

HOWARD WOON HAO ZHE

BACHELOR OF COMPUTER SCIENCE

(SOFTWARE ENGINEERING) UNIVERSITY OF MALAYA

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SUMMARY

Driven Software Engineering student (CGPA 4.00) specializing in full-stack development, AI/ML integration, and IoT solutions. Proven ability to build and deploy scalable applications under pressure, demonstrated through multiple award-winning hackathon projects across React, Node.js, and Python. Leveraging a background in corporate finance, brings rigorous analytical problem-solving and a data-driven approach to software architecture. Seeking a voluntary IT & AI internship to engineer high-impact, production-ready systems, with a strong willingness to extend the duration for the right opportunity.

TECHNICAL SKILLS

Languages: Java, Python

Frameworks & Tools: React, Node.js, Firebase, Git/GitHub, RESTful APIs

AI / Machine Learning: Gemini API, Ollama (Local LLM Deployment), Generative AI

Core Concepts: Data Structures, Version Control, RESTful API Integration, Computer System and Architecture, Computer System and Organization, Machine Learning, Network Technology Foundation, Human Computer Interaction

CORE COMPETENCIES

Assistant Finance Executive — *Kraiburg TPE Technology (M) Sdn. Bhd.*

Jun 2025 - Sep 2025

- Managed high-volume financial data pipelines, implementing strict verification protocols to ensure data integrity and transaction accuracy
- Applied analytical problem-solving to execute complex financial reconciliations, effectively "debugging" ledger discrepancies within enterprise reporting systems
- Processed vendor payments and employee expense claims in accordance with company compliance policy

Finance Intern — *Kraiburg TPE Technology (M) Sdn. Bhd.*

Mar 2024 - Jun 2024

- Supported budget monitoring and expenditure tracking to improve financial planning accuracy
- Gained early exposure to enterprise data systems and structured reporting workflows

TECHNICAL PROJECTS

CATFISH.AI — Fraud Detection ML System

Machine Learning Project

- Built a 6-model soft-voting ensemble (Decision Tree, MLP, SVM, Logistic Regression, KMeans, GMM) on a 50,000-row dataset
- Engineered a robust data pipeline using SMOTE-Tomek for class balancing and PCA for feature optimization; deployed the predictive model via a Flask REST API hosted on Vercel

Sensor X Sensei — Smart Lecture Hall Energy System

UM Technothon 2026 Top 15 Finalist

- Developed an end-to-end IoT solution leveraging ESP32 microcontrollers and multi-sensor data fusion (NFC, PIR, TOF) to power a real-time occupancy dashboard
- Automated kWh/CO2 calculations using Malaysia's national grid emission factor

- Engineered a Spring Boot backend implementing 7 hand-built data structures (doubly linked list, queue, stack, min-heap, weighted graph, HashMap, AVL tree) unified into a single end-to-end parking pipeline
- Implemented Dijkstra's shortest-path routing and a real-time interactive dashboard visualizing live heap re-heapification, AVL traversal, and O(1) hash table lookups

EDUCATION

Bachelor of Computer Science (Software Engineering) <i>University of Malaya CGPA: 4.00</i>	Oct 2025 - Mar 2029
Physical Sciences Program <i>Negeri Sembilan Matriculation College CGPA: 4.00</i>	2024 – 2025
SPM (Sijil Pelajaran Malaysia) <i>SMJK Yu Hua Kajang Result: 8A+, 1A, 2A</i>	2019 – 2023

LEADERSHIP & ACTIVITIES

Finance Lead <i>Persatuan Komputer Universiti Malaya (PEKOM)</i>	Jun 2026 – Present
- Lead the financial architecture and resource management for Universiti Malaya's flagship technology community, driving the annual fiscal strategy to sustain student-led tech initiatives, hackathons, and professional development programs - Architected and oversee the organization's financial portfolio, applying strict data verification protocols to maintain ledger accuracy and eliminate transaction discrepancies across all club operations - Partner cross-functionally with the Sponsorship and PR departments to secure funding from corporate tech sponsors, using data-driven budget models to maximize student value and operational scale - Spearheaded the transition from manual accounting to an automated digital claims pipeline, eliminating paperwork bottlenecks and scaling operational efficiency	
Treasurer <i>MYTECH Career Fair 2026</i>	Feb 2026 – Jun 2026
Managed a RM50,200 budget, secured 30 corporate sponsors and RM46,200 in revenue; enforced an 81.5% spending cap to deliver a RM9,272.90 surplus	

AWARDS & CERTIFICATIONS

2nd Place — AutoPilot Asia Hackathon 2026 (Sales Intelligence Track) Silver Medal — Symposium for the Peer Assisted Learning Program, KPM Matriculation Division 4th Place — International Junior War Cry Competition 2022	Gold Medal — Chemcreative-Innovation (Digital Learning) Bronze Medal — MATRIX eXTRA Quiz Challenge (MeX-Q), Computer Science Gold Medal — National PPAL 4.0 Innovation Day
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LANGUAGES

- Mandarin** (Native)
- English** (Fluent)
- Bahasa Malaysia** (Fluent)
- Cantonese** (Fluent)