

## EDUCATION

<b>Nanyang Polytechnic - Electronic and Computer Engineering</b>	03/2023 - Present
<ul style="list-style-type: none"><li>Cumulative GPA: 3.92</li><li>Awarded Director's List (AY2023)</li><li>Awarded Director's List (AY2024)</li><li>Awarded A*STAR Scholarship (2024)</li></ul>	<ul style="list-style-type: none"><li>Volunteered in the Peer Tutoring Program (2024)</li><li>Plant Pulse Project 1<sup>st</sup> in NYP SEG TechNexus Project Showcase (2025)</li><li>Plant Pulse Project nominated for Lee Hsien Loong - Interactive Digital Media - Smart Nation Award (2025)</li></ul>
<b>Woodgrove Secondary School - GCE 'O' Levels</b>	01/2019 - 07/2022
<ul style="list-style-type: none"><li>L1R4 - 14</li><li>In Charge of Logistics for Badminton (2022)</li></ul>	<ul style="list-style-type: none"><li>Achieved Edusave Eagles award (2022), Most Improved Student (2019)</li><li>Assistant in Charge of Logistics for Badminton (2021)</li></ul>

## EXPERIENCE

<b>Research Intern - Agency for Science, Technology and Research (A*STAR)</b>	02/2025 - 04/2025
<b>Complex Table Understanding Model Project</b>	
<ul style="list-style-type: none"><li><b>Table Extraction:</b> Evaluated and compared multiple table extraction methods, including Python libraries (e.g., img2table, PaddleOCR, Camelot-py), HTML, CSV, JSON, and LLM-based prompting for PDFs and images, to determine optimal performance across various file formats and methods.</li><li><b>LLM Prompt Optimization :</b> Refined Large Language Model (LLM) prompts, achieving a 15-20% improvement in extraction accuracy.</li><li><b>Research and Analysis :</b> Conducted in-depth research on table extraction techniques via Arxiv and ACL Anthology, synthesizing findings to draw actionable conclusions and recommend best practices.</li><li><b>Dataset Development :</b> Designed and built a QA pair dataset to rigorously test the model's performance, ensuring robust validation and reliability of results.</li><li><b>Industry Collaboration :</b> Contributed to a project involving Hyundai, processing tables from technical manuals.</li></ul>	
<b>ML &amp; AI Intern - National Computer Systems (NCS)</b>	08/09/2025 - Present
<b>Multi-Agent AI System (Proof-of-Concept)</b>	
<ul style="list-style-type: none"><li>Enhanced a RAG-based AI agent with hybrid search, metadata filtering, and hallucination-aware regeneration using Milvus and Docling.</li><li>Replaced LangChain with a modular ingestion pipeline and built a user-friendly React + FastAPI frontend with streaming responses and dynamic visual feedback.</li><li>Implemented Text-to-SQL with auto-generated charts and evaluated response quality using an LLM-as-a-judge framework.</li><li>Containerized the system with Docker for AWS deployment and produced demo videos used in pre-sales client pitches.</li></ul>	
<b>Logistics Scheduling Optimization System (Proof-of-Concept for MNC)</b>	
<ul style="list-style-type: none"><li>Developed a React-based scheduling interface that translates abstract outputs into intuitive, date-based timelines with real-time feedback and visual progress indicators.</li><li>Developed a dynamic configuration panel, enabling users to adjust trade-offs like runtime versus schedule quality.</li><li>Built an operational dashboard with interactive charts and inventory summaries to support rapid feasibility assessment.</li><li>Produced a polished demo video showcasing core features, used in internal reviews and client-facing pre-sales presentations.</li></ul>	

## PROJECTS

<b>PlantPulse - Full Stack IoT Smart Community Garden Project</b>	Tailwind CSS, React TS, Python, SQLite
Awarded 1 <sup>st</sup> in NYP SEG Tech Nexus Project Showcase 2025, and nominated for Lee Hsien Loong - Interactive Digital Media - Smart Nation Award 2025	
<ul style="list-style-type: none"><li>Led a group of 4 to develop a full-stack IoT solution enabling smart gardening through real-time monitoring, user management, and AI-driven advisory features.</li><li>The frontend consists of a landing page, web dashboard, user authentication, and a chat page with AI advisor Sprout. Frameworks and libraries used include Nextjs, ShadCN UI, lucide-react, Spline 3D.</li><li>The backend consists of a python web server using Flask, SocketIO and spaCy for the AI. Enabling real time communication between IoT devices and the users.</li></ul>	
<b>Logic Gate Circuit Solver - Personal Project</b>	HTML, React JS, C
<ul style="list-style-type: none"><li>Developed a web app for users to create a logic gate circuit using the drag and drop UI and generate the respective truth table for the circuit. Built using React, Javascript, React Flow, and C.</li><li>Users connect the nodes found on the logic gate blocks to construct the circuit and download the txt file that will be copied over to the directory of the C program and then run the C program to get the truth table.</li></ul>	
<b>Wings Of Sustainability - IoT Black Soldier Fly_(BSF) Rearing Project</b>	Python, M5Stack, Qubitro, MQTT
<ul style="list-style-type: none"><li>In a group of 3, developed an IoT system for a sustainable BSF rearing farm, utilising M5Stack micro-controllers to record environmental conditions and reduce manpower requirements by a significant percentage.</li></ul>	

## SKILLS

- Software Development** - (Proficient): Python, HTML, CSS, Javascript, Typescript, React, LangGraph, LangChain, Docker, Github.  
(Familiar): AWS SageMaker, SQL, C, C#, React Native, hugging face
- Electronic System Design and Analysis** - (Proficient) Electronic Circuit Analysis, Electronic Devices Applications and Digital Electronics.  
(Familiar): Autodesk Eagle, ATmega328pb, Soldering.
- IoT System Design** - (Proficient) Arduino Uno, M5Stack Fire Duo, Beaglebone, Web SocketIO (Familiar): MQTT, Qubitro.

## REFERENCES / ADDITIONAL INFORMATION

- (Participated) NUS HumanITy Hackathon 2025**
- English (Native or Bilingual Proficiency)
- Nanyang Polytechnic**  
Mr Toh, Personal Mentor | Course Manager  
+65 6550 0672 • [Toh\\_weizhong@mymail.nyp.edu.sg](mailto>Toh_weizhong@mymail.nyp.edu.sg)
- (Participated) BrainHack 2025**
- Chinese (Limited Working Proficiency)
- NCS**  
Wenjing Ma, Supervisor | Senior Data Scientist  
[wenjing.ma@ncs.com.sg](mailto:wenjing.ma@ncs.com.sg)
- (Participated) NCS AWS AI League 2025**