EDMUND LEW TENG JUN

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EDUCATION

University of California, Berkeley August 2025 – Present
BSc Mechanical Engineering (CGPA: 4.00)
Junior exchange student through the UCEAP Reciprocity Programme

University College London September 2023 – Present
MEng Mechanical Engineering with Minor in Intelligent Systems
First Year Grades: First Class Honours (87.70%)
Second Year Grades: First Class Honours (84.56%)

- **Frederic Barnes Waldron Best Student Award**: Highest overall year average of all years of undergraduate programmes.
- **Best Student Award Mechanical Engineering**: Highest overall year average in the Mechanical Engineering programme.

Kolej Yayasan UEM September 2021 – June 2023
CAIE A-Levels: Physics (A*), Chemistry (A*), Mathematics (A*), Further Mathematics (A*)
IELTS: Overall Band Score 8.5 (Listening 9.0, Reading 9.0, Speaking 8.5, Writing 8.0)

WORK

Intern, Ove Arup & Partners Limited June 2025 – July 2025
London, United Kingdom

- Part of the project team for a specialist **plant collection and research facility**, two **prominent London museums** and a **premium lab space.**
- Designed condensate routing options for Mechanical Ventilation Heat Recovery (MVHR) units in **Dalux**.
- Pressure duct calculations for intake and extract air for different MVHR units for duct sizing with **BIM** and **REVIT**.
- Area scheduling on updated architect floor plans, classifying areas through room type, conditioning strategy and AHU service to be used by other engineers in their calculations in **Bluebeam Revu**.
- Conducted ventilation calculations and louvre sizing calculations.
- Embodied carbon calculations for different Fan Coil Unit (FCU) servicing option via Arup's in house workflow tool.

TECHNICAL SKILLS

Undergraduate Researcher at FLOW Lab August 2025 – Present
Berkeley, United States of America

- Designing a physical enclosure for high sensitivity **ME3 Photon Detector** array to be used for analysis of flow regimes.
- Developed a **Raspberry Pi Pico W**-based cooling controller system, featuring **PWM pump regulation** and a visual/auditory alarm system (OLED/LED/Beeper) to prevent thermal damage.
- Designed and 3D-printed a **custom air generation module** featuring a high-efficiency fan funnel and MEMS velocity sensor to actively monitor and regulate dry-air purging.

Mathematical Modelling and Data Analysis September 2023 – Present
London, United Kingdom

- **Population Modelling:** Developed MATLAB models using Logistic and Malthusian growth equations to forecast global population dynamics, estimating carry capacity and growth parameters from historical census datasets.
- **Pandemic Simulation:** Simulated COVID-19 and H1N1 outbreaks using SIR compartmental models to quantify transmission rates and peak infection thresholds through Least Squares Regression and Euler's method.
- **Structural Analysis:** Analysed bridge resonance and damping effects by solving second-order ODEs and the wave equation, utilizing Fourier series and finite difference methods to evaluate structural sensitivity.
- **Image Processing:** Engineered a MATLAB tool using Singular Value Decomposition (SVD) and vector calculus for high fidelity compression and edge detection, balancing data reduction with structural preservation.

Engineering Projects September 2023 – Present
London, United Kingdom

- Engineered a 1kg balsa wood pylon using **GSA Structural Analysis** and **truss theory** which successfully sustained a **record-breaking load of 235N** during physical performance testing.
- Developed an intensive iterative numerical model on **Microsoft Excel** to simulate water level dynamics and ensure consistent energy output for a proposed **3MW dam in Uganda**.
- Optimized an **LVAD impeller** via numerical modelling to meet flow and pressure targets while minimizing misalignment, utilizing **CES Edupack** performance indices for material selection.
- Conducted **cradle-to-grave eco-audits** and used **weighted decision matrices** to evaluate the environmental impact and material performance of medical device components based on client proposals.

Engineering Software September 2023 – Present

- Leveraged **MATLAB** to solve complex challenges in control, instrumentation, and fluid mechanics by developing custom scripts for numerical optimization and data analysis within real-world engineering contexts.
- Conducted Finite Element Analysis (FEA) in **Ansys** to assess stress, deformation, and material performance under varying boundary conditions, ensuring the structural integrity of components under realistic loading scenarios.
- Performed control system analysis in **Simulink** by modelling DC motor performance through transfer functions and evaluating dynamic responses to various signal inputs to optimize system stability and transient behaviour.
- Utilized **Fusion 360** for the design and iteration of complex mechanical assemblies, including rocket hardware and reusable vehicles, producing manufacturing-ready CAD models for rigorous performance evaluation and testing.

EXPERIENCES AND ACTIVITIES

Recovery Systems Lead, UCL Rocket October 2023 – Present

- Part of the eight-member First Year Innovators in Rocket Engineering (F.I.R.E) team that represented UCL and won **first place in the National Rocketry Championships 2024 (NRC' 24)**.
- Designed the ServoMag parachute ejection system, actuated electronically through a servomotor and an electromagnet to allow for precise deployment of the recovery system.
- Developed and tested a **sealed bulkhead system** with an ejection canister containing black powder, which successfully deployed during NRC' 24 and allowed for successful recovery of our rocket and payload.
- Designed a dual-deployment recovery system encompassing a main parachute and drogue parachute used in our rocket at **Spaceport America Cup 2025** held in the Midlands, United States. The rocket was recovered successfully, and the team ranked **first amongst all UK & EU entrants**.

Founder and Advisor, Sarawak Student Initiative (PPBM: KT17276/13/25) December 2021 – Present

- Founded an initiative with the aim of promoting awareness and spreading information regarding higher education targeted towards secondary school students in Sarawak.
- Focused on supporting those with limited accessibility to educational resources, ensuring equal learning opportunities.
- Conducted a series of **online scholarship talks** over a week which attracted over 100 participants in summer 2022.
- Advisor for our flagship event, the **Sarawak Education Outreach Roadshow** organised in the summers of 2023 to 2025, with physical interactive roadshows over 5 cities (Kuching, Miri, Bintulu, Sibu, Kota Samarahan).
- **Collaborated with different entities** such as Sarawak Volunteers, Sarawak Energy Berhad, Rotary Club of Kuching, Swinburne University of Technology, University of Technology Sarawak, University Malaysia Sarawak (UNIMAS) and Yayasan Hasanah on our workshops.
- Expanded our footprint by coordinating team travel to **rural Sarawakian schools**, providing guidance to students in remote regions with limited access to city-based resources.
- Developed a **centralised Notion page** featuring detailed information on scholarships and their requirements.

Secretary, Sarawak Students Association – United Kingdom October 2023 – May 2025

- In charge of streamlining the paperwork behind many of SSA-UK's events which included cultural celebrations and networking opportunities, which was done through **Google Workspace**.
- Introduced a membership system managed through Rubric which provided members with an **Apple/Google Wallet pass** and simplified the membership management process.
- Authored and designed the **SSA-UK newsletter, titled "The Hornbill Gazette"** which was sent out to subscribers of our mailing list, updating fellow members on the happenings back home in Sarawak and in the United Kingdom.
- Organised **SSA-UK's first ever Annual General Meeting**, which included logistical and itinerary planning. Implemented the usage of Google Forms and QR codes to set up a confidential voting mechanism to elect the new group of committee members, ensuring transparency and fairness at all times.
- Secretary of **Lan Berambeh Anak Sarawak Edisi UK (LBAS-UK)**, handling event proposals, reimbursement guidelines and registration forms for the flagship event which attracted over 500 Sarawakian students and diaspora from the UK, Ireland and all over Europe.

Volunteer, Ministry of Health Malaysia June 2021 – August 2021

- Part of the **frontline workforce** administrating the first batch of COVID-19 vaccines to Sarawakians.
- Job scope included **crowd control, vaccine registration and assisting fellow doctors**.

Sergeant, Band Major and NCO Council Chairman, Boys' Brigade in Malaysia January 2011 – September 2023

- Organised weekly parade meetings with activities such as drill, camping, first aid and cooking.
- Conducted weekly band training sessions and led the percussion, woodwind and brass sections for performances.
- Oversaw Band Camps, Drill Camps, Fun Camps and Leadership Camps over my tenure as council chairman.

PERSONAL

Interests: Volunteering, Piano, Drums, Debating, Public Speaking, Reading, Badminton.
Skills: Python, MATLAB, GSA Structure Analysis Programme, Fusion 360 (AutoCAD), Microsoft Office, Simulink, Ansys.