

# Isaac Hung

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## EDUCATION

**Georgia Institute of Technology**, Atlanta, GA

May 2029

*Bachelor of Science in Computer Science, with threads in Intelligence and Systems & Architecture*

**Sha Tin College**, Hong Kong

*IB Diploma Program score of 45/45 — maximum score in Math, Physics, Computer Science, Economics*

May 2025

## RELEVANT TECHNICAL SKILLS

**Computing Languages and Technologies** — Python, C/C++, Rust, Go, Java, JavaScript/TypeScript, HTML/CSS, Dart, SQL, Nix  
**Frameworks** — FastAPI, Flask, Svelte, SvelteKit, Astro, TailwindCSS, Drizzle ORM, Flutter

**Database Technologies** — SQLite, PostgreSQL

**Libraries** — NumPy, scikit-learn, pandas, OpenCV, PyTorch, LLVM, ROS 2

**Hardware** — NVIDIA Jetson Orin, Arduino, Raspberry Pi, Raspberry Pi Pico, ESP32

**Development Tools** — Git, GitHub, Docker, Jupyter, Linux, Bash, Vim/Neovim, VS Code, IntelliJ IDEA, Cursor

## WORK EXPERIENCE

**Hong Kong Polytechnic University**, Hong Kong

June 2023 — December 2024

*Research Project, Department of Aeronautical and Aviation Engineering (AAE)*

- Developed novel approach using memetic algorithms for planning space debris removal missions, outperforming state-of-the-art on performance indicators by up to 148%
- Pioneered a new methodology for quantifying space debris threat level through orbital environment simulations
- Implemented trajectory optimization using orbital mechanics, Hohmann transfers and the  $J_2$  perturbation
- Authored research paper as 1st author, winning first place at international science competition

*Research Intern, Intelligent Positioning and Navigation Lab (IPNL)*

- Built software-defined receiver in MATLAB for a novel low Earth orbit (LEO) navigation satellite launched March 2023
- Incorporated link budget design, antennas, fast Fourier transforms, and modulation schemes including BPSK and OFDM
- Enhanced GNSS signal strength from LEO, enabling robust and efficient ranging and navigation in urban environments
- Collaborated on autonomous vehicle navigation research using robotics technologies including ROS 2 and the CARLA autonomous driving simulator

**Outliners Education** (EdTech startup) — *UI/UX Design Intern*, Hong Kong

August 2022

- Designed functional Figma wireframe for innovative educational web platform
- Pitched to investors, securing funding from Hong Kong government and accelerating development by 2 weeks

## LEADERSHIP AND COMMUNITY ENGAGEMENT

**Sha Tin College Competitive Programming Club** — *Founder*, Hong Kong

August 2023 — December 2023

- Created teaching materials to teach theory and train members for the Hong Kong Olympiad in Informatics
- Developed a coding contest platform to judge code submissions and hosted regular programming contests at school
- Used Linux seccomp-bpf and rlimit APIs to securely sandbox remote code execution
- Applied parallel programming to speed up code execution time by 15x
- Achieved 167% improvement upon school record in HKOI and increased enrollment by 27%

**Sha Tin College Computer Science Project Club** — *Founder*, Hong Kong

August 2021 — May 2023

- Taught foundational hardware skills to students with the Raspberry Pi using self-developed curriculum
- Encouraged students to apply design thinking skills to address the UN Sustainable Development Goals
- Mentored 30+ students to develop collaborative programming projects, which include a robot car, automatic plant watering systems, and ambient monitor lighting solution

## AWARDS

S. -T. Yau High School Science Award (Computer Science) — Asia Champion & World Finals Top 10

CERN Beamline for Schools — World Top 50

Hong Kong Olympiad in Informatics — Top 60

## ADDITIONAL SKILLS AND INTERESTS

*Languages:* English (Native), Cantonese (Fluent), Mandarin (Fluent)

*Interests:* Badminton, Hiking, Cycling, Table Tennis