Zhe Wei Kho

Mechanical Engineering student with over five years of experience leading teams. Proficient in **composites manufacturing, design for additive manufacturing, finite element analysis, CAD,** and **project management**.
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EDUCATION

Imperial College London, United Kingdom — 2025 – Present
MSc Composites: The Science, Technology and Engineering Application of Advanced Composites
Advanced Manufacturing, Lightweight Structures, Finite Element, Design for Additive Manufacturing, Full List

- IMechE Postgraduate Scholarship Award – £5,000

The University of Sheffield, United Kingdom — 2022 – 2025
BEng (Hons) Mechanical Engineering — *First-Class (Top 5% in cohort)*
Manufacturing Systems (87%), Mathematics for Engineering Modelling (87%), Fluids Engineering (85%), Materials Processing (84%), Computational and Numerical Methods (80%), Advanced Engineering Thermodynamic Cycles (78%), Full List

- International Undergraduate Merit Award – £12,500 each year
- Faculty of Engineering Excellence Scholarship – £1,000 each year
- Sheffield Engineering Leadership and Service Award (SELSA) Cohort 2023 – leadership academy
- Edgar Baildon Prize in Mechanical Engineering – highest grade in mechanical design modules (80.2%)

WORK EXPERIENCE

DJI DronesKaki Sarawak
One of Malaysia's largest drone distributors, service and training providers for DJI. https://droneskaki.com/
Enterprise Operations Intern — Aug 2025 – Sep 2025

- Supported DJI drone retail, repair, B2B sales (via AutoCount POS), and field deployment, including mapping operations at quarries, agriculture pest management, and state-of-the-art government cleaning operations.

INSIGNEO Institute
The institute for *in silico* (computational) medicine at the University of Sheffield. https://sheffield.ac.uk/insigneo
Undergraduate Researcher — Jun 2024 – Jul 2024

- Researched a novel **additively manufactured (AM) titanium** porous structure to improve orthopaedic implant success rates by enhancing osseointegration (bone ingrowth) through personalisation.
- Designed a Python script for automating the design process to reduce simulation times to **<15 minutes**; implemented using **Ansys Mechanical APDL FEA** and nTop implicit modelling software.
- Managed the project independently under the supervision of Dr Vee San Cheong to meet all main objectives **within 6 weeks**; Note: this project was extended as a final-year project.

2H Offshore
Renewable energy structural engineering company serving clients like Shell, Wood, and Baker Hughes. https://2hoffshore.com/.
Structural Engineer Intern — May 2022 – Aug 2022

- Designed spreadsheets to analyse pad eyes and cathodic protection systems with MS Excel VBA Macros to automate processes; worked with PTS 11.22.02 and DNVGL-RP-B401 standards.
- Verified feasibility of designs and accuracy of engineering drawings in **SOLIDWORKS** and Ansys Mechanical FEA for client delivery; worked with ISO fasteners.

STUDENT TEAMS

Project Hex
Student-led drone team specialising in autonomous Unmanned Aerial Systems (UASs).
Lead Structural Design Engineer — Jul 2023 – Jul 2024

- Co-led the redesign of Vulcan V3, a 20kg, 3.2-meter wingspan eVTOL drone capable of deploying **five medical packages**; achieved overall mass reduction of 20%.
- Developed the team's first winch-operated delivery system controlled via Arduino Nano and Raspberry Pi 4; >40 drop tests were performed from 15 meters over 6 months under **IOSH safety standards**.
- **Innovated manufacturing processes** by designing moulds to be manufactured via **additive manufacturing** instead of CNC milling for wet layup carbon fibre composites which **cut lead times by 83%** down to 1 week.
- Implemented a **new component management system** and migrated project management tools to Google Workspace to improve collaboration across our 60 members.

PROJECTS AND COMPETITIONS

RideCanada4MS Recumbent Trike Fairing Oct 2024 – Apr 2025
Student Project – project management, client management, process planning

- Led the development of a fairing to improve cycling efficiency while travelling **8000 km** across Canada to raise **1 million USD** for multiple sclerosis.
- Planned and executed **3-week** manufacturing timeline to large prepreg carbon fibre fairing components.
- Manufactured custom high-temperature moulds using 3D printed negatives and glass-fibre epoxy paste.

Electric Bicycle Gearbox Sep 2023 – May 2024
Module Project – project management, finite element analysis, design for manufacturing (DFM)

- Led the design of a 2-step reduction gearbox – in line with EAPC restrictions, placed **top 1% in efficiency.**
- Developed a prototype and manufacturing plan to deliver the gearbox within 24 weeks.
- Verified gear design strength analytically and numerically with static load and buckling FEA analysis.

Water Bottle Rocket Mar 2023 – Jun 2023
Module Project – thermodynamics, dynamics, fluids

- Led the design of a rocket for delivering medical supplies, achieving top 20% in accuracy.
- Developed a **MATLAB app** to simulate rocket trajectory to calculate the angle and pressure required.

Engineering You're Hired: Prosthetics Device Case Study – 1st Place Feb 2024
Module Project – business management, product design, materials selection

- Developed a 222nm wavelength UV medical device to reduce inflammation caused by surgery, specifically for hip and knee joint replacement surgeries; received **distinction**.
- Selected product material using Ansys Granta Edupack, ensuring safety, sustainability and affordability.

SOCIETIES

Malaysian and Singaporean Night (MNight)
Award-winning student-led theatrical production showcasing Malaysian culture. https://instagram.com/sheffieldmnight
Technical Director Sep 2023 – April 2024

- Directed **70+ hours** of rehearsals comprised of 30+ scenes and 10+ musical performances, over 5 months.
- Set and managed the artistic vision of lighting, backdrop, and audio – notably liaising with the Student Union Technical Team to program 150+ lighting cues within 2 hours.

Young Malaysian Engineers (YME)
Engineering student body connecting Malaysian students worldwide to industry. https://www.ymeglobal.org/
Vice President of UK Chapter Oct 2022 – Jan 2024

- Led a team of 40+ in event planning, successfully hosting a 2-week case study challenge with Intel; attracting **120+ participants** across Malaysia and the UK.
- Redefined YME's internal culture by adopting data-driven decisions, monthly town hall meetings, and establishing exclusive internal events with partners such as **PwC**.
- Managed global **STEM outreach events**, such as the **Malaysia-UK Students Outreach Fair (MUSOF)** and the Malaysian Students' Technology Conference, with a total turnover of over 13,000 MYR.

VOLUNTEERING & EVENTS

SMSA SKY Career Empowerment Day Feb 2024
Provided internship insights to Malaysian students in Sheffield as a panel speaker for an audience of 50.

MCKL Engineering Society Workshop: Introduction to the Mechanisms of the Car Feb 2021
Introduced the mechanical features of a car, including the differential, gearbox, engine and electronic systems.

SKILLS

2D/3D CAD Design Modelling
Autodesk Fusion 360, nTop, SolidWorks, AutoCAD

Scripting & Data Analysis
Python, JMP, Granta Edupack, MATLAB, Simulink, PostgreSQL, MS Excel VBA Code

Finite Element Analysis (FEA)
Ansys Mechanical APDL

Electronics and Control Systems
Arduino, Raspberry Pi

Hobbies and Interests
Formula 1, Endurance running, Cooking

Languages
English – Native/Bilingual, Chinese – Professional, Malay – Professional, German – Beginner