellence.

**Congratulations to Ir. Dr. Wong
Siew Fan on this outstanding
accomplishment.
Wishing you continued success in
shaping future engineering talent.**

SOE's Ir. Ts. Dr. Reena Sri Selvarajan Recognized for Advancing Engineering Research as External Judge at EURECA 2026

The School of Engineering (SOE) proudly recognizes the contribution of **Ir. Ts. Dr. Reena Sri Selvarajan**, Senior Lecturer from the School of Engineering, who was invited to serve as an External Judge at the **EURECA 2026 International Engineering Research Conference**, hosted by Taylor's University. As an **External Judge** for the Engineering Poster Competition, Dr. Reena evaluated undergraduate research projects in the Electrical and Electronics Engineering discipline.

The conference brought together aspiring researchers who presented innovative engineering solutions addressing contemporary technological and societal challenges.

Throughout the evaluation process, **Dr. Reena** assessed each project based on its research quality, technical rigor, innovation, methodology, and potential for real-world implementation. The judging process emphasized not only scientific excellence but also the ability of the proposed solutions to create meaningful and sustainable impact for society.

Reflecting on the experience, **Dr. Reena** expressed her appreciation for the quality of the students' work and their commitment to solving practical engineering problems.

"It was inspiring to witness the creativity, dedication, and research maturity demonstrated by the students. Many projects showed strong technical foundations with promising potential for future development. Ultimately, the true impact of research begins when its outcomes successfully reach and benefit the end user."

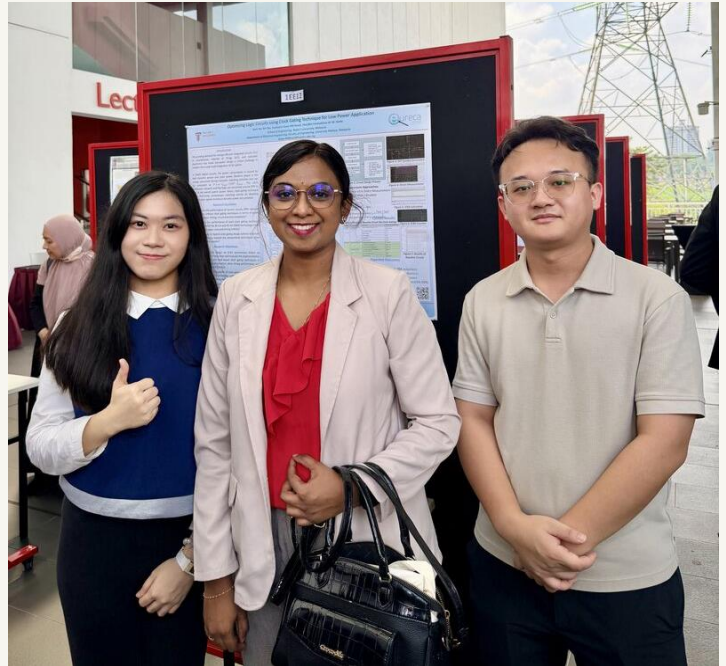
Beyond the formal assessment, **Dr. Reena** engaged with participating students by sharing constructive feedback and professional perspectives on research translation, innovation pathways, and the importance of developing solutions with practical relevance.

Her interactions encouraged students to think beyond academic achievements and consider how their research can contribute to industry, society, and future technological advancement.

Dr. Reena's appointment as an External Judge reflects the continued recognition of APU's academic expertise within the engineering community and reinforces the university's commitment to promoting research excellence, innovation, and industry engagement.

Such collaborations strengthen the connection between higher education institutions while fostering a culture of high-quality engineering research and innovation among the next generation of engineers.

Beyond the formal assessment, **Dr. Reena** engaged with participating students by sharing constructive feedback and professional perspectives on research translation, innovation pathways, and the importance of developing solutions with practical relevance.



**Heartiest congratulations to Ir. Ts.
Dr. Reena Sri Selvarajan for
representing APU.**

Ir. Dr. Harvin Kaur Appointed as Energy Education Chairperson I for SPE Kuala Lumpur



Ir. Eur Ing. Ts. Dr. Harvin Kaur Gurchran Singh has been appointed to serve another term as the **Energy Education Chairperson I** for the **Society of Petroleum Engineers Kuala Lumpur Section (SPE KL)**. The appointment reflects her continued commitment to advancing energy education, strengthening industry–academia collaboration and inspiring the next generation of energy professionals.

Having previously served in this leadership role, **Ir. Dr. Harvin Kaur** has contributed to the development and delivery of educational initiatives aimed at increasing awareness of the oil, gas and broader energy industry. Her work has focused on connecting students, educators, universities and industry professionals through programmes that encourage technical learning, career exploration and greater understanding of the evolving energy landscape.

As **Energy Education Chairperson**, she will continue to lead and support initiatives that introduce young people to science, technology, engineering and mathematics within the context of energy. These activities are expected to include educational workshops, career engagement sessions, school outreach programmes, university collaborations and industry-led learning opportunities.

A key focus for the upcoming term will be preparing students for an energy sector that is becoming increasingly digital, innovative and sustainability-driven. Educational initiatives will highlight both the continuing importance of oil and gas and the growing role of renewable energy, decarbonization, digital technologies, artificial intelligence and responsible resource management.

Ir. Dr. Harvin Kaur's professional and academic background provides a strong foundation for this role. As the Programme Leader for Petroleum Engineering at the Asia Pacific University of Technology & Innovation (APU), she is actively involved in curriculum development, student mentorship, professional certification, research and industry engagement. Her experience enables her to connect academic knowledge with practical industry expectations and emerging workforce needs.

Her leadership also extends to mentoring students through technical competitions, professional development programmes and industry-focused activities. Through these initiatives, she has consistently encouraged students to develop not only technical knowledge but also communication, teamwork, critical thinking, leadership and problem-solving skills.

The Energy Education portfolio plays an important role in improving public understanding of the energy sector and creating meaningful engagement between the industry and younger generations. It also supports the development of a diverse and capable future workforce that can respond to global energy challenges with technical competence, creativity and social responsibility.



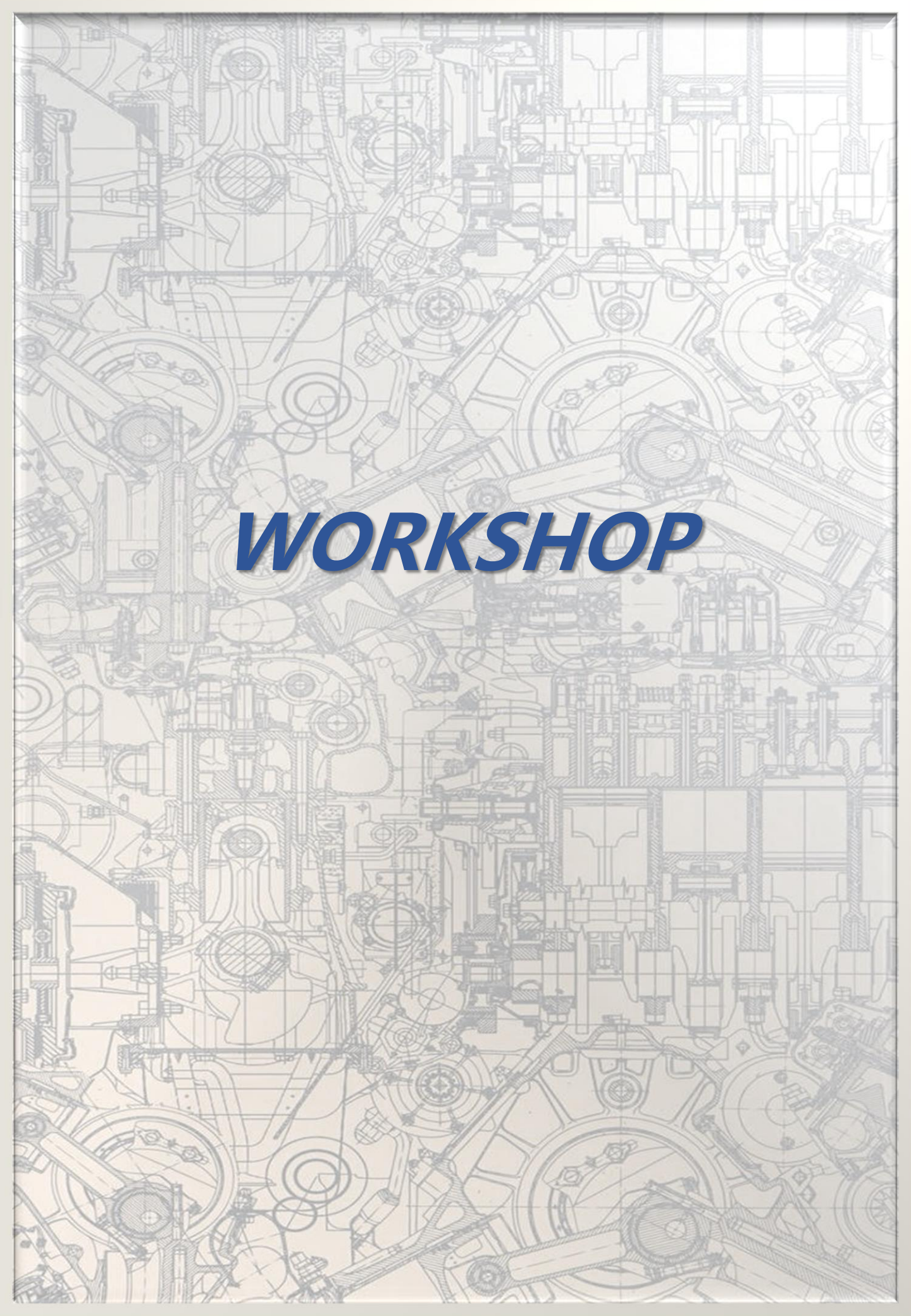
During the next term, **Ir. Dr. Harvin Kaur** aims to expand the reach and impact of SPE KL's energy education initiatives by creating more opportunities for students to interact with industry professionals and gain early exposure to energy-related careers.

The programmes will also encourage greater participation among young people from different educational backgrounds and communities.

Her appointment for another term reflects the confidence placed in her leadership and her sustained dedication to energy education.

Through SPE Kuala Lumpur, **Ir. Dr. Harvin Kaur** will continue to nurture curiosity, promote technical learning and empower young people to play an active role in shaping a more innovative, inclusive and sustainable energy future.

**Heartiest congratulations on
being entrusted with this
important leadership role,
Ir Dr Harvin Kaur!**

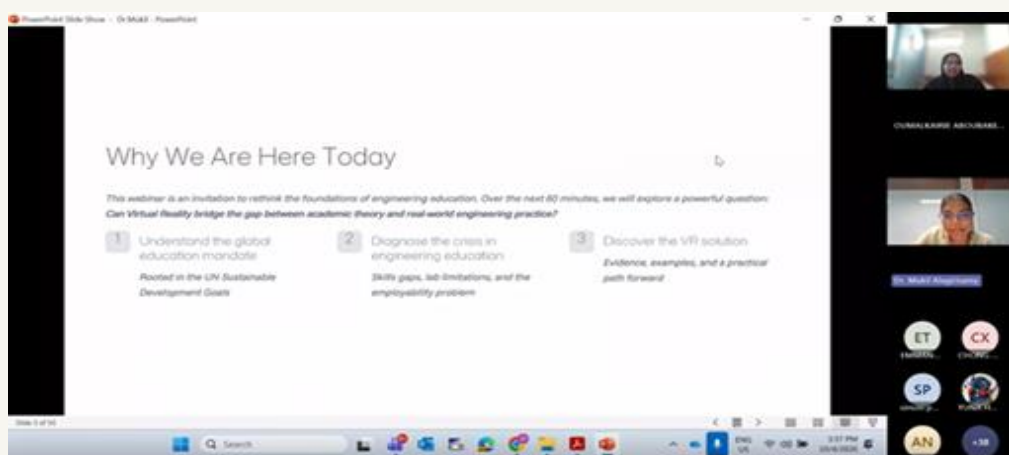
The background of the entire page is a detailed, light-colored technical drawing of an engine block, showing various internal components like pistons, valves, and connecting rods. The drawing is overlaid with a fine grid pattern.

WORKSHOP

Beyond Traditional Labs: Exploring Virtual Reality For Engineering Skills And Employability At Apu

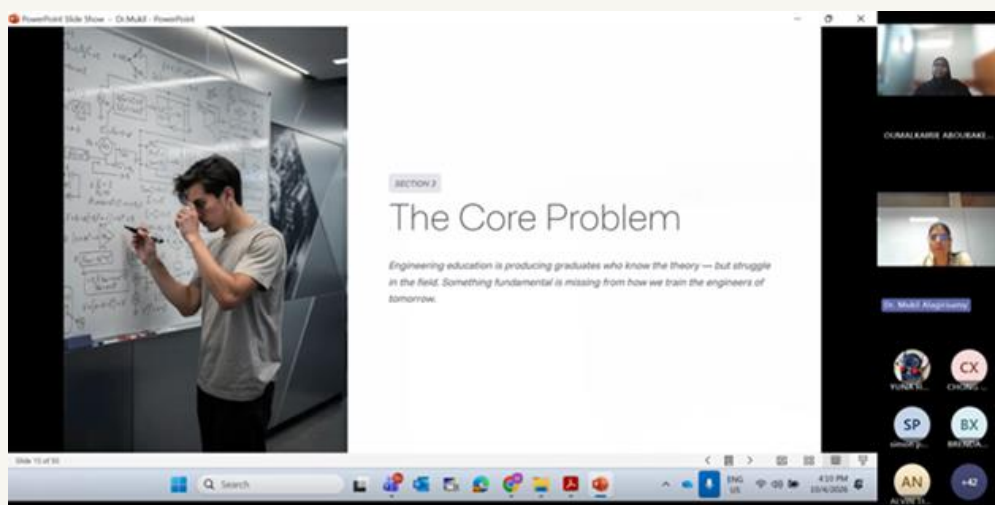
Asia Pacific University of Technology & Innovation (APU) recently hosted an insightful webinar titled “**Beyond Traditional Labs: Virtual Reality for Engineering Skills and Employability**” on 10th April 2026. The session featured **Dr. Mukil Alagirisamy** as the guest speaker and aimed to discuss current employment trends and the challenges faced by engineering students, particularly the gap between theoretical learning in universities and the practical skills expected by industry.

The webinar also highlighted the importance of Sustainable Development Goal 4.4, which focuses on equipping learners with relevant technical and vocational skills for employment and explored how innovative tools such as Virtual Reality (VR) can help students build practical competencies to meet industry requirements. The session was mainly targeted at university students from APU as well as participants from other universities who joined the webinar virtually.





During the session, Dr. Mukil explained how the industrial landscape has changed significantly with the rise of Industry 4.0 technologies such as artificial intelligence, automation, robotics, and immersive systems. Despite these changes, many universities still rely heavily on classroom-based teaching, where theory is given greater emphasis than practical exposure. She highlighted that in many cases, engineering education remains largely theoretical, with about 70% focused on theory and only 30% on practical learning. This imbalance can make it difficult for students to confidently apply their knowledge in professional environments after graduation.



Students Powering Students Through Hands-On AI and Robotics Innovation at APU

Peer-led APCORE workshops at APU immerse students in real-world AI and modular robotics applications, proving that practical engineering innovation begins long before graduation.



A wide shot of 32 students and APCORE trainers during the Applied AI Workshop on 12 March 2026

Fully driven by a peer-led support system where students guide fellow students, the **Asia Pacific Centre of Robotics Engineering (APCORE)** at the Asia Pacific University of Technology & Innovation (APU) recently transformed the traditional laboratory environment into a lively ecosystem of experimentation, collaboration, and innovation.

Held on March 12 and 14 at APU, APCORE's two specialised technical workshops brought together aspiring innovators from diverse academic backgrounds for an immersive journey into the worlds of artificial intelligence and modular robotics. More than merely introducing technical concepts, the back-to-back sessions were carefully designed to bridge the gap between complex coding theories and meaningful real-world applications.

At the heart of both workshops was a powerful message: **understanding how machines think is just as important as understanding why they are built.**

The first session, titled **Applied AI Workshop — Empowering Everyday Innovation**, attracted 32 highly engaged participants eager to explore the practical applications of computer vision and machine learning.

The workshop was led by Ng Soon Teck, Lead Trainer and a Bachelor of Computer Engineering with Honours student at APU, together with Thasne Rames, Lead Coordinator and a Bachelor of Engineering in Mechatronics Engineering with Honours student at APU.

Using the renowned YOLO (You Only Look Once) object detection model, participants were introduced to a different way of approaching computer vision technology. Rather than analyzing images in stages, the YOLO model processes an entire image in a single pass, enabling remarkably fast and accurate object detection capabilities.

Instead of passively observing demonstrations, participants actively configured their own local development environments using Visual Studio Code and laptop cameras to experience the technology first-hand.

This practical approach encouraged students to engage directly with the mechanics behind AI systems while building confidence in deploying machine learning applications independently.

The workshop culminated in APCORE's "**AI in Daily Life**" challenge, where participants worked in teams to design real-time object detection applications aimed at solving everyday problems.

Through this challenge, students gained valuable exposure to the complete AI development cycle, from training and testing models to implementing functional applications in real-world scenarios.



(From left) Team Milo's lead, Angel Phumelela Mngomezulu, receives the Best AI Implementation Prize certificate from Lead Trainer Ng Soon Teck, Lead Coordinator Thasne Rames, and Head of APCORE Ts Suresh Gobee

Demonstrating both creativity and technical capability, **“Team Milo”**, comprising **Angel Phumelela Mngomezulu, Sarvena Jeyantan, Ranjana Murugappan, and Heng Chee Sheng**, alongside **“Team Kumis”**, represented by **Ashraf Omar, Luumuno Halwampa, Kamil Nazirov, and Iskender Sakhalinbekov**, emerged as winners of the Best AI Implementation Prize.

Two days later, APCORE shifted gears from artificial intelligence to robotics with the **SMORPHI Robot Workshop**, which welcomed 27 participants from various fields of study into the rapidly evolving world of modular robotics.

Unlike traditional fixed-frame robots, the SMORPHI platform enables users to reconfigure robotic structures, challenging participants to rethink the relationship between hardware geometry and software logic. This unique flexibility encouraged students to understand that robotics is not simply about assembling machines, but about designing adaptive systems capable of responding intelligently to changing environments.



Students and trainers pose for a group photo around a maze with their SMORPHI robots.

From 10 a.m. to 3 p.m., the lab buzzed with experimentation as participants programmed robots to navigate maze challenges autonomously. Rather than relying on simple directional commands such as “forward” or “left”, students were tasked with building systems capable of interpreting sensor data and making decisions in real-time.

The success of the workshop relied heavily on the dedication of APCORE's student leaders and volunteers. Lead Coordinator Thasne Rames and Lead Trainer Harindraa Shanmugam, a Bachelor of Engineering in Mechatronics Engineering with Honours student at APU, together with a committed student support crew, worked closely with participants throughout the sessions to ensure no one was left behind.

This “for students, by students” approach played a vital role in making highly technical subjects such as machine learning, robotics, and kinematics feel approachable, practical, and grounded in real-world applications.



Participants of the SMORPHI Robot Workshop pose for a group photo with the student crew-cum-coordinators and winners, capturing the spirit of collaboration and achievement alongside their SMORPHI bots.

Reflecting on the impact of both workshops, Ts Suresh Gobee, Head of APCORE, reaffirmed the centre's broader educational mission.

“We want our students to be more than just users of technology; we want them to be the architects,” he said.

“These workshops, under the guidance of Dr Adeline Sneha John Chrisastum, our Senior Lecturer at the School of Engineering, have proved that when you give students the right tools and a little bit of guidance, they can solve real-world problems before they even graduate,” he added.

As the workshops concluded, the vibrant energy across the laboratory reflected the effectiveness of experiential learning and peer collaboration.

Through initiatives such as these, APCORE continues to demonstrate that at APU, engineering is far more than a classroom discipline — it is a hands-on journey where students are empowered to innovate, experiment, and shape the technologies of tomorrow.

APU Students build Strategic Innovation Skills at Shell NXplorers Pro Workshop



Recently, the Asia Pacific Centre of Robotics Engineering (APCORE) at Asia Pacific University of Technology & Innovation (APU), in collaboration with Shell Malaysia, successfully organised the NXplorers Pro Workshop, under the #ShellSelamatSampai Varsity Challenge 2026.

Coordinated by **Ts Suresh Gobe** (Senior Lecturer and Head of APCORE, School of Engineering at APU), and facilitated by Ms Zairustina Putit and Ms Khau Yuen Yuen, trainers from Shell Malaysia, the workshop brought together selected student innovators from various engineering and technology disciplines to explore strategic innovation frameworks aimed at addressing Malaysia's road safety challenges.

Exploring Complex Road Safety Challenges through Systems thinking

The workshop began with the “Explore” phase, where students were introduced to “Systems thinking” as a framework for understanding road safety beyond isolated incidents.

Students learned to analyse the interconnected relationship between infrastructure, technology, human behavior, and environmental factors contributing to road accidents.

Through guided exercises, teams developed structured problem statements that balanced the issue at hand, the intended outcome, and the target beneficiaries of their proposed solutions.



One of the key activities during this phase was the Connection Circle exercise, where students mapped causal relationships and identified feedback loops influencing road safety challenges.

The activity encouraged students to move beyond surface-level assumptions and focus on identifying root causes that could lead to more sustainable interventions.

Developing future-ready Solutions through Scenario planning



Building on their initial analysis, students progressed into the “Create” stage, where they were introduced to “Scenario planning” as a key method for developing realistic and future-oriented solutions.

Through this approach, teams examined historical trends and explored possible future scenarios in transportation and road safety, considering how social, economic, and technological shifts could influence outcomes over time.

This enabled students to better anticipate uncertainty and design solutions that remain relevant under different future conditions.

By engaging in scenario-based thinking, students strengthened their ability to evaluate how their ideas would perform across multiple possible futures, enhancing both the adaptability and long-term viability of their proposed solutions.

Strengthening Communication and Impact through Theory of change

The final stage of the workshop focused on “Theory of change,” guiding students to transform ideas into structured, impact-driven proposals through clear and strategic communication.



Students were introduced to the Persuasion Pyramid framework as a complementary tool, helping teams articulate their “Theory of change” by connecting factual evidence, human-centred storytelling, concise elevator pitches, and memorable soundbites into a coherent narrative of impact.

To further strengthen collaboration and teamwork, students engaged in interactive activities such as the Helium Stick icebreaker and team dynamics roleplay exercises.

These activities reinforced the importance of communication, coordination, and adaptability when working in multidisciplinary teams under time constraints, ultimately supporting students in clearly mapping how their ideas translate into real-world outcomes.

Turning Experience into Inspiration



Midway through the workshop, students engaged in a peer mentorship sharing session led by **Thiriidev Kumar Murlidaran**, a Mechatronic Engineering student and Interim President of APCORE at APU.

In 2024, Thiriidev's team achieved First Runner-Up in the #ShellSelamatSampai Varsity Challenge 2024, marking a significant accomplishment in the national competition through their strong performance, innovative problem-solving approach, and well-executed final pitch.

Drawing from his experience in the competition, he shared his personal journey and unpacked the practical strategies that contributed to his team's national-level success during the workshop.

This included a structured “success blueprint” covering idea development, problem framing, teamwork, and effective preparation for high-stakes pitching environments.

The session also featured an interactive Q&A segment, where his peer's sought advice on refining their ideas and navigating competition challenges.

His sharing provided his peers with clearer direction, renewed confidence, and practical insights as they prepare for the upcoming #ShellSelamatSampai Varsity Challenge 2026.

Shaping the future of Innovation at APU

The workshop served as a transformative platform that strengthened students' understanding of structured innovation, collaborative problem-solving, and real-world application of strategic frameworks in addressing road safety challenges.

Ts Suresh highlighted that the workshop played a vital role in shaping a strong pipeline of student innovators equipped to compete at a national level, while applying global methodologies to local challenges.

“The workshop has successfully laid the foundations for our next generation of innovators, directly contributing to stronger student engagement and the successful submission of five teams for the upcoming #ShellSelamatSampai Varsity Challenge 2026, reflecting the growing confidence, readiness, and enthusiasm of the students to apply structured innovation frameworks in tackling real-world road safety challenges.”

APU Empowers Staff with Life-Saving First Aid Skills

CPR, AED, and injury management, and participants reported increased confidence in handling emergencies.



It was essential for technicians and lab staff to be trained in first aid at the workplace, as they often worked in environments where accidents could occur suddenly and without warning.

In such situations, the first few minutes following an incident were often critical and could significantly influence the outcome.

In laboratories and technical workplaces, staff were regularly exposed to chemicals, sharp instruments, electrical equipment, heat sources, and heavy machinery.

Despite strict safety procedures being in place, incidents such as cuts, burns, fainting, chemical splashes, and electrical shocks could still occur. With proper first aid training, staff were able to respond immediately rather than waiting for medical assistance to arrive.



Trainers from St. John Ambulance of Malaysia conducted the First Aid Workshop, providing participants with hands-on training in essential emergency response skills.

Another crucial factor was time. In emergency situations, ambulance services or professional medical support might not have been able to reach the site immediately.

A trained technician or lab staff member could stabilize the situation by stopping bleeding, flushing chemical splashes from the eyes, or assisting an unconscious casualty until further medical treatment was provided.

Such timely intervention often prevented minor injuries from escalating into serious conditions.

Recognizing the importance of preparedness, Asia Pacific University of Technology & Innovation (APU) organised a First Aid at Workplace Workshop on 18 to 19 June 2026 in collaboration with St. John Ambulance of Malaysia.



Participants engaging in hands-on practical training sessions, applying essential first aid techniques under the guidance of trainers from St. John Ambulance of Malaysia.

The training was conducted by three experienced instructors from St. John Ambulance of Malaysia: Mr Wong Sin Jie, Mr Duncan Oh Yeok Hwa, and Ms Chew Hoong Ling.

A total of 12 participants from various departments, including the School of Engineering (SoE), Center of Innovation and Entrepreneurship, School of Architecture and Built Environment (SABE), Centre of Technology and Innovation (CTI), Corporate Training, and the School of Media, Arts and Design (SoMAD), took part in the two-day workshop.

The participants included **Mr Prathap Appakutty, Mr Zulhairi Sahari, Mr Nor Azwan Othman, Mr Muhammad Safri Basruddin**, Mr Mohamad Hafiz Aziz, Dr Beh Ching Yew, Mr Reshiwaran Jegatheswaran, Dr Imran Mahalil, Mr Hasan Akram Abdullah Zaid, Mr Ahmad Muizuddin Mohd Yaacob, Ms Sharmila Sooriyamurthi, and Mr Mohd Nor Zaidi Othman.

The workshop covered a comprehensive range of topics over two days. On the first day, participants were introduced to St. John Ambulance of Malaysia, first aid priorities, loss of consciousness, recovery position (skill session), respiratory problems, choking (skill session), wounds and bleeding, shock, dressing and bandaging (skill session), cardiopulmonary resuscitation (CPR) (skill session), and an introduction to the Automated External Defibrillator (AED).



Participants learning the correct bandaging and knot-tying techniques during the practical session, enhancing their first aid skills and confidence in responding to emergencies

On the second day, the training focused on medical emergencies, bone and spinal injuries, soft tissue injuries, fracture management (skill session), lifting and handling of casualties (skill session), burns and scalds, poisoning, scenario-based practice, and final assessment, which included both theory and practical components.

The theoretical segment also covered basic human anatomy in relation to CPR and AED, choking management, and CPR and AED techniques for adults (single-rescuer and two-rescuer scenarios), as well as choking management for both adults and children.

Participants shared that the workshop significantly improved their confidence in handling emergencies.



Trainers from St. John Ambulance of Malaysia demonstrating essential first aid techniques during the workshop, helping participants build confidence in handling emergency situations.

Mr Muhammad Safri Basruddin said, *“The training made me realise how quickly a simple incident can become serious. I now feel more confident to act immediately in an emergency rather than panic.”*

Dr Beh Ching Yew added, *“The hands-on CPR and AED sessions were particularly valuable. It was a practical experience that every staff member should have.”*

Ms Sharmila Sooriyamurthi reflected, *“The workshop was very engaging and well-structured. It gave me a clear understanding of how to respond effectively in different emergency situations.”*



Participants demonstrated the first aid techniques learned during the workshop, building practical skills and confidence in responding to emergency situations.

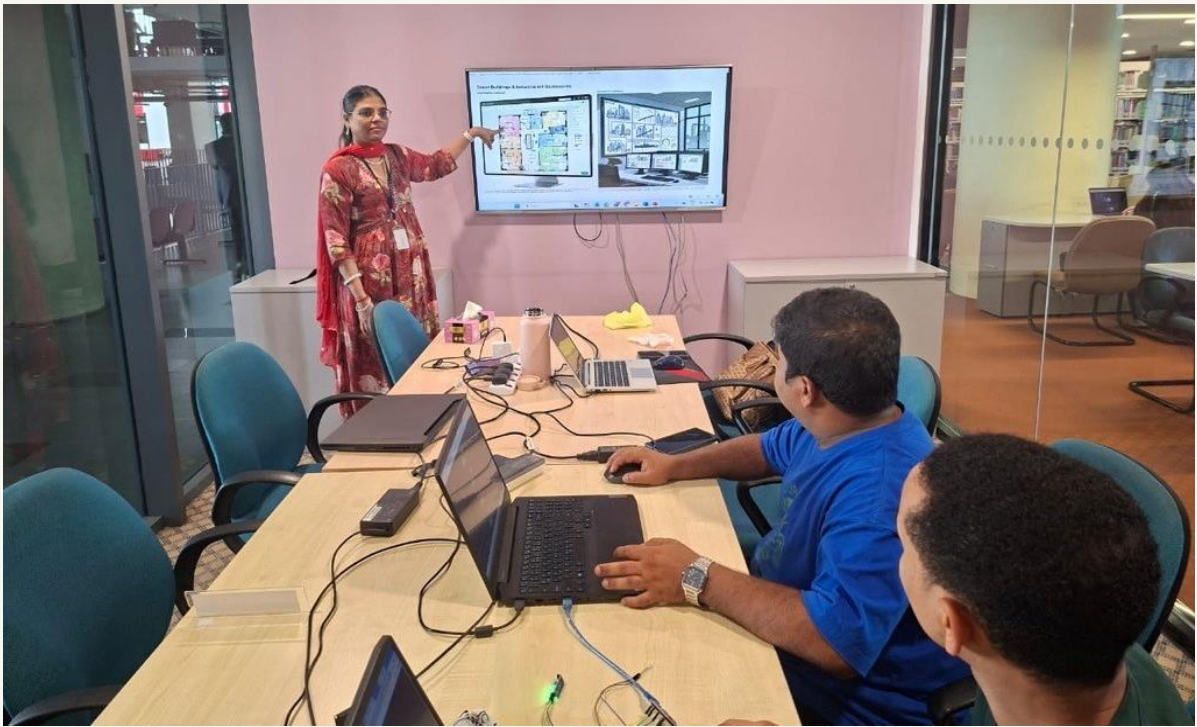
From Sensor to Dashboard: Hands-On IoT Training at APU

Two engineers from Oman spent the closing days of an IoT training programme at the Asia Pacific University (APU) library, working through the part where a microcontroller stops being an isolated board and starts behaving like a connected system.

Khamis Alzuhabi and Mubarak Alshaqsi attended Days 4 and 5 of the IoT Monitoring and Control System programme on 25 and 26 June, delivered by Dr Mukil Alagirisamy.

The earlier days had covered the groundwork: electricity and electronics fundamentals, semiconductors and microcontrollers, then sensors, actuators and data acquisition. These two days moved up the stack. Day 4 dealt with how devices talk to each other. Day 5 dealt with what happens to the data once it leaves the device.

Both ran as a workshop rather than a lecture, with laptops open, an ESP32 and a breadboard on the desk, and a broker running quietly in the background while the slides moved on.



Dr Mukil Alagirisamy with participants Khamis Alzuhabi and Mubarak Alshaqsi walking through smart building and industrial IoT dashboard layouts.

Day 4: Protocols and Networking

The session opened with IoT architecture: the perception, network, processing and application layers, and where edge, fog and cloud processing each earn their place. From there it moved through the wireless options that get used in the field. Wi-Fi where bandwidth is needed and the device is mains powered.

BLE for wearables running months on a coin cell. Zigbee for self-healing mesh networks inside buildings. LoRaWAN for sensors scattered across kilometres of open ground. Networking fundamentals followed, covering IP addressing, TCP against UDP, ports and sockets, and the common topologies.

The centerpiece was MQTT. Publish and subscribe instead of request and response, topic hierarchies with wildcards, the three QoS levels, retained messages, and the Last Will and Testament that lets a broker announce a device has dropped off. The hands-on work put that to use straight away: bringing the ESP32 onto a local Wi-Fi network, then configuring a broker and publishing sensor data from the board. The day closed by placing MQTT next to HTTP and handing over a decision framework rather than a rule, then testing it with a scenario exercise where the participants had to pick a protocol and a topology for three different real-world deployments and justify each choice.



Dr Mukil demonstrating on the hardware and Software Interface



The ESP32 and breadboard setup at the participants' workstations.

Day 5: Cloud, Dashboards and Security

Day 5 picked up where the data leaves the gateway. The participants compared platforms including Adafruit IO, ThingsBoard, AWS IoT Core and Blynk, weighing self-hosting against a managed service. Data management covered the split between telemetry, device attributes and metadata, and why time-series databases suit IoT workloads.

Dashboard design was treated as a discipline in its own right: match the widget to the decision, keep colour meaning consistent, label units, and put alarms where the eye lands first. The day ended on edge-to-cloud security, from TLS on port 8883 instead of plain 1883, through access tokens and certificates, to a reminder that the Mirai botnet needed nothing cleverer than default passwords to recruit 600,000 devices.

The Project

The assessed project ran in two stages, and by the end both participants had a working IoT monitoring and control system rather than a folder of disconnected exercises.

The first stage was the build and the connection. They configured the ESP32 board, wired an IR obstacle sensor and an RGB LED, brought the board onto Wi-Fi, then set up a Blynk Cloud project with virtual datastreams and device authentication before confirming the board and the cloud were talking to each other.

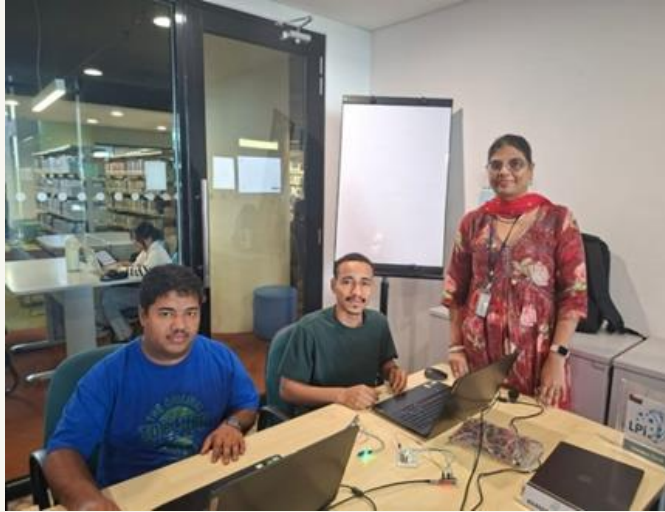
The second stage turned that connection into something usable. Live sensor readings going up as telemetry, a dashboard showing them, and control travelling the other way so the LED could be switched remotely from Blynk Cloud.

They then tested the full loop and validated that it held up in both directions. Both stages were marked on the working system rather than on written answers about one, and both participants came through comfortably.

Closing Thoughts

Two days is not long, but the scope was deliberate. Day 4 gave the participants the vocabulary and the judgement to pick a communication technology and defend the choice.

Day 5 gave them the platform side: where the data lives, how it is presented, and how the path is kept secure. By the end they had taken a reading from a sensor on a breadboard all the way to a live dashboard and sent a command back down the same path, which is what every IoT product does regardless of how many devices it eventually serves.



The sessions also made clear how much of IoT work is decision making rather than coding. Which protocol, where to process, which database, which widget. Almost every question raised over the two days had more than one defensible answer, and the useful skill turned out to be explaining why you chose yours.

Workshop on Code of Practice for TVET Programme Accreditation (COPTPA), 2u2i and Work-Based Learning (WBL)

On 30th April 2025, Asia Pacific University (APU) hosted a pivotal workshop organized by the **Malaysian Qualifications Agency Training Centre (MQATC)**. The event focused on the **Code of Practice for TVET Programme Accreditation (COPTPA)**, Occupational/Industry Standards and Practices (OISP), and the transformative educational models of 2u2i and Work-Based Learning (WBL).

This workshop served as a strategic platform for higher education providers (HEPs), industry stakeholders, and academic leaders to align Technical and Vocational Education and Training (TVET) programmes with national quality assurance standards and evolving industry expectations.

Representing APU's School of Engineering, **Ir. Dr. Hafizul Azizi bin Ismail @ Aziz** and **Ir. Dr. Mohamad Affan Mohd Noh** participated in the workshop, contributing insights on the integration of engineering education with industry-based learning models.

COPTPA is a comprehensive framework developed by the **Malaysian Qualifications Agency (MQA)** to ensure the quality, relevance, and consistency of **TVET programmes nationwide**.

It encompasses seven key areas:

1. Programme Development and Delivery
2. Assessment of Student Learning
3. Student Selection and Support Services
4. Teaching Staff
5. Educational Resources
6. Programme Management
7. Programme Monitoring, Review, and Continual Quality Improvement

The workshop began with an overview of these areas, emphasizing the importance of aligning curriculum design with industry standards, particularly the **National Occupational Skills Standards (NOSS)**.

Participants were briefed on the transition from COPTPA Edition 1 to Edition 2, which now covers MQF Levels 1 to 6, reflecting a broader and more inclusive scope.

A key highlight of the workshop was the exploration of the 2u2i mode of study, a hybrid educational model that combines two years of university-based learning (2u) with two years of industry-based training (2i).

This model is designed to produce graduates who are both academically proficient and practically skilled.

Variants of the 2u2i model include:

- 3u1i: Three years in university, one year in industry
- 2u1i: Two years in university, one year in industry
- 1½u1i: One and a half years in university, one year in industry

These flexible structures allow institutions to tailor programmes to discipline-specific needs and industry collaboration. The 2u2i model fosters experiential learning, enhances problem-solving abilities, and strengthens employability by immersing students in real-world environments.

Complementing the 2u2i model is Work-Based Learning (WBL), a pedagogical approach that integrates structured learning experiences within the workplace.

WBL formats discussed included:

- Internships
- Apprenticeships
- Job shadowing
- Clinical placements
- Cooperative education
- Mentoring and coaching

Two primary WBL delivery structures were emphasized:

- Block Release: Full-time industry training for a designated period (e.g., 3–6 months)
- Day Release: Alternating academic sessions with scheduled industry exposure

A key recommendation was that at least 20% of total programme credits should be delivered through WBL.

For instance, a diploma programme with 90 credits should allocate 18 credits to WBL, ensuring substantial hands-on experience.

Participants were introduced to the concept of **Effective Learning Time (ELT)**, used to calculate credits for WBL components.

ELT includes:

- Theory (dependent and independent learning)
- Industrial guidance
- Assessment (during and outside work)

The formula for credit calculation is:

$$\text{ELT} \div 40 = \text{Credit Hours}$$

For example, a course with 254.5 hours of ELT would yield approximately 6 credits, ensuring alignment with the Malaysian Qualifications Framework (MQF) and enabling transparent credit recognition.

The workshop emphasized the critical role of industry involvement in curriculum development, delivery, and assessment. Industry coaches must possess a minimum of five years of experience and contribute to evaluating students' performance in practical settings.

Assessment methods include:

- Observation
- Demonstration
- Portfolio reviews
- Oral interviews
- Practical tests

TVET providers are required to establish **Memoranda of Understanding (MoUs)** with industry partners, outlining roles, responsibilities, and collaboration mechanisms. These agreements ensure that programmes remain relevant and responsive to industry needs.

Effective management of 2u2i and WBL programmes involves coordinated efforts among HEPs, industry, and students. The workshop outlined the responsibilities of each stakeholder:

- HEPs: Curriculum design, student support, quality assurance
- Industry: Mentorship, assessment, workplace training
- Students: Active participation, adherence to learning outcomes

A dedicated 2u2i coordinator is recommended to oversee programme implementation, monitor progress, and facilitate communication between parties. **Continuous Quality Improvement (CQI)** is a cornerstone of COPTPA, requiring regular reviews, stakeholder consultations, and curriculum updates.

The workshop also addressed the accreditation process for TVET programmes, including:

- Provisional Accreditation (PA)
- Full Accreditation (FA)
- Conversion from academic to TVET programmes

Applications must demonstrate compliance with COPTPA standards in four key areas:

1. Programme Design and Delivery
2. Student Assessment
3. Academic Staff
4. Educational Resources

Conversion applications are evaluated based on curriculum alignment with OISP, industry validation, and adherence to TVET standards. Outcomes may include full approval, conditional approval, or rejection.

The COPTPA workshop at APU was a comprehensive and insightful event that reinforced Malaysia's commitment to enhancing the quality and relevance of TVET education.

As Malaysia moves toward full compliance with COPTPA standards by 2026, workshops like this play a crucial role in preparing educators, administrators, and industry partners for the future of vocational education.

The integration of quality assurance, flexible learning models, and industry collaboration marks a new era for TVET—one that is dynamic, inclusive, and forward-thinking.

Inspiring Future Energy Professionals through ECANS 2026 at SOGCE

The Energy Career Aspiration Network Series (ECANS) 2026 was held on 26 June 2026 in conjunction with the **Sabah Oil, Gas and Energy Conference & Exhibition (SOGCE) 2026** in Kota Kinabalu, Sabah. The programme provided an engaging platform for young talents to explore career opportunities, technical disciplines and emerging developments within the oil, gas and broader energy industry.

ECANS 2026 was designed to bridge the gap between academic learning and professional practice by connecting participants with experienced mentors from the energy sector. Through focused mentoring sessions, participants gained valuable exposure to various technical and professional roles while considering how their interests, skills and academic backgrounds could contribute to the future of energy.

Ir. Eur Ing. Ts. Dr. Harvin Kaur Gurchran Singh participated as a mentor for the Production Optimization track. During the session, she guided participants in understanding the importance of maintaining and improving the performance of producing oil and gas assets. Production optimization involves identifying operational challenges, evaluating production data and developing suitable strategies to enhance recovery while ensuring safe, efficient and economically viable operations.

Participants were introduced to several factors that influence production performance, including reservoir conditions, well productivity, pressure decline, flow restrictions, equipment limitations and changing operational conditions. The discussion highlighted how engineers must balance technical performance with safety, environmental responsibility and cost-effectiveness when making operational decisions.

Throughout the mentoring session, participants were encouraged to think critically about real-world production challenges. They explored how production optimization extends beyond increasing output and requires a holistic understanding of the reservoir, wells, surface facilities and operational constraints. This demonstrated the multidisciplinary nature of the energy industry and the importance of collaboration among petroleum, mechanical, chemical, electrical and data professionals.



The session also examined how digital technologies are transforming production operations. Data analytics, artificial intelligence, automation, real-time monitoring and digital twins are increasingly being applied to identify production issues, predict equipment performance and support faster, evidence-based decisions.

These developments are also creating new career pathways for young people interested in combining engineering knowledge with digital and analytical capabilities.





Sustainability formed another important part of the discussion. Participants considered how production optimization can contribute to more responsible energy operations by reducing unnecessary energy consumption, minimizing waste, improving resource efficiency and lowering the environmental impact of production activities.

This reflects the industry's transition towards safer, smarter and more sustainable practices.

Beyond technical knowledge, **Ir. Dr. Harvin Kaur** emphasised the importance of communication, teamwork, adaptability, problem-solving and lifelong learning. These competencies are essential for young professionals entering an industry that continues to evolve in response to technological advancements, environmental priorities and changing global energy needs.



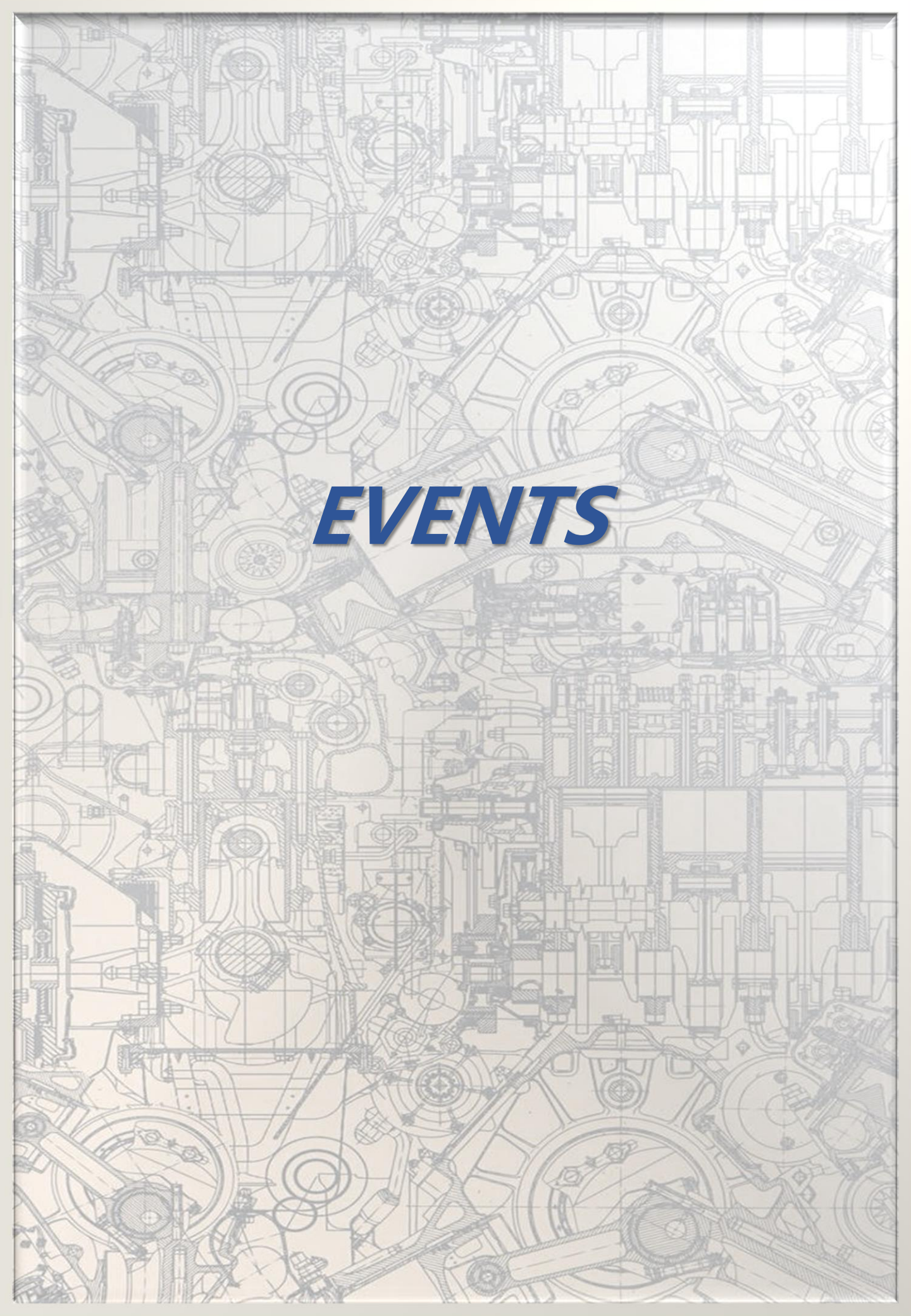
ECANS 2026 enabled participants to develop a clearer understanding of the opportunities available across the energy value chain and the capabilities required to succeed within the sector.

Their direct engagement with industry mentors helped connect classroom knowledge with practical applications while providing valuable perspectives on future academic and professional pathways.

Ir. Dr. Harvin Kaur's involvement as a mentor reflected her continued commitment to supporting energy education and developing future industry professionals. Initiatives such as ECANS play an important role in nurturing curiosity, strengthening career awareness and inspiring young talents to contribute innovative and responsible solutions to the evolving energy landscape.





The background of the page is a detailed, light-colored technical drawing of an engine block, showing various internal components like pistons, valves, and connecting rods. The drawing is rendered in a style typical of engineering blueprints, with fine lines and cross-hatching to indicate different materials and parts.

EVENTS

APU Deepens Global Academic Network with Guangxi Vocational and Technical College of Intelligent Manufacturing

Asia Pacific University of Technology & Innovation (APU) strengthened its international academic network through an MoU signing with Guangxi Vocational and Technical College of Intelligent Manufacturing, fostering collaboration in intelligent manufacturing, engineering, research, and student exchange programmes.



Asia Pacific University of Technology & Innovation (APU) further strengthened its global academic presence through the signing of a Memorandum of Understanding (MoU) with **Guangxi Vocational and Technical College of Intelligent Manufacturing**, China on 24 April 2026 at APU's state-of-the-art campus.

The collaboration marked another significant milestone in APU's commitment to expanding international partnerships in engineering, technology, and applied education, particularly within the rapidly advancing field of intelligent manufacturing.

The MoU signing ceremony brought together distinguished representatives from both institutions.

The delegation from Guangxi was led by **Ms Lu Lingfang**, Vice President, alongside senior representatives from academic affairs and technical training divisions.

Representing APU were **Professor Dr Ho Chin Kuan**, APU's Vice Chancellor and witnessed by **Assistant Professor Ir Ts Dr Alexander Chee Hon Cheong**, Mechanical Engineering Programme Leader from APU's School of Engineering (SoE).

The session commenced with institutional presentations, where both universities shared insights into their academic strengths, research expertise, and industry engagement initiatives.



From left: Professor Dr Ho Chin Kuan, APU Vice Chancellor, and Ms Lu Lingfang, Vice President of Guangxi Vocational and Technical College of Intelligent Manufacturing, exchanged the signed Memorandum of Understanding (MoU), marking a significant step towards strengthening academic collaboration and international partnership between the two institutions.

APU showcased its capabilities in digital technology, engineering, and industry-driven education, while Guangxi Vocational and Technical College of Intelligent Manufacturing highlighted its expertise in industrial robotics, intelligent manufacturing systems, and applied technical education.

This was followed by a productive strategic dialogue, during which both parties explored a wide range of potential collaborations.

Discussions centered on joint academic and research initiatives in intelligent manufacturing and engineering, student mobility and exchange programmes, industry-linked training and certification pathways, as well as collaborative curriculum development aligned with Industry 4.0.'

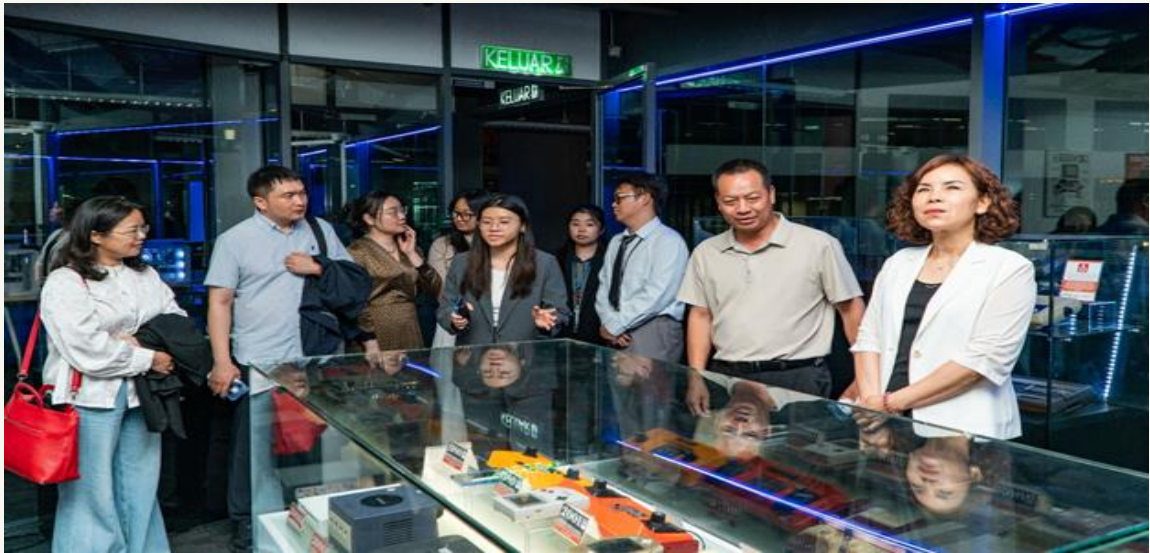


Towards sustainable institutional collaboration and exchange

The engagement reflected the shared aspiration of both institutions to bridge academia and industry while advancing innovation in advanced manufacturing and digital transformation.

The partnership was officially formalized through the signing of the Memorandum of Understanding, symbolizing a mutual commitment to developing impactful academic programmes, fostering innovation, and creating enhanced global learning opportunities for students and staff alike.

Following the signing ceremony, the Guangxi delegation participated in a guided campus tour led by Student Services and Marketing Executive, Ms Elaine Ngan Ei Lin and Student Services & Marketing Digital Recruitment Channel Specialist, Ms Sha Yuxin.



The delegation visited APU's advanced laboratories, collaborative learning spaces, and technology-enabled facilities, gaining first-hand insights into the university's practice-oriented learning environment and emphasis on experiential education.

Interactive discussions continued throughout the visit, enabling both institutions to exchange perspectives on teaching methodologies, industry collaboration models, and future-ready education approaches.

The collaboration aligned closely with APU's strategic vision to strengthen its international footprint, particularly within the China–ASEAN education ecosystem. As a key gateway to ASEAN, Guangxi continued to play an increasingly important role in advancing vocational and technical education that supports regional industrial development.

Through this partnership, APU aimed to co-develop innovative educational models that integrated academic excellence with industry relevance, equipping graduates with the knowledge and skills required to thrive in the era of intelligent manufacturing and global digital transformation.



Advancing Sustainable Agriculture through Innovation at the Third International Conference on Digital Technologies for Sustainable Agriculture



International participants and the organising committee of Asia Pacific University of Technology & Innovation (APU) at the opening session of the Third International Conference on Digital Technologies for Sustainable Agriculture

Recently, Asia Pacific University of Technology & Innovation (APU) hosted the Third International Conference on Digital Technologies for Sustainable Agriculture; a two-day event.

Organised by the Asia Pacific Centre of Robotics Engineering (APCORE) at APU, with the support of the Agricultural Revitalizations in Higher Education Institutions of Asian Countries (AGRHI) project under Erasmus+, the conference served as a global platform for knowledge exchange, collaboration, and innovation in smart agriculture, with a strong focus on artificial intelligence (AI), Internet of Things (IoT), robotics, precision agriculture, and data analytics.

Academic institutions and industry collaborators include Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA), Malaysia, Vellore Institute of Technology (VIT), India, University of West Attica (UniWA), Greece, Middle East Technical University (METU), Turkey, University of Jaffna, Sri Lanka, Eastern University, Sri Lanka, Anna University, India, Institute of Fluid-Flow Machinery; Polish Academy of Sciences (IMP PAN), Poland, Agroz Group Sdn Bhd, and JP Global Engineering Sdn Bhd.

Day One: Exploring Smart Agriculture and Precision farming Technologies



Opening speech delivered by Professor Dr Ho Chin Kuan, Vice-Chancellor of APU, who warmly welcomed participants to the conference, and highlighted the importance of advancing digital technologies in shaping the future of sustainable agriculture.

The conference commenced with keynote presentations and technical discussions focused on the evolving landscape of smart agriculture and digital farming systems.

Experts from academia and industry; including Prof Dr Siva Kumar Balasundram, Head of the Department of Agriculture Technology, Faculty of Agriculture, Universiti Putra Malaysia (UPM), and Dr Riyaz Ahamed, Independent Researcher and Trainer, shared valuable insights into emerging trends in precision agriculture, emphasising the role of digital technologies in enhancing productivity, optimizing resource utilization, and supporting sustainable farming practices.



A key highlight of the first day was the emphasis on practical learning and industry engagement, where participants attended interactive workshops on IoT sensor deployment, gaining hands-on exposure to technologies used in modern agricultural monitoring systems.



Meanwhile, exhibition booths showcased innovative agriculture technology (AgTech) solutions developed by participating universities, startups, and industry partners, providing participants with opportunities to engage directly with cutting-edge technologies and applications.

The collaborative environment fostered meaningful discussions between researchers, practitioners, and industry representatives, encouraging future partnerships and knowledge-sharing initiatives aimed at advancing sustainable agricultural development.

Day Two: Driving Innovation through AI and Intelligent farming Solutions

The second day of the conference focused on the implementation of advanced technologies and innovation strategies within the agricultural sector, with particular emphasis on the growing role of AI in modern farming systems.



Ts Navin Sinnathamby, Head of Digital Agriculture Technology Ecosystem (AgTech), Ecosystem Development Division, Malaysia Digital Economy Corporation (MDEC), visited APU's AGRHI Technology Hub, accompanied by Dr Adeline Sneha John Chrisastum (Senior Lecturer, School of Computing at APU), for a brief engagement on digital agriculture initiatives.

Discussions highlighted key developments in AI-driven crop monitoring, predictive analytics, automated farming systems, and intelligent resource management, demonstrating how data-driven technologies can enhance efficiency, sustainability, and productivity, while addressing global challenges in food production and environmental stewardship.



A key highlight of the second day was the strong focus on practical applications of emerging technologies, where participants engaged in specialised workshops on drone technologies and AI vision systems.



In addition, breakout sessions and panel discussions brought together academic experts, industry practitioners, and policymakers: including Ts Navin Sinnathamby, Head of Digital Agriculture Technology Ecosystem (AgTech), Ecosystem Development Division, Malaysia Digital Economy Corporation (MDEC), to exchange perspectives on digital transformation strategies within agriculture.

Strengthening Global collaboration for Sustainable Agriculture.



International participants and the organising committee of APU gathered in front of APU's AGRHI Technology Hub, reflecting the conference's spirit of global collaboration and innovation in sustainable agriculture.

The success of the conference reinforced APU's position as a leading hub for advancing digital innovation in agriculture.

Through keynote presentations, technical sessions, workshops, exhibitions, and networking opportunities, it facilitated meaningful exchanges between researchers, industry stakeholders, and institutions committed to shaping the future of sustainable agriculture.

The active involvement of APU, alongside its international partners and collaborators, further strengthened the conference's global impact, highlighting its growing role in fostering cross-border cooperation and interdisciplinary research to address global challenges.

APU Engineering Students Explored the Future of Simulation-Driven Engineering

APU engineering undergraduates attended a NAFEMS Simulation-Driven Engineering talk delivered by Mr Yogeswaran of ORS Technologies Sdn. Bhd., where they were introduced to key simulation tools such as FEA and CFD, real-world industrial applications, and the NAFEMS certification pathway, gaining valuable insights into modern engineering practices, Industry 4.0, and future career opportunities.



Final-year engineering undergraduates from the **Asia Pacific University of Technology & Innovation (APU)** gained valuable industry insights during a technical talk on **NAFEMS Certification and Simulation-Driven Engineering**, held at APU's state-of-the-art campus.

Organised by Senior Lecturer, **Ir Ts Subhashini Gopal Krishnan** from APU's School of Engineering (SoE), the session brought together students from Petroleum Engineering, Mechatronics Engineering, Telecommunication Engineering, Electrical and Electronic Engineering, and Computer Engineering programmes, showcasing a strong spirit of multidisciplinary collaboration.

The talk was delivered by Mr Yogeswaran, Executive Director of ORS Technologies Sdn. Bhd., who shared his expertise on the growing role of simulation technologies in modern engineering.

The session provided students with valuable exposure to professional engineering practices while offering insights into current industry expectations and future career opportunities.

At the heart of the discussion was the increasing importance of simulation-driven design, a methodology that allows engineers to predict, analyse, and optimise performance before physical prototypes are produced.

Students were introduced to key simulation techniques, including Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD), and multiphysics simulations, all of which play a critical role in solving complex engineering challenges.

Through a series of real-world case studies, participants explored how simulation technologies were being applied across industries to improve efficiency, reduce costs, and enhance product performance.

Examples included powertrain noise, vibration and harshness (NVH) analysis, large-scale modelling of complex assemblies, and optimization techniques that enabled engineers to minimise material usage while maintaining structural integrity.

The session also highlighted how simulation-driven approaches had transformed product development processes.

Students examined examples where engineering components were redesigned to achieve lighter weight, stronger performance, and greater energy efficiency, demonstrating the value of integrating simulation tools at the earliest stages of design.

One of the most engaging segments focused on the concept of cross-disciplinary engineering, often referred to as “cross-pollination”, where simulation methodologies are applied beyond conventional engineering sectors.

A particularly compelling biomedical engineering case study showcased the development of patient-specific cranial implants using 3D modelling, forming simulations, and impact analysis.



The technical talk on Simulation-Driven Engineering was delivered by Mr Yogeswaran, Executive Director of ORS Technologies Sdn. Bhd., in collaboration with APU's School of Engineering (SoE), providing students with valuable industry insights into modern engineering simulation practices and applications

The example illustrated how engineering expertise could contribute directly to healthcare innovation while bridging multiple engineering disciplines.

Further case studies covered applications in railway systems, aerospace engineering, heavy machinery simulation, and electronics thermal management, demonstrating the versatility of simulation technologies in addressing diverse real-world challenges.

Students also gained insights into the integration of simulation with advanced manufacturing, digital engineering, and Industry 4.0 technologies, offering a glimpse into the future of engineering practice.

The session introduced students to NAFEMS, the international association dedicated to advancing the effective and reliable use of engineering simulation technologies.

Participants learned about the NAFEMS Professional Simulation Engineer (PSE) certification pathway, which provides structured training in simulation-driven design and computer-aided engineering (CAE).

The certification pathway offers aspiring engineers' opportunities to gain internationally recognized credentials, access industry-standard software tools, and engage with a global professional community.

Such exposure can significantly enhance graduates' employability and professional development prospects in an increasingly technology-driven engineering landscape.

Throughout the session, students actively engaged in discussions and gained a deeper understanding of emerging simulation technologies, industry practices, and professional certification opportunities.

Faculty members also emphasised the importance of incorporating simulation into academic learning, research activities, and laboratory projects, ensuring students remained aligned with evolving industry demands.

In line with the United Nations Sustainable Development Goals (SDGs), the initiative supported SDG 4 (Quality Education) by strengthening students' industry-relevant competencies, SDG 9 (Industry, Innovation and Infrastructure) by promoting innovation through advanced simulation technologies, and SDG 13 (Climate Action) through engineering practices that optimise resources, reduce waste, and improve energy efficiency.

The successful engagement reflected APU's ongoing commitment to producing industry-ready, future-focused engineers equipped with the technical knowledge, practical skills, and innovative mindset needed to address complex challenges across a wide range of engineering sectors.

By bridging academic learning with industry expertise, the University continued to empower students to thrive in an increasingly digital and interconnected engineering environment.

APU and JET Engineering Solutions Forge Smart Engineering Partnership with Seed Industry Grant

APU's MoU with JET Engineering Solutions strengthens industry-academia collaboration through applied research, student projects, industrial exposure and an industry-funded SCADA automation project that nurtures future-ready engineering talent.



Formalizing the partnership between APU and JET Engineering Solutions. At the ceremony, Prof Dr Ho Chin Kuan (second from left) exchanges signed documents with Mr Edward Tan Mun Yew, witnessed by Prof Ir Dr Siva Kumar Sivanesan (far left) and Ms Noor Faraziah Binti Hamzah (far right).

Asia Pacific University of Technology & Innovation (APU) and **JET Engineering Solutions Sdn Bhd** have marked a meaningful milestone in industry-academia collaboration through the signing of a Memorandum of Understanding (MoU) aimed at fostering innovation, talent development and applied research in engineering technologies.

The collaboration was formalized on 11 June 2026 by **Professor Dr Ho Chin Kuan**, Vice Chancellor of APU, and **Mr Edward Tan Mun Yew**, Executive Director of JET Engineering Solutions Sdn Bhd. The signing was witnessed by **Professor Ir Dr Siva Kumar Sivanesan**, Head of APU's School of Engineering (SoE), and **Ms Noor Faraziah Binti Hamzah**, Head of Human Resource at JET Engineering Solutions.



APU academics and student representative, led by Prof Ho (third from left), pose for a group photo with the delegation from JET Engineering Solutions, led by Mr Justin John Papu (fourth from left), at APU's iconic Senate Lounge.

Also present at the ceremony held on APU campus were **Asst Prof Ir EUR ING Ts Dr Lau Chee Yong**, Assistant Professor from APU's SoE, who will serve as Project Supervisor, together with representatives from JET Engineering Solutions, namely Mr Justin John Papu, Chief Executive Officer; Mr Muhammad Syahin Ihsan Bin Nor'en, Assistant Manager; and Mr Muhamad Nuruddeen Bin Mohamad Roslan, System Engineer.

Mr Muhammad Syahin Ihsan Bin Nor'en is also a proud APU alumnus, having graduated with a BEng (Hons) in Mechatronic Engineering in 2020.

Founded in 2018, JET Engineering Solutions is a Malaysian-based engineering firm specializing in Smart Grid technologies, system integration and substation automation. Through this partnership, both organizations aim to bridge academic learning with industry practice by creating opportunities for students and academics to engage in research, technology innovation and real-world engineering applications.

A key highlight of the collaboration is an industry grant provided by JET Engineering Solutions to support a pioneering research project titled "SCADA Engineering Automation Framework: AI-Driven Design Tools and Smart Workflow Automation for Substation Control Systems."



Discussions on the SCADA Engineering Automation research project and potential areas for future collaboration are in full swing between JET Engineering Solutions and APU.

The project will be undertaken by Yong Shin Cheng, a Mechatronics Engineering student from APU, under the supervision of Asst Prof Dr Lau.

Supported by an RM7,000 industry grant from JET Engineering Solutions, the project will explore the application of artificial intelligence and workflow automation technologies in Supervisory Control and Data Acquisition (SCADA) engineering processes.

By integrating AI-driven design tools with intelligent workflow automation, the project seeks to improve engineering efficiency, reduce repetitive manual tasks and enhance the overall design and implementation of substation control systems.

The initiative reflects the growing importance of digitalization and intelligent engineering solutions within the energy and utilities sector.

Speaking on the collaboration, Prof Siva Kumar highlighted the importance of industry partnerships in preparing future engineers for the evolving demands of Industry 4.0.

“This collaboration with JET Engineering Solutions connects our students with real engineering challenges. Through the SCADA Engineering Automation Framework project, they will gain practical industry exposure while developing solutions that can create meaningful impact,” said Prof Siva Kumar.

“We sincerely appreciate JET Engineering Solutions’ support in nurturing engineering talent and advancing applied technological innovation,” he added.



The JET Engineering Solutions delegation visits APU’s Cybersecurity Laboratory, hosted by Asst Prof Dr Julia Juremi (right).

Beyond the MoU signing, the JET Engineering Solutions delegation also visited APU's Cybersecurity Laboratory, hosted by Asst Prof Dr Julia Juremi, Head of the Forensics and Cyber Security Research Centre (FSeC) at APU.

During the visit, the delegation was introduced to APU's cybersecurity capabilities, ongoing research initiatives and specialised facilities. The session sparked interest in exploring future collaborations related to cybersecurity, industry projects and talent development, particularly in view of the increasing importance of cybersecurity across industrial and critical infrastructure environments.



Celebrating the successful establishment of a working partnership between APU and JET Engineering Solutions. From left to right are: Asst Prof Dr Lau Chee Yong, Mr Muhamad Nuruddeen, Yong Shin Cheng, Mr Justin John Papu, Ms Noor Faraziah, Mr Edward Tan, and Mr Muhammad Syahin Ihsan.

The MoU establishes a framework for broader cooperation between APU and JET Engineering Solutions, covering research and development activities, student projects, industrial training opportunities, knowledge exchange and technology innovation initiatives.

Both organisations share a common vision of narrowing the gap between academia and industry while supporting the development of future-ready engineering professionals.

Collaborations such as this create meaningful opportunities for students to contribute to technology-driven solutions while gaining the job readiness, industry exposure and applied skills needed in today's evolving engineering landscape.

The partnership between APU and JET Engineering Solutions is expected to deliver long-term benefits for both organisations while contributing to the continued growth of Malaysia's engineering and technology ecosystem.

IEM APU Student Section Handover Ceremony Marks a New Chapter of Student Leadership



Recently, Asia Pacific University of Technology & Innovation (APU) Institution of Engineers Malaysia (IEM) Student Section (IASS) held its committee reshuffling ceremony; marking the transition of leadership from the 2025 - 2026 committee to the newly appointed 2026 - 2027 committee.

IASS; led by **Ir Ts Subhashini Gopal Krishnan** (Senior Lecturer and Advisor of IASS, School of Engineering at APU), aspires to cultivate a dynamic engineering student community by fostering leadership, collaboration, professional development, and active engagement in engineering-related initiatives.



Graced by members of the School of Engineering (SoE) at APU, the ceremony recognized the valuable contributions of the outgoing committee, while providing the newly appointed leadership team with an opportunity to begin their term with renewed purpose, enthusiasm, and commitment.

The ceremony began with an appreciation segment dedicated to the outgoing committee, recognizing their efforts and contributions throughout the 2025 - 2026 term.

Their journey was marked by teamwork, innovation, and a commitment to fostering engineering excellence through various student-led initiatives, technical engagements, and opportunities for professional development.



A highlight of the ceremony was the address by **Ir Ts Subhashini**, who commended both the outgoing and incoming committees for their dedication and commitment towards strengthening the engineering student community.

In her speech, she emphasised the importance of student leadership, teamwork, and continuous learning in developing future-ready engineers who are equipped with both technical knowledge and professional competencies.

She also encouraged the newly appointed committee to embrace their responsibilities with confidence and dedication, while continuing to create meaningful opportunities for students to enhance their engineering skills, industry awareness, and professional growth.

Following this, the newly appointed committee was introduced, unveiling a passionate team ready to take on new responsibilities and lead IASS towards another year of growth, collaboration, and student development:

Name	Role
Dheeraj Suresh Kumar and Jassmetaa Anthony Philip Beins	President 1 and 2
Resshmehn Tamil Many and Ashley Arigye Atukunda	Vice President 1 and 2
Chloe Tung	Treasurer
Renuka Chowdary Karanam and Shree Pranav Sivakumar	Secretary 1 and 2
Mehreen Mehraj, Tarun Tej Javvadi, Tasnim Mohamed Elsayed Elzanaty Elsayed, Zin Hnin Wai, Arsha Raf Arli @ Wai Yan Myo, Anam Siddique, and Batoul Ahmed Hussein Ahmed Mahmoud	Marketing Executive
Tasnia Musrat Adiba and Eithar Sidig Eltigani Sidig	Logistics Executive
Harshit Addepalli and Ahmed Elwalid Abdelraouf	Committee Executive



The ceremony concluded on a high note, filled with sentiments of appreciation, enthusiasm, and anticipation for the new chapter ahead.

With a committed and capable new team leading the way, IASS is poised to continue supporting the development of future-ready engineers through leadership opportunities, technical initiatives, and professional engagement throughout the upcoming academic year.

Engineering Empathy Through STEM Outreach

The School of Engineering (SoE) at Asia Pacific University of Technology & Innovation (APU), in collaboration with the **APU Society of Petroleum Engineers Student Chapter (APUSPESC)**, recently brought STEM learning beyond the classroom through a two-part **Corporate Social Responsibility (CSR) STEM Outreach Programme at BRDB Rotary Children's Residence (BRCR)**.



APUSPESC members serving as student facilitators for the Corporate Social Responsibility (CSR) STEM Outreach Programme pose for a group photo with the children at BRCR, accompanied by their lecturers.

Conducted on 25 July and 1 August 2026, the initiative combined community service with experiential learning, creating meaningful opportunities for underserved children to explore science and engineering while enabling APU students to grow as future engineers with a strong sense of social responsibility.

BRCR is a safe home jointly established by the Rotary Club of Kuala Lumpur Diraja and Bandaraya Developments Sdn Bhd for abandoned, orphaned and at-risk children and teenagers.

Making STEM Accessible and Engaging



The Balloon Car Challenge transforms scientific and engineering principles into tangible learning experiences for the children at BRCR.

Across both sessions, the programme benefited 66 children comprising 37 primary school students and 29 secondary school students residing at BRCR.

Facilitated by 20 APUSPESC members — 11 facilitators in the first session and nine in the second — the programme introduced the children to fundamental STEM concepts through hands-on activities designed to encourage curiosity, creativity, critical thinking and problem-solving.



Guided by Ir Dr Wong Siew Fan (centre), Senior Lecturer at SoE, APU student facilitators conduct a live demonstration of the Hydraulic Elevator Project for the children.

Among the activities were the **Balloon Car Challenge** and **Hydraulic Elevator Project**, which transformed scientific and engineering principles into tangible learning experiences. Rather than encountering STEM only through textbooks, participants could experiment, observe outcomes, work collaboratively and understand how ideas translate into practical applications.

The approachable and enjoyable format helped make science, technology, engineering and mathematics less intimidating, while encouraging the children to see themselves as capable learners who could potentially pursue STEM-related studies and careers in the future.

The programme was led by **Ir Dr Wong Siew Fan**, Senior Lecturer at SoE, with support from **Ms Fatin Ayuni**, Lecturer at SoE.

Developing Engineers Beyond Technical Knowledge



During Session 1, Ir Dr Wong Siew Fan (first row, second from left), Senior Lecturer at SoE, Ms Fatin Ayuni (first row, first from left), Lecturer at SoE, and the APUSPESC volunteers pose for a photo with the programme coordinator from BRDB Rotary Children's Residence.

For the APUSPESC volunteers, the outreach programme carried an equally important dimension.

Under the guidance of **Ir Dr Wong** and **Ms Fatin Ayuni**, the undergraduate students assumed active responsibilities in programme planning, activity facilitation, team coordination and participant management. Working directly with children of different ages and learning needs required them to communicate clearly, respond patiently and adapt when an explanation or activity did not unfold as expected.

These experiences strengthened professional competencies such as leadership, teamwork, communication, adaptability, project management and problem-solving. More significantly, engaging with children from vulnerable backgrounds encouraged the students to reflect on empathy, civic awareness and the wider responsibilities that accompany their future professional roles.

For Bachelor of Petroleum Engineering with Honours student **Lucas Chiong Ju Wynne**, **Secretary of APUSPESC** for the 2025/2026 term, the experience demonstrated how knowledge becomes more meaningful when it can be shared with others.

“The STEM activity was a valuable experience that allowed me to connect with the children while sharing my knowledge with them. It also taught me the importance of patience and effective communication, as well as the need to adapt my approach to make their learning experience more engaging,” Chiong shared.

Learning Through Connection



A memorable group photo marks the successful completion of Session 2 of the STEM CSR Outreach Programme.

APUSPESC President 2025/2026 **Levi Louis Mark Anthony**, also a Petroleum Engineering student, similarly found that effective facilitation depended not only on technical understanding, but also on the ability to connect with participants.

“As a student facilitator, my biggest takeaway was learning how to communicate, adapt and work together while making STEM fun and accessible for children of different ages. Seeing their excitement and curiosity during the activities reminded me that learning can be most meaningful when it is hands-on, engaging and enjoyable,” said Levi.

Their reflections underline an important dimension of engineering education: becoming future-ready involves more than mastering technical knowledge. Engineers must also understand people, communicate across different contexts and recognize how their knowledge can contribute to society.

Creating Impact Through Education and Service

By extending STEM learning opportunities to an underserved community, the programme supported APU’s broader commitment to producing graduates who are professionally capable and socially conscious.

The initiative also contributed towards the United Nations Sustainable Development Goals, particularly SDG 4: Quality Education through accessible STEM enrichment; SDG 10: Reduced Inequalities by widening educational opportunities for vulnerable communities; SDG 17: Partnerships for the Goals through collaboration between SoE, APUSPESC and BRRCR; and SDG 8: Decent Work and Economic Growth by encouraging STEM awareness and future educational and career aspirations.

More than a series of science activities, the STEM Outreach Programme demonstrated how engineering education can connect knowledge with purpose. By nurturing curiosity among children while developing empathy, leadership and civic responsibility among APU students, SoE continues to advance a holistic approach to educating future engineers — preparing them not merely to solve technical problems, but to understand the communities their solutions ultimately serve.

APU Engineers Take On EnvisionTech Malaysia 2026

Asia Pacific University of Technology & Innovation (APU) engineering students attended Infineon Technologies' EnvisionTech Malaysia 2026, gaining hands-on exposure to cutting-edge advancements in edge AI, wide-bandgap semiconductors, IoT, green energy, and collaborative robotics to engage directly with industry engineers and bridge classroom theory with real-world semiconductor applications.



Dr Mukil Alagirisamy and Dr Hazwani Mohd Rosli with APU's School of Engineering (SoE) students at the MRANTI Building, Bukit Jalil, Kuala Lumpur.

On 30 July 2026, fourteen ambitious engineering students from Asia Pacific University of Technology & Innovation's (APU) School of Engineering (SoE) attended **EnvisionTech Malaysia 2026**, Infineon Technologies' premier annual conference held at the Malaysian Research Accelerator for Technology and Innovation (MRANTI) building in Bukit Jalil, Kuala Lumpur.

Organised by Ir Ts Dr Dhakshyani Ratnadurai, with academic guidance provided on the day by Dr Hazwani Mohd Rosli and Dr Mukil Alagirisamy, the trip offered students a front-row seat to the rapid evolution of artificial intelligence (AI), the Internet of Things (IoT), and green energy.

The afternoon kicked off inside the MRANTI auditorium, where keynote speakers tackled the dual engines driving modern industry: digital transformation and the global energy transition.

Presentations mapped out the shift towards net-zero targets, exploring how the automotive and manufacturing sectors were systematically replacing mechanical systems with high-efficiency electrical drives under Industry 4.0.



APU students listening to a keynote presentation on green energy and digital transformation at the MRANTI auditorium

A standout session delivered by Ms Sarah Woo, Regional Marketing Director for Smart Home and Building at Infineon Technologies Asia Pacific, pulled back the curtain on the critical demands placed on components powering robotics and autonomous drones, underscoring how hardware reliability, power efficiency, and hardware-level security had become non-negotiable.

Beyond the auditorium, the venue foyer transformed into a vibrant exhibition floor where classroom theories collided with commercial reality.

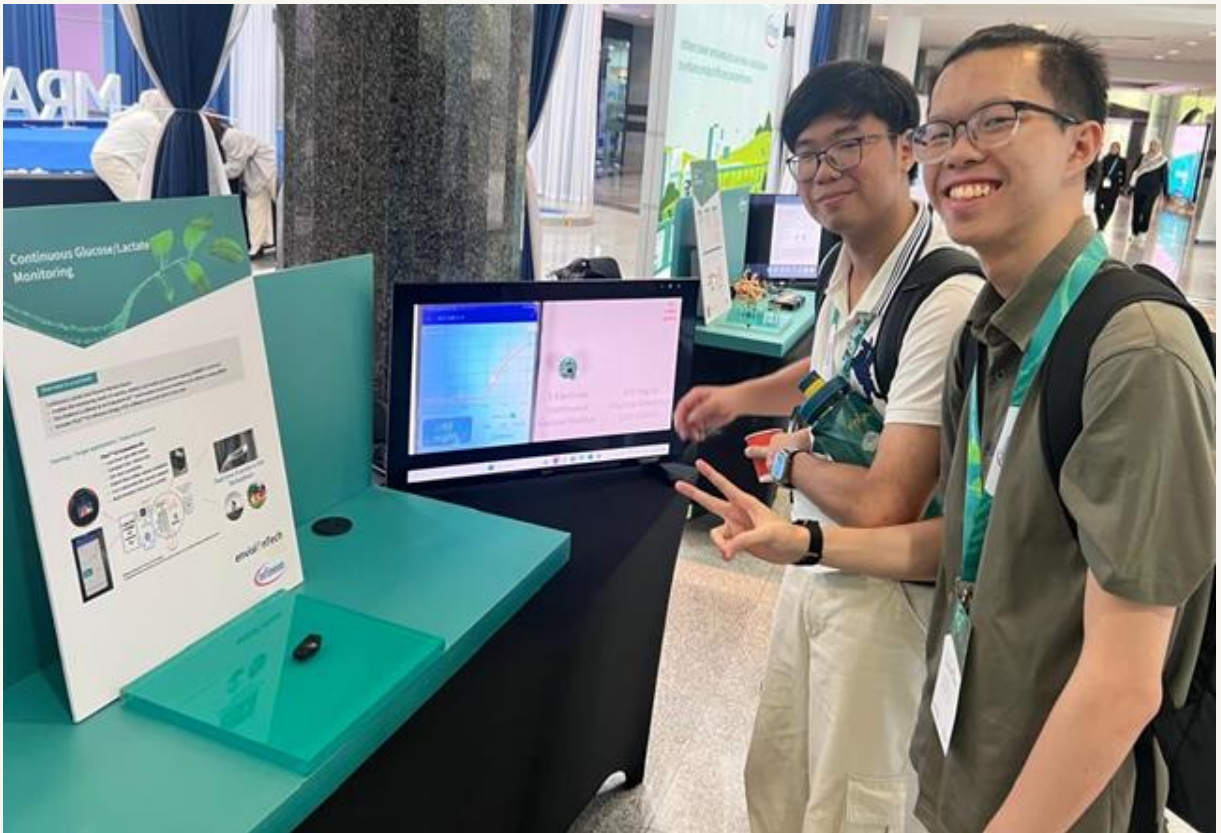


APU engineering students exploring the dual motor control demonstration with an Infineon application engineer.

APU students immersed themselves in interactive demonstrations, diving into nuanced technical discussions with Infineon's application engineers on power electronics, embedded systems, and control engineering.

The microcontrollers on display featured the PSOC Edge E8 series, built on Arm Cortex architecture to execute complex machine learning workloads directly on-device rather than relying on the cloud.

A key highlight was the E84 human-machine interface kit, which integrated a four-inch capacitive touchscreen, digital and analogue microphones, embedded vision cameras, and a 60 GHz radar sensor for gesture and proximity tracking, all driven via the ModusToolbox environment and DEEPCRAFT AI toolset.

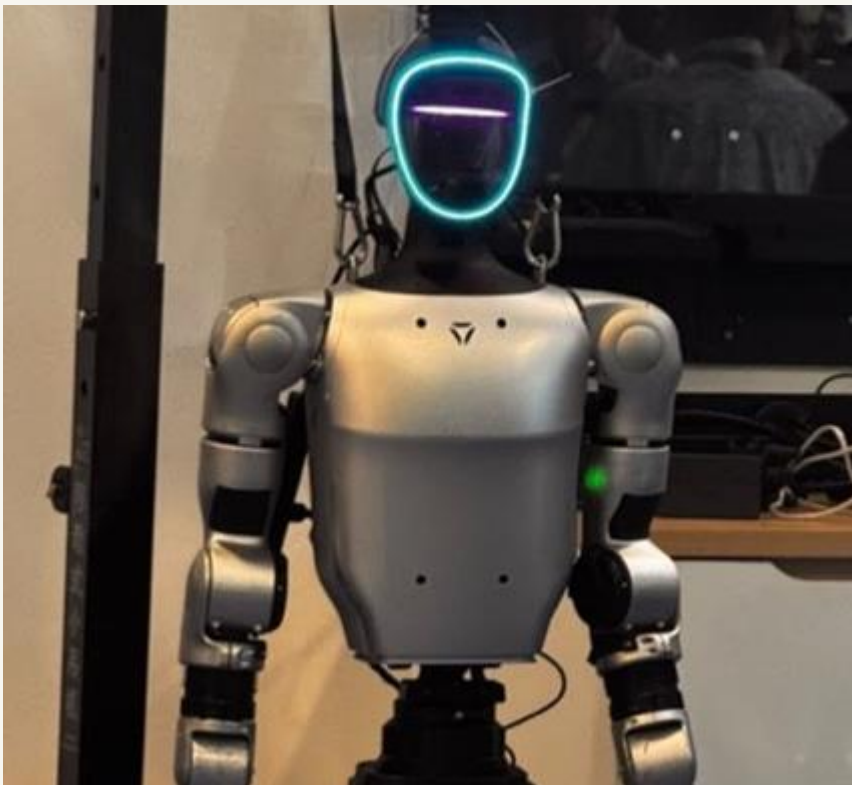


APU's SoE students at the continuous glucose and lactate monitoring demonstration

Advanced wide-bandgap power devices also took centre stage, with silicon carbide and gallium nitride transistors demonstrating far superior switching speeds and minimal thermal waste compared to traditional silicon.

The hardware on display included a 1 kW inverter combining 650 V SOI EiceDRIVER gate drivers, a 140 W full-GaN reference design, and a high-efficiency 3.3 kW bridgeless totem-pole power factor correction board tailored for data centre power supplies.

A focused presentation highlighted the dramatic performance leap of solid-state relays over traditional electromechanical switches, operating roughly ten times longer over their lifespan with lightning-fast response times of 60 microseconds while eliminating contact bounce and arcing entirely across electric vehicle battery disconnects, solar inverters, and industrial automation.



A demonstration of the autonomous multi-robot system designed for intelligent collaborative applications.



A demonstration of the autonomous multi-robot system designed for intelligent collaborative applications.

Showcasing the intersection of medical tech and embedded hardware, a continuous glucose and lactate monitoring platform built on the PSoC 63 evaluation kit demonstrated how low-noise analogue front-ends and Bluetooth connectivity enabled real-time metabolic tracking for both professional athletes and medical patients.

Stealing much of the spotlight was an autonomous multi-robot ecosystem that paired a humanoid robot with mobile robotic platforms.



APU students and accompanying lecturers gather with Infineon Technologies representatives during EnvisionTech Malaysia 2026 at MRANTI.

For the visiting engineers, the event provided an invaluable bridge between textbook principles and commercial implementation.

Debating thermal management strategies in gallium nitride converters or analysing memory constraints when deploying AI models onto microcontrollers offered a level of practical clarity that lectures alone simply could not replicate.

APU's SoE extends its sincere gratitude to Infineon Technologies and MRANTI for opening their doors to the next generation of tech innovators and looks forward to organising further high-impact industry immersions in the future.

School of Engineering Showcases Innovation at Final Year Project Poster Presentation 2026

Led by **Ir. Ts. Dr. Reena Sri Selvarajan** (Chair of the Final Year Project (FYP) Committee) with the support of **Dr. Sathish Kumar Selvaperumal** (FYP Module Lecturer), the School of Engineering (SOE) successfully hosted the **Final Year Project (FYP) Poster Presentation 2026**.

The event featured 62 final-year students from the Mechatronics Engineering, Computer Engineering, Electrical and Electronic Engineering (EEE), and Petroleum Engineering programmes, who presented the outcomes of their capstone research and engineering design projects at Level 1 (Petroleum Engineering Laboratories) and Level 4 (Digital Electronics Laboratories).

The poster presentation was conducted across two venues within the School of Engineering: Level 1 (Petroleum Engineering Laboratories) and Level 4 (Digital Electronics Laboratories).

The event provided a vibrant platform for students to present their research findings and innovative engineering solutions to academic staff, fellow students, and visitors from across the engineering disciplines.

Designed to emulate a professional research conference, the poster presentation enabled students to strengthen their technical presentation and communication skills while receiving constructive feedback from academic evaluators and attendees.

The interactive environment encouraged meaningful discussions that helped students refine their research direction and appreciate the importance of translating engineering knowledge into practical solutions.

The event also attracted students from various engineering programmes, particularly junior cohorts, who had the opportunity to explore the diverse range of final-year projects undertaken within the school.

By engaging with the presenters, junior students gained valuable insights into research methodologies, engineering problem-solving, project development, and the expectations of their own future Final Year Projects. The exhibition fostered peer learning and inspired a culture of curiosity, innovation, and academic excellence.

The multidisciplinary projects presented reflected the School's commitment to addressing real-world engineering challenges through research, creativity, and technological innovation.

The event further strengthened collaboration among students and academic staff while cultivating a dynamic research ecosystem within the School of Engineering.

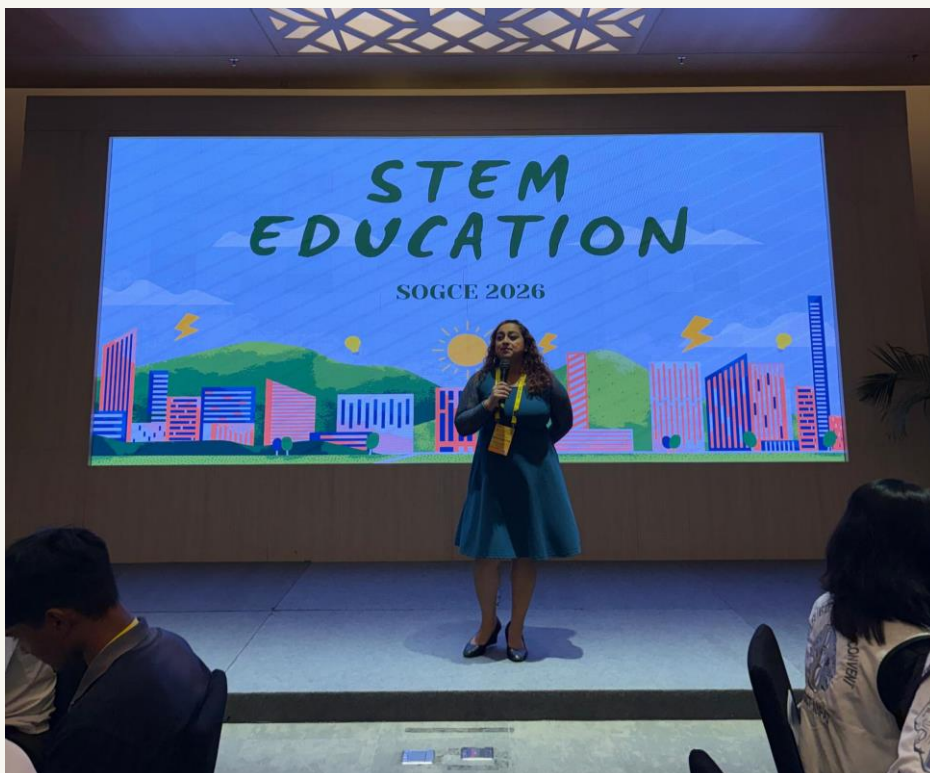
The Final Year Project Poster Presentation 2026 aligns with the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education) by promoting experiential learning and professional skill development, SDG 9 (Industry, Innovation and Infrastructure) by encouraging engineering innovation and technology-driven solutions, and SDG 17 (Partnerships for the Goals) by fostering collaboration between students, academic staff, and the wider engineering community.



Igniting Young Minds Through STEM at Sabah Oil and Gas Conference and Exhibition (SOGCE) 2026

Four letters—STEM—carry the power to ignite curiosity, inspire innovation and transform lives.

The STEM Education Programme at SOGCE 2026 on the 25th of June 2026 provided young students with an exciting opportunity to explore the world of energy through engaging and interactive learning activities. Led by **Ir. Eur Ing. Ts. Dr. Harvin Kaur Gurchran Singh**, the programme introduced students to the importance of Science, Technology, Engineering and Mathematics in shaping the present and future of the energy industry.





The programme demonstrated that STEM extends beyond classroom theories and formulas. It encourages young people to ask questions, think critically, solve problems and develop the confidence to express innovative ideas.

Through age-appropriate activities and discussions, students explored how STEM is applied across the energy sector. They gained exposure to energy production, engineering technologies, environmental responsibility and the development of cleaner and more sustainable energy solutions.

The session also encouraged students to consider how future energy systems could balance society's growing energy needs with environmental protection.

By connecting scientific concepts with real-world challenges, the programme helped students recognize the important role that engineers, scientists and innovators play in building a more sustainable future.

The students' enthusiasm, curiosity and eagerness to participate highlighted the value of providing young people with early exposure to STEM.



Such experiences can help them understand that science and engineering are not merely academic subjects but powerful tools for improving communities and addressing global challenges.

The **SOGCE 2026 STEM Education Programme** also reinforced the importance of connecting education with the energy industry. These learning experiences can broaden students' understanding of STEM careers while developing creativity, critical thinking and problem-solving skills.



Every child inspired today has the potential to become tomorrow's engineer, scientist, innovator or leader. Through initiatives such as the SOGCE 2026 STEM Education Programme, we are not only teaching STEM—we are nurturing future talent and shaping the future of the energy industry, one student at a time.





APU School of Engineering Strengthens Collaboration with UKM High Voltage Engineering Laboratory

On 22 June 2026, a delegation from the Asia Pacific University of Technology & Innovation (APU) School of Engineering (SoE), comprising **Ir. Dr. Mohamad Affan Mohd Noh, Dr. Hazwani, Ir. Dr. Sharman, and Ir. Dr. Hafisoh**, conducted an academic visit to the **High Voltage Engineering (HVE) Laboratory** at the **Faculty of Engineering and Built Environment (FKAB), Universiti Kebangsaan Malaysia (UKM)**.

The visit aimed to explore opportunities for academic and research collaboration, particularly in the utilization of UKM's advanced high-voltage facilities for **APU's Bachelor of Engineering (Hons) in Electrical and Electronic Engineering programme** and future joint research initiatives.

Upon arrival, the APU delegation was warmly welcomed by Associate Professor Dr. Ramizi Mohamed and the HVE Laboratory team, including Dr. Syahirah Abd Halim, Mr. Mohd Raziff Alias (Laboratory Manager), Mr. Mohd Tuah (Laboratory Technician), and Mr. Rokhaizat (Laboratory Technician).

The visitors were informed that Associate Professor Dr. Ramizi, Mr. Mohd Tuah, and Mr. Rokhaizat are competent persons endorsed by the Energy Commission of Malaysia, reflecting the laboratory's strong commitment to safety, compliance, and professional standards.

The visit commenced with a comprehensive safety briefing delivered by Associate Professor Dr. Ramizi, highlighting the stringent procedures required when operating high-voltage equipment. Safety remains a critical aspect of high-voltage engineering, and the briefing provided valuable insights into the laboratory's operational practices and risk management procedures.

Consistent with UKM's emphasis on professional laboratory operation, activities within the facility are supervised by qualified personnel to ensure compliance with safety standards.

Following the briefing, Associate Professor Dr. Ramizi introduced the laboratory staff and showcased the sophisticated equipment available at the UKM High Voltage Engineering Laboratory.

The HVE Laboratory forms part of UKM's Power Electronics and High Voltage Laboratory facilities, which support teaching, research, testing, and innovation in power and energy engineering, including high-voltage engineering and insulation coordination.



One of the highlights of the visit was a live demonstration of an impulse voltage generator and electrical breakdown testing. The demonstration provided the APU delegation with a first-hand appreciation of the experimental setups used in high-voltage studies and reinforced the importance of practical exposure in engineering education.

Such facilities are particularly valuable for supporting the High Voltage Engineering module at APU, where students are required to perform experiments related to high-voltage breakdown characteristics, impulse voltage generation, and insulation performance under electrical stress.

The subsequent discussion focused on potential collaboration between APU School of Engineering and FKAB UKM.

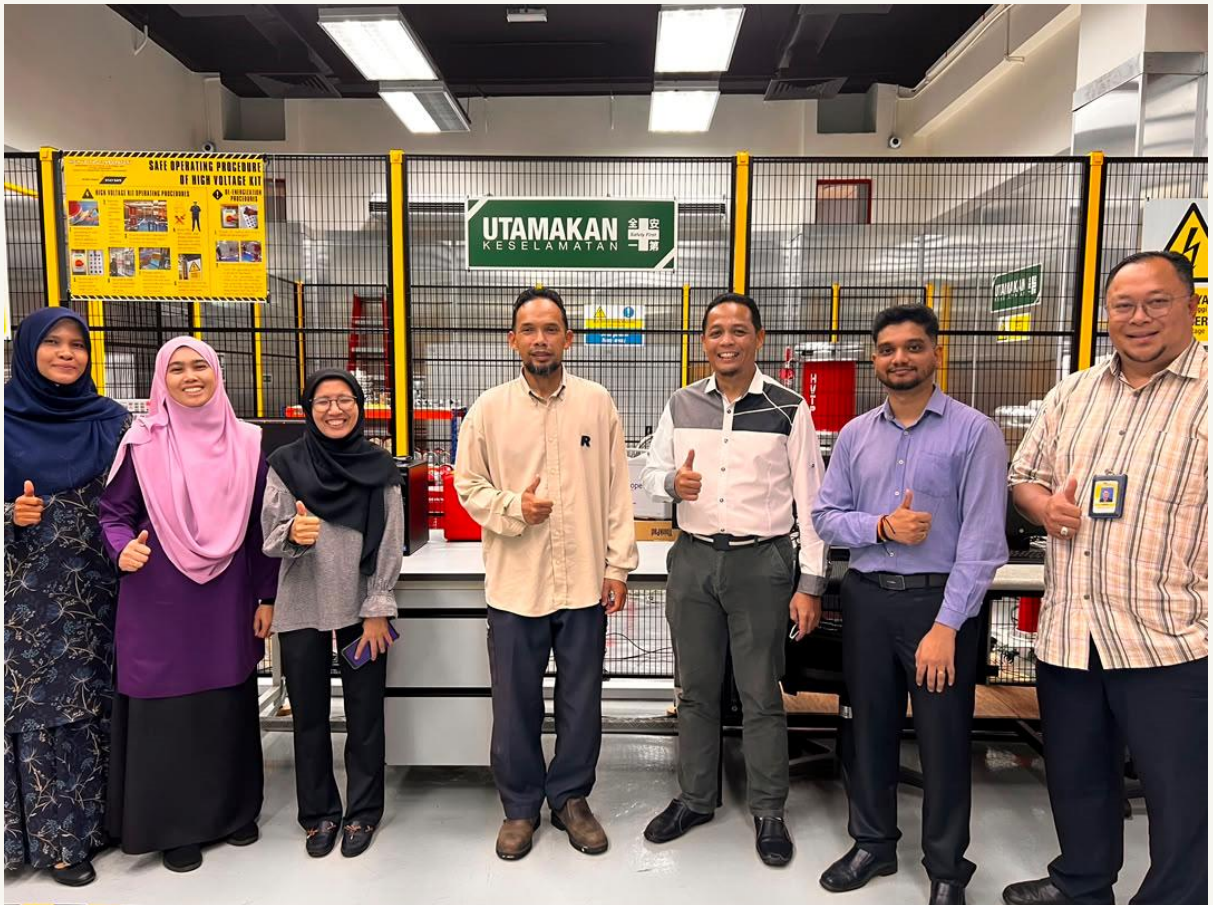
Both institutions explored opportunities for APU students to utilize UKM's high-voltage laboratory facilities to enhance their learning experience through hands-on experimentation using industry-standard equipment.

The discussion also identified potential areas for collaborative research, final year projects, student development activities, and future academic partnerships in power and energy engineering. These initiatives align with the shared objective of strengthening engineering education, promoting research excellence, and providing students with exposure to advanced laboratory facilities.

The visit concluded on a highly positive note, with both parties expressing their commitment to further developing the collaboration. The fruitful engagement highlighted the mutual benefits of inter-university partnerships and established a strong foundation for future cooperation in teaching, learning, research, and innovation.

The APU delegation would like to express its sincere appreciation to Associate Professor Dr. Ramizi and the entire UKM HVE Laboratory team for their warm hospitality, insightful presentations, and valuable discussions during the visit.

This visit marks another important step towards strengthening academic-industry-ready engineering education and fostering strategic partnerships that will benefit students, staff, and both institutions in the years ahead.



Dr. Mukil Alagirisamy Delivers Keynote Talk on “Computer Vision for Agriculture”

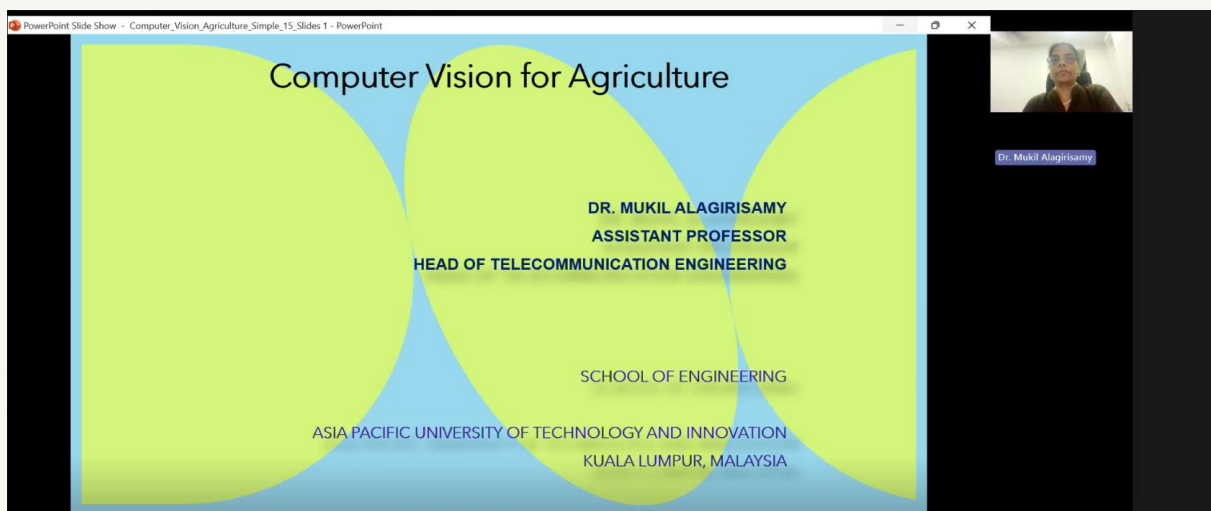
Dr. Mukil Alagirisamy, Assistant Professor, School of Engineering, Asia Pacific University of Technology & Innovation (APU), was invited as a Keynote Speaker at the **International Conference on Emerging Trends in Electronics, Communication and Computing Technology (ICETECCT-2026)**, organised by R.R. Institute of Technology, Bengaluru on 10th and 11th July 2026.

Dr. Mukil delivered an insightful keynote address on **“Computer Vision for Agriculture”** to the presenters, Year 3 and Year 4 Engineering students at Guru Nanak Dev Engineering College. The talk highlighted the transformative role of image processing, computer vision and deep learning in modern agriculture, with a focus on practical and emerging applications in the agricultural sector.

The keynote explored key applications including crop monitoring and health assessment, plant disease and pest detection, yield estimation and quality evaluation, and the integration of Artificial Intelligence (AI) and Internet of Things (IoT) for precision and sustainable farming. The session provided students with insights into how computer vision technologies can be applied to address real-world agricultural challenges and create innovative engineering solutions.

The conference, held under the theme “Emerging Trends in Electronics, Communication and Computing Technology,” brought together researchers, academics, industry professionals and students to exchange knowledge and explore emerging technological developments. Dr. Mukil’s keynote connected advanced computational techniques with real-world applications, particularly demonstrating the potential of computer vision and AI to contribute towards food security, sustainable agriculture and data-driven farming practices.

The session received enthusiastic participation from the Computer Engineering students, providing them with an opportunity to gain exposure to current research trends and practical applications beyond their academic curriculum. The interaction also encouraged students to explore interdisciplinary areas combining computer engineering, artificial intelligence, image processing, IoT and agriculture.



Key Takeaways and Impact

- Promoted awareness of AI-driven solutions for smart and sustainable agriculture among Computer Engineering students.
- Demonstrated practical applications of computer vision and deep learning in crop monitoring, disease detection and agricultural assessment.
- Encouraged students to explore interdisciplinary research and innovative engineering solutions.
- Provided Year 3 and 4 students with exposure to emerging technologies and potential research directions.
- Strengthened APU's commitment to research, innovation and international academic engagement.

Dr. Mukil Alagirisamy from School of Engineering has made a significant academic achievement and her contribution in sharing knowledge and inspiring the next generation of engineers through an engaging keynote on the applications of computer vision in agriculture.



SPE APU Student Chapter Organizes CSR Beach Clean-Up Programme in Support of Environmental Sustainability

The **Society of Petroleum Engineers (SPE) APU Student Chapter (APUSPESC)** successfully organised the SPE APU SC Beach Clean-Up Programme at Pantai Cahaya Negeri, Port Dickson on 20 June 2026 as part of its Corporate Social Responsibility (CSR) initiative promoting environmental sustainability and community engagement.

The six-hour programme brought together 40 students from Asia Pacific University (APU) to participate in environmental conservation activities focused on waste collection, responsible waste management, and sustainability awareness.



The programme was conducted under the advisorship of **Ir. Dr. Wong Siew Fan**, Senior Lecturer from the School of Engineering (SOE), who provided continuous guidance and oversight to the student organising committee throughout the planning and execution stages.

Serving as the faculty advisor for APUSPESC, Ir. Dr. Wong played a key role in mentoring student leaders and ensuring the programme was effectively planned, managed, and implemented in accordance with the University's objectives for student development, safety, and community engagement.

During the preparation phase, **Ir. Dr. Wong** advised the committee on various aspects of project management, including programme planning, logistics coordination, risk and safety management, participant administration, budgeting, and resource allocation.

Through regular consultations and review sessions, she guided the students in developing practical strategies to address operational challenges, enabling them to independently manage and execute a large-scale outdoor CSR activity while adhering to established safety and governance requirements.

The beach clean-up programme contributed directly to environmental preservation efforts through the removal of waste from a public coastal area, helping to promote cleaner marine and coastal ecosystems.

Beyond its environmental impact, the initiative served as an experiential learning platform where participants gained greater awareness of sustainability issues and the importance of responsible environmental stewardship.

The programme aligns closely with several **United Nations Sustainable Development Goals (SDGs)**, namely:

- SDG 4: Quality Education through experiential learning, leadership development, and student empowerment;
- SDG 12: Responsible Consumption and Production by promoting responsible waste management and environmental awareness;
- SDG 14: Life Below Water through actions aimed at reducing coastal and marine pollution; and
- SDG 17: Partnerships for the Goals by fostering collaboration between academic staff and students in advancing sustainability initiatives.

A key outcome of the programme was the development of students' professional and leadership competencies. Under **Ir. Dr. Wong's** mentorship, the organising committee successfully coordinated event operations, managed participant engagement, handled logistical requirements, and delivered the programme effectively.

The initiative enabled students to strengthen essential graduate attributes such as leadership, teamwork, communication, problem-solving, and project management skills through real-world application. The event also demonstrated strong financial stewardship by the student chapter.

Guided by **Ir. Dr. Wong's** oversight on budgeting and financial planning, the committee managed programme resources effectively and generated a surplus of approximately **RM600**.

This achievement reflected prudent financial management practices while providing students with valuable exposure to financial accountability and sustainable event planning.

The successful implementation of the **Beach Clean-Up Programme** further enhanced the visibility of APUSPESC as an active student professional body committed to CSR and sustainability initiatives.

At the same time, the programme reinforced APU's commitment to environmental stewardship, community engagement, and the holistic development of future engineering professionals.

As the programme advisor, **Ir. Dr. Wong Siew Fan** made significant contributions through her leadership, mentorship, and governance oversight, enabling students to successfully deliver a meaningful CSR initiative with measurable environmental, educational, and organizational outcomes.

The programme exemplifies the important role of academic staff in nurturing student leadership, facilitating experiential learning opportunities, and advancing the University's sustainability agenda through impactful community-focused activities.

CSR STEM Outreach Programme in Partnership with IEM Women Engineers



IEM Women Engineers (We) and APU volunteers celebrate with Orang Asli students and their completed truss bridge at Kampung Orang Asli Sungai Lalang, Hulu Langat, Selangor.

On 15 August 2026, **Asia Pacific University of Technology & Innovation (APU)**, in partnership with the **Institution of Engineers Malaysia Women Engineers (IEM WE)**, successfully organised a **CSR STEM Outreach Programme at Kampung Orang Asli Sungai Lalang Baru, Hulu Langat, Selangor**. APU staff, working alongside IEM Women Engineers, spent the day introducing local secondary school students to the world of science, technology, engineering and mathematics through fun, hands-on activities.

The initiative reflects APU's commitment to engineering education that extends beyond the campus and into the communities that surround it. By bringing structured, well-designed activities directly into the Orang Asli community, the programme aimed to spark curiosity, build confidence and open young minds to the possibility of a future in engineering and innovation.

For APU's volunteers, the day was equally an opportunity to put their own engineering knowledge into practice as facilitators reinforcing the University's belief that developing future engineers means developing both technical skill and social responsibility.

Programme Objectives

- To introduce fundamental engineering and STEM concepts to secondary school students through interactive, hands-on learning rather than passive instruction.
- To spark curiosity in science and engineering among students from underserved and rural communities, including the Orang Asli.
- To develop participants' teamwork, communication and problem-solving skills through group-based design challenges.
- To strengthen APU's ties with the professional engineering community through continued partnership with IEM Women Engineers.

Bringing Stem Beyond The Classroom

The programme was designed around the concept of learning by doing, allowing participants to explore engineering concepts through hands-on activities and teamwork rather than textbook theory.

Secondary school students participated enthusiastically in a series of interactive engineering challenges that encouraged creativity, critical thinking and problem-solving skills.

APU academics volunteers together with volunteers from IEM Women Engineers, facilitated each station — guiding students through the underlying engineering principles while giving them the freedom to experiment, make mistakes and iterate on their designs.

This approach mirrors real-world engineering practice and helps build resilience and confidence alongside technical understanding.



Students and APU volunteers collaborating on their truss bridge designs.

Featured Engineering Activities

1. Truss Bridge Challenge

In the Truss Bridge Challenge, students worked in small teams to design and construct model bridges from simple materials such as ice-cream sticks and glue. Guided by APU volunteers, participants explored core structural engineering concepts — including load distribution, triangulation and material strength — before testing their finished structures. The activity turned an abstract engineering principle into something students could see, touch and be proud of, with several teams proudly holding up their completed truss bridges at the end of the session.

2. Solar-Powered Car Challenge

The Solar-Powered Car Challenge introduced participants to the fundamentals of electrical and mechanical engineering through the assembly of small solar-powered vehicle kits. Working closely with APU mentors, students learned how a solar panel converts sunlight into usable electrical energy to drive a motor, while also practicing precise, hands-on assembly skills. The activity was a highlight of the day, with participants eager to test their finished cars and proudly showcase their work to volunteers and peers.

Solar Car Builders



Students assembling their solar-powered car kits with guidance from APU volunteers.

Community Engagement Through Engineering

Beyond technical knowledge, the programme provided participants with opportunities to collaborate with peers, communicate ideas and experience how engineering can be used to solve everyday challenges. The activities demonstrated how STEM knowledge is relevant to daily life and can contribute towards building sustainable communities.

To the students, this programme offered a rare opportunity to interact directly with APU's engineering academics and IEM Women Engineers mentors — conversations that helped demystify what a career in engineering involves and put a human face to fields that can otherwise feel distant or abstract. APU's volunteers likewise came away with a deeper appreciation of the realities faced by rural communities, reinforcing the two-way value of genuine community engagement.



APU and IEM Women Engineers volunteers with participants, sharing a moment together during the programme..

The warmth of the exchange extended beyond the activity stations: the local community welcomed the volunteers with genuine hospitality, including a spread of traditional local dishes shared together at the end of the programme — a fitting close to a day built on connection as much as on engineering.

A Meaningful Collaboration

This programme stands as a strong example of what can be achieved when a university and a professional engineering institution combine their strengths for a shared social purpose. APU contributed its academic volunteers and resources as well as organizational support, while IEM Women Engineers brought professional expertise, sponsorship and a commitment to advancing diversity within the engineering field.

Together, the two organisations were able to design a programme that was not only educational but genuinely engaging — one that met the participants where they were, respected the local community and delivered lasting value well beyond the day itself.

For APU, the partnership reflects the University's broader mission of producing engineers who are not only technically capable but also socially engaged.

Through initiatives such as this, APU continues to inspire young minds to explore, experiment, create and discover their potential through STEM. The programme reflects APU's shared commitment, alongside IEM Women Engineers, towards educational empowerment, community engagement and the development of future engineering talent.

APU hopes to build on the momentum generated by this outreach, with plans to explore further collaborations that extend engineering education to more underserved communities across Malaysia. By continuing to invest in young learners today, APU and IEM Women Engineers aim to help cultivate the next generation of engineers, innovators and problem-solvers — regardless of where they come from.

APU extends its sincere appreciation to its staff facilitators and IEM Women Engineers mentors who contributed their time and energy to make this programme a success, as well as to the local community of Kampung Orang Asli Sungai Lalang Baru for their warm welcome and enthusiastic participation.

Special thanks are also due to all parties who supported the planning and logistics behind this meaningful CSR initiative.

Industrial Experience Sharing Session

The Industrial Experience Sharing Session was successfully conducted on 27 July 2026 at Asia Pacific University of Technology & Innovation (APU), Kuala Lumpur, as part of the Engineer in Society module by **Ir. Ts. Subhashini Gopal Krishnan**. The session featured **Ts. Izwan Adnan**, a Reservoir Engineering Consultant with over 20 years of international industry experience.

The programme was organized to provide valuable industry exposure to final-year students from the Mechanical Engineering (ME), Petroleum Engineering (PE), Civil Engineering (CE), and Electrical & Electronic Engineering (EEE) programmes, enabling them to gain practical insights into the engineering profession and better prepare for their transition into the workforce.



During the session, Ts. Izwan shared his professional journey from an engineering graduate to a technical leader and consultant. Drawing from his extensive experience in Malaysia, Venezuela, and the Caspian Sea region, he highlighted the challenges and opportunities encountered throughout his career with organizations such as **PETRONAS, Shell EOR Joint Venture, Petrocarabobo JV, and Dragon Oil.**

His sharing provided students with a deeper understanding of the diverse career pathways available within the engineering industry and emphasized the importance of adaptability, technical competence, and continuous professional development.

A key focus of the session was the importance of structured problem-solving and decision-making in engineering practice. Ts. Izwan explained how engineers and consultants utilize systematic methodologies involving problem characterization, simulation, analysis, model calibration, and recommendation development to address complex industrial challenges.

He emphasized that engineers must be capable of transforming technical data into actionable solutions that support both operational and business objectives.



The speaker also shared valuable insights on stakeholder management and professional communication. Through real-world industry examples, students learned about the importance of collaborating effectively with clients, regulators, auditors, industry partners, and multidisciplinary teams.

The session highlighted how strong communication skills, teamwork, and professionalism contribute significantly to successful project delivery and long-term career growth.

In addition, **Ts. Izwan** discussed how engineering expertise contributes directly to organizational and commercial success.

Through various case studies, he demonstrated how engineering decisions can improve operational efficiency, optimize resources, reduce costs, and generate sustainable business value. These examples enabled students to appreciate the broader impact of engineering solutions beyond purely technical applications and understand the importance of aligning engineering decisions with organizational goals.



The session further encouraged students to embrace lifelong learning, leadership development, and professional certification. Ts. Izwan stressed the need for future engineers to develop a balanced combination of technical knowledge, business awareness, innovation, and interpersonal skills. He encouraged students to remain proactive in seeking learning opportunities and to continuously enhance their competencies to remain relevant in an evolving engineering landscape.

The event was also attended by **Dr. Harvin Kaur, Dr. Wong Siew Fan, and Ms. Fatin Ayuni**, whose presence demonstrated strong support for initiatives aimed at enhancing students' industry readiness and professional development. Their participation further enriched the session by fostering engagement between academic staff, industry practitioners, and students.

The session concluded with an interactive question-and-answer segment, where students actively engaged with the speaker on topics related to career opportunities, industry expectations, workplace challenges, and professional growth. The discussion provided valuable guidance and practical perspectives for students preparing to embark on their engineering careers after graduation.





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continued support of the School of
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and innovations.**

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