# Jingtian Hu

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## Education

**University of Toronto** — Aug. 2024 - Present
*BSc: CS/ Data Science Double Specialist — Arts & Science Internship Program* — *Toronto, Ontario*

- cGPA: 4.0/ 4.0
- Received International Merit Admission Award: total worth of $50,000
- Relevant coursework: **STA130 An Introduction to Statistical Reasoning and Data Science**, **CSC207 Software design**, **CSC258 Computer Organization**

**Downing College Cambridge** — Aug. 2023 – Aug. 2023
*Certificate Course - Computer Science - graded A+* — *Cambridge, England*

- Studied machine learning (Python-based, used numpy, pandas, Matplotlib, and scikit-learn) and university-level math at Downing College, Cambridge
- Presented the RSA encryption algorithm for math and a performance analysis of supervised and unsupervised machine learning models fed by real-world data on credit evaluation for computer science as final projects

## Experience

**City University of Hong Kong - CALAS** — June. 2025 – Aug. 2025
*Exchange Research Intern - Supervised by Prof. Ray C.C. CHEUNG* — *Hong Kong, China*

- Built an RV32I softcore (a CPU based on RISC-V architecture) from scratch using High Level Synthesis (HLS) on PYNQ-Z2.
- Inserted a JPEG decoder to PYNQ-Z2 base overlay to process videos stored in MJPEG format which boosted processing speed **twice** compared to the ARM processing system.
- Developed a mono-tasking programmable system running on a bare-metal ARM that incorporates an editor, BF interpreter, and machine code parser.

## Extracurricular Activities

**UT Chinese Students and Scholars Association** — May. 2025 – Present
*Director of Campus Focus* — *Toronto, Ontario*

- Facilitated communication between UTCSSA and UofT
- Organized Campus Focus members to analyze data to understand member-wise participation for awarding
- Led a web project for managing resources, logging members' participation, and automating requests and Co-Curricular Record report generation

**New College, University of Toronto** — Sept. 2024 – May. 2025
*Jr. House Representative* — *Toronto, Ontario*

- Served on the New College Dining Committee as a student representative, advocating for student feedback and contributing to 3 improvements in future meal plan mode and pricing.

**STEM Club at MLIA-SZ** — Since Sept. 2022
*Cofounder* — *Shenzhen, Guangdong*

- Developed and delivered Arduino workshops to 10 students, teaching fundamental electronics and programming concepts and enabling them to build their own projects.
- Designed and constructed a functional RC boat using IR sensors and motors, demonstrating practical application of engineering principles and problem-solving skills.
- Organized and managed a remote-control boat racing competition for 8 participants, fostering teamwork, friendly competition, and showcasing student projects at the end of the semester.

## Projects

Enterprise Resource Planning Platform — *Django, Bootstrap + vanilla Javascript, gunicorn + docker* — Oct. 2024 – Present
*a web enterprise resource planning platform*

- Being tested right now by a group of 20 executives in the association. The system is planned to be used by 100+ members. Undergoing iterations every two weeks for improvements,
- Implemented an event and job approval and log system with feedback workflow,
- Members create profiles so that UTCSSA can smoothly collect the necessary data required for their school recognition credit application to increase association efficiency by an estimated **50%** and record member participation fairly.

Vodka — *Django REST, React, Google Gemini AI, SQLite, VPS* — Nov. 2025
*Winner, Best Domain Name - NewHacks 2025*

- Developed a full-stack AI travel platform with an interactive 3D globe (React) and a RESTful API backend (Django),
- Engineered the API to sync AI-generated itineraries between the web platform and a companion mobile ledger app,
- Implemented a key Gemini AI feature to parse receipt photos, automatically generate expense entries, and allow users to split bills.

MIDI parser — *Python* — Nov. 2025
*a parser for MIDI playback*

- Developed a Python parser by interpreting the MIDI technical specification to extract musical events from binary files,
- Engineered a robust solution to handle protocol details, including "Running Status" and non-standard SysEx messages,
- Project was created to translate complex MIDI files for use in a MIPS simulator for a University of Toronto Computer Organization (CSC258) course.

Easy Comm — *asyncio, socket, tkinter, openssl* — Jan. 2025
*a low-level, secure, and extremely performant software*

- Achieved efficient, low-level, secure communication with TCP sockets on TLS,
- Accomplished a user-friendly GUI client and a command line help manual with tkinter,
- Implemented efficient concurrent server design with asyncio so that **1000+** people can chat at the same time while the software is run on a single core (tested by spawning 1000 threads sending messages to each other)

## Awards

**University of Toronto - Summer Research Exchange Program (SREP)** — May. 2025
*Funding for successful nominees - awarded with $3000 CAD* — *Toronto, Ontario*

**University of Toronto - Capture The Flag** — Jan. 2025
*3rd. place within UofT division, awarded with $100 CAD* — *Toronto, Ontario*

**Canadian Computing Competition (Junior)** — Nov. 2022 – Feb. 2023
*Perfect score: 1st in the Honor Roll* — *Shenzhen, Guangdong*

## Skills & Interests

**Skills**: Python (Django REST, NumPy, Requests, Tkinter), Java, C, JavaScript, R, SQL, HTML, Clean Architecture, Prompt Engineering
**Tools & Languages**: Git, Docker, Linux, Nginx, Cloudflare, Postman, Copilot, Claude Code — English (Fluent), Mandarin (Native)