# Jethro Chia

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http://github.com/Shockz132 · http://github.com/Shockz132/Portfolio

## DIPLOMA HOLDER

An Electronic and Computer Engineering Polytechnic Student, passionate about computers and coding, a curious problem-solver with a love for exploring new technologies. Always eager to learn and grow, wanting to create innovative and impactful solutions that contribute to society.

## EDUCATION

**Nanyang Polytechnic**
Electronic and Computer Engineering 03/2023 - Present
3.95 CGPA
Academic Achievements

- Awarded Director's List (AY2023)
- Awarded Director's List (AY2024)
- Awarded A*STAR Scholarship (2024)
- Volunteered in the Peer Tutoring Program (2024)

**Woodgrove Secondary School**
GCE 'O' Levels 01/2019 - 07/2022
L1R4 - 14
Academic Achievements

- Achieved Edusave Eagles award (2022)
- Achieved Most Improved Student (2019)
- In Charge of Logistics for Badminton (2022)
- Assistant in Charge of Logistics for Badminton (2021)

## WORK EXPERIENCE

**Agency for Science, Technology and Research** **02/2025 - 04/2025**
**Research Intern**
The Agency for Science, Technology and Research (A*STAR) drives mission-oriented research that advances scientific and technological discovery.

Achievements/Tasks

- **Complex Table Understanding Model Project**
- **Table Extraction:** 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.
- **LLM Prompt Optimization :** Refined Large Language Model (LLM) prompts, achieving a 15-20% improvement in extraction accuracy , demonstrating strong analytical and problem-solving skills.
- **Research and Analysis :** Conducted in-depth research on state-of-the-art table extraction techniques via Arxiv and ACL Anthology, synthesizing findings to draw actionable conclusions and recommend best practices.
- **Dataset Development :** Designed and built a QA pair dataset to rigorously test the model's performance, ensuring robust validation and reliability of results.
- **Industry Collaboration :** Contributed to a project involving Hyundai , processing tables from technical manuals, showcasing adaptability to real-world industry applications.

## SKILLS

- **Software and Web Development**
- Proficient in Python, C, C#, HTML, CSS, JavaScript, Typescript, React, SQL. Creating dynamic, user-friendly web applications using frameworks such as NextJS, React, Node.js, ShadCN UI.
- Created a Logic Gate Circuit Solver website 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, Node.js, C.

- Created a Smart Gardening website for an automated gardening farm. Users have real time monitoring and data analytics on their plants, viewed from the dashboard hosted on a web server. Built using Javascript, Typescript, React, NextJS, ShadCN UI, Spline 3D and spaCy.
- Created a Food Stall website to showcase and promote a food stall's menu, pricing, and their operating hours. Allow customers to order online or through a mobile app. Built using HTML and Vanilla CSS.

**Internet Of Things (IoT) System Design**

- Proficient in designing end-to-end IoT solutions, integrating hardware, software, and cloud components such as Aruino Uno, M5Stack Fire Duo, BeagleBone Black Wireless, ATmega32pb, MQTT, Qubitro, WebSocketIO, etc.
- Embarked on an M5Stack Black Soldier Fly Rearing Project which aims to make insect farming more efficient by automating most of the manual labour and creating a self-sustaining ecosystem between insects and plants. Built using M5Stack Fire Duo, Python, MQTT and Qubitro
- Created a Smart Gardening System for automated gardening. Each Beaglebone Black Wireless connected to a mikroBUS Cape Board with the respective clicks attached, e.g. force click, motion click, environment click, gesture click, analog key click, etc. . Built using Python, WebSocketIO

**Electronics System Design and Analysis**

- Proficient in PCB Design, Electronic Circuit Analysis, Electronic Devices Applications and Digital Electronics. Familiar with using AutoDesk Eagle and Soldering Components.
- Created a Microcontroller System Design using the ATmega38pb microchip and designed part of the schematic and the entire pcb including the routing.
- Created a Digital Thermometer using Op Amps and LEDs and designed some of the schematic and the entire pcb including the routing.

**Automation & AI Tools:**

- Proficient in Python, Git, Github and Limited Proficiency in spaCy. Experienced in using Python for automating workflows and scripting tasks. Familiar with spaCy for AI-related projects, and proficient with Git and Github for version control and collaborative development.
- Collaborated with a team on a Full Stack IoT Smart Gardening website for an automated gardening farm using Github.
- Integrated a chatbot using spaCy into the website of the Smart Gardening website.
- Developed multiple open source projects on Github both personal and for school.

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## CO CURRICULAR

**Woodgrove Secondary School**

- Badminton (In Charge of Logistics), 2021-2022
  - Played an Active Role in handling transportation of equipment to the venues
  - Achieved 4th in the “B” Division Competition

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## HOBBIES / INTERESTS

- Cooking
- AI & Machine Learning
- Software Development
- Computer Engineering

## REFERENCES

**Nanyang Polytechnic**
Mr Toh, Personal Mentor / Course Manager
+65 6550 0672
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**A*STAR**
Dr Zou Bo Wei
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## LANGUAGES

- English (Native or Bilingual Proficiency)
- Chinese (Limited Working Proficiency)