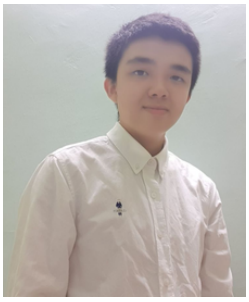

TAN LI LUN

Address: Bukit Jalil, Kuala Lumpur
Phone: +60-183697339
Email: lilun4608@gmail.com
Website: https://tanlilun.github.io/self-portfolio/

SUMMARY

Digital Twin Developer with a mechanical engineering background and expertise in creating computational models and front-end applications for engineering education. Skilled in building digital twins of real-life chemical and mechanical lab equipment, using front-end technologies (HTML, CSS, JavaScript, React, and TypeScript) to design user-friendly, interactive solutions. Passionate about integrating engineering concepts with digital tools to enhance learning and operational efficiency.

WORK EXPERIENCE

Digital Twin Developer, Solution Engineering Sdn Bhd. **Jul 2024 – Current**

- Developing Digital Twin computation models using Python.
- Designing algorithms and computational models to simulate systems in digital environments.
- Integrating advanced functionalities of developed models into the front-end interface using TypeScript code.

Research Assistant, Universiti Teknologi PETRONAS. **Sept 2023 – Apr 2024**

- Fabricated 3D hybrid nano-filled FRCs using vacuum infusion process (VARI).
- Investigated the effect of hybrid fillers on the flexural properties of 3D hybrid Nano filled FRCs.
- Carried out data analysis and optimization of results using design of experiment (DoE).

M&E Industrial Trainee, ViTrox Technologies Sdn. Bhd. **Sept 2022 – Apr 2023**

- Handled at least 6 new expansion and 7 renovation tasks related to M&E system.
- Feasible study of solar streetlights to be implemented at ViTrox Campus 3.0.
- Handled PA system project including planning, tendering, installation, and commissioning at ViTrox Campus 3.0 Phase 3A which cost around RM100k, and passed the Bomba Fire inspection for certification on 18 Apr 2023.
- Assist other facility engineers in documentation, feasible study and tendering of smart lighting system at the office block.
- Carried out research and fabrication of own indoor air quality monitoring system with V-ONE dashboard for office block at ViTrox Campus 2.0 which can save approximately up to RM20,000 compared to the quotation provided by the contractor.

EDUCATION

Bachelor of Mechanical Engineering with Honours **May 2020 - Apr 2024**
Universiti Teknologi PETRONAS, Seri Iskandar, Perak

- Latest CGPA: 3.75
- Specialization in Asset Integrity and Reliability.
- Thesis on "Effect of Hybrid Fillers on the Flexural Performance of 3D Fibre-Reinforced Composites".

Foundation in Science **May 2018 – May 2019**
QUEST International University, Ipoh, Perak

- CGPA: 3.85

ADDITIONAL INFORMATION

- **Technical Skills:** Front-end development (HTML, CSS, JavaScript, React, and TypeScript), Programming Language (C, C++, Python, MATLAB)
- **Languages:** English, Mandarin, Malay
- **Certifications:** HyperView & HyperGraph 2019 Intermediate Examination
- **Awards/Activities:** Recipient of YUTP Education Grant, Yayasan UTP Academic Excellence Incentive Recipient, Dean's List for 5 consecutive semesters, Silver in SEDEX 48 organized by UTP, Volunteer in Church Community

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PROJECTS

Engineering Education Web Application, SOLTWIN

Research and development (R&D) Developer

- Design algorithms for simulating models using Python.
- Validate algorithms and formulas created to ensure accurate implementation in alignment with existing physical equipment.
- Ensure effective communication between the web application and Python scripts for the developed models.
- Integrate advanced functionalities of developed models into the front-end interface.
- Create lab equipment schematic illustration using Inkscape.
- Create animation using TypeScript for better process workflow illustration to the users.
- Improve Python code performance to ensure a positive user experience with the web application.
- Ensure consistency in design by maintaining style guides across updated models within the web application.
- Guide the interns and share insights with the team.
- Successfully developed digital versions of lab equipment for food technology (FD20), heat transfer (HE350), thermodynamics (TH20), and environmental engineering (AP01, AP02).

Indoor Air Quality Monitoring System with V-ONE Dashboard

Student Industrial Project (SIP)

- Identified problems in the office block and carried out feasible studies to solve the problem.
- Performed 3D modeling, FDM 3D printing, PCB design, and soldering for prototype fabrication.
- Created a monitoring dashboard for data collection and visualization.

SMS Based Automatic Vehicle Accident Information System

Mechatronics Course Team Project

- Team lead to create demonstrable system prototype.
- C++ programming with Arduino IDE.
- Troubleshoot and debug in terms of hardware and software.

Automated Openable Face Mask

Team Lead of the Engineering Team Project (ETP)

- Collaborated with other engineering major students.
- 3D modeling with DesignSpark Mechanical and GUI programming with MY ROBOT TIME.
- Silver Award in SEDEX48 (Jul 2022).

All in One Robot with Arduino

Self-Directed Project

- Designed, fabricated, and programmed a functional prototype with Arduino IDE.
- Build a custom Android APK using MIT app inventor.
- Performed hardware testing and troubleshooting to fulfill desired outcomes.