

# Ethan Chan

Phone: 832-871-7541 | Email: [tzuyic2@illinois.edu](mailto:tzuyic2@illinois.edu) | LinkedIn: [ethan-ty-chan](#) | GitHub: [@tzuyichan](#)

## EDUCATION

### University of Illinois Urbana-Champaign

Urbana, IL

Master of Computer Science

Jan. 2024 – May. 2025

- **Courses:** Databases, Distributed Systems, Networks, Computer Architecture, Parallel Programming

### National Cheng Kung University

Tainan, Taiwan

B.S. Double Major: Computer Science, Energy Engineering

Sep. 2017 – Jun. 2022

- CS Major GPA: 3.9/ 4.3 | Received full-ride scholarship
- **Courses:** Compilers, Operating Systems, Data Structures and Algo, OOP, Machine Learning

## SKILLS

### Programming

C/C++, Python, Java, JavaScript, MATLAB, SQL

### Frameworks

React, Node.js, MySQL, MongoDB, Neo4j, Flex, Bison, Qt

### Packages/Tools

Linux, OpenMP, MPI, OpenCV, Scikit-learn, PyTorch, GCP, Docker, Valgrind, Make, Git

## WORK EXPERIENCE

### Motorola Solutions Inc.

May. 2024 – Dec. 2024

Software Engineer Intern

- Developed **embedded battery calibration software** for next-gen fuel gauge ICs using **embedded C**, **OneWire**, and **I2C**, which eliminated a critical single-source dependency and **reduced production costs** by **over 2.5 million USD**
- Received **high praise** from the **Senior Vice President** for project delivery and presentation clarity during the final demo
- Implemented **Scrum** project management and facilitated communication between project shareholders

### Nightingale AI Co., Ltd.

Sep. 2021 – Aug. 2022

Software Engineer Intern

*Chimei Hospital Medical e-Certificate Platform (TypeScript, React, Docker, GCP)*

- Coded and deployed the medical document verification **website frontend** for **Taiwan's leading hospital** using **Typescript**, **React**, and **Docker**, which **replaced lengthy in-person paperwork** with a 3-minute online process
- Enabled a **daily user base of 7,500+ people** to upload and verify electronic medical documents

*IoT Service for Energy Monitoring (Python, Scikit-learn, PyTorch)*

- Engineered a **cloud-based service** with a team of 5 people that leveraged **unsupervised machine learning** and rule-based algorithms to **detect pattern anomalies** in household power consumption
- **Achieved over 90% accuracy**, which reduced electricity bills and help detect home accidents for 100+ households

### Institute of Information Science, National Academy of Taiwan

Jul. 2020 – Aug. 2020

Research Intern

*Supervised by Dr. Da-Wei Wang, who specializes in medical informatics research*

- **Architected and coded the preprocessing pipeline** for a 2000-feature dataset containing over 160,000 samples of bacteria MALDI-TOF mass spectrometry profiles for **ensemble learning**
- **Conducted 5+ machine learning experiments** including Random Forest and XGBoost to **detect antibiotic resistance** in a 2,500-sample *Staphylococcus aureus* dataset
- **Accurately predicted 88%** of antibiotic-resistant samples, a **15% increase compared to the baseline**

## PROJECTS

### MyDB (C++, Linux)

Rice University, 2023

- **Coded a relational database management system in C++** from scratch, which supports SQL queries for relational operations and performs efficient record management using a B+ tree

### Java Compiler (C, Flex, Bison, RegEx)

National Cheng Kung University, 2022

- **Coded a compiler in C** that compiles MicroGo code to Java bytecode and runs on the Java Virtual Machine
- Supports functionalities including type conversions, if/else/switch cases, for/while loops, and function calls