

Kuan-Cheng (James) Ku

📍 Taipei, Taiwan ✉️ ruby0322@ntu.im 📞 0983-588-092 🌐 rubytech.dev in James Ku 📧 ruby0322

Education

National Taiwan University *Master in Information Management* Feb 2026 – Present

National Taiwan University *Bachelor in Information Management (3.88 GPA)* Sep 2021 – June 2025

- Key courses include Web Programming, Deep Learning, Information Retrieval & Text Mining, Cloud Native Application.
- Teaching assistant for 1000+ students across 7 courses, including Web Programming (EE), Web APP Development (IM), Machine Learning, Data Structures, Systems Analysis & Design, Calculus, and Marketing Management (EMI course).

Work Experience

Research Development Intern, Microsoft Taiwan *TSMC OnePlatform Team, ISD* Apr 2025 – Jan 2026

- Led e2e testing from design to acceptance, executing 400+ test cases and coordinating QA-client validation.
- Identified 150+ bugs, built frontend analysis POC, and led cross-vendor meetings to accelerate bug resolution.
- Authored 300+ page LaTeX manual and delivered critical training sessions instrumental to successful project closure.

Contract Developer, National Chung Hsing University *NCHU Buddy Program* Apr 2025 – Sep 2025

- Shipped a RBAC dashboard featuring tasks, forms, notifications and google drive file system using Next & Supabase.
- Completed client acceptance, and successfully concluded project handoff. The platform is now serving 300+ MAU.

Research Experience

Research Assistant, National Taiwan University Hospital [📄 Journal Article](#) [📁 GitHub](#) Jan 2026 – Present

- Built a smart healthcare app for PD patients to assess exit-site infection risk at home using YOLO and CNN model.
- Leveraged autoresearch to efficiently reach 96.8% infection-screening accuracy, outperforming NTUH's work.
- Built top-performing model with MobileNetV3 transfer learning, differential LR fine-tuning & positive-class reweighting.

SARS: Social Advertising Recommendation System [📄 Report](#) [📄 Slides](#) Nov 2023 – Jan 2024

- Developed a graph-based social recommendation system using user interaction histories and social network edges.
- Built a trust-aware retrieval model using sentence embeddings and evaluated it via time-based future purchase prediction.

Self-StreamICL Improvement on DDXPlus [📄 Presentation](#) [📄 Report](#) Oct 2024 – Dec 2024

- Reproduced Self-StreamICL pipeline from StreamBench (NEURIPS 2024) on the DDXPlus dataset.
- Improved accuracy by 23% through structured prompting, refined label extraction, and enhanced RAG retrieval.

Achievements

Honorable Mention, IEC 2025: RenderResume [🌐 Product](#) [📄 Demo](#) [🏆 Certificate](#) Jun 2025 - Oct 2025

- Built an AI resume platform featuring chat-based editing, helping 300+ users optimize their resumes during Beta.

2nd Place, TSMC IT CareerHack 2024: deVopSCoDe [📁 GitHub](#) [🏆 Certificate](#) Feb 2025

- Shipped on GCP an AI maintenance toolkit featuring language conversion, version upgrades and perf optimization.

Projects

One-Click Outfit [📁 GitHub](#) [📄 Demo](#) [📄 Report](#) [📄 Poster](#) [📄 Slides](#) Jan 2024 – Jan 2025

- Led team of 4 to build AI fashion recommendation platform using Next.js and Flask for personalized styling.
- Improved performance 2.4x by migrating to PostgreSQL with vector indexing and Docker deployment on VPS.

Customized IT Solution for ShiJiou Cafe [📄 Report](#) [📄 Slides](#) Mar 2023 – May 2023

- Developed automated customer flow system for local coffee shop, addressing wait times and queue inefficiencies.
- Built online menu, LINE chatbot queueing, and unified backend using React, Express, Firebase & LINE Messaging API.

Skills

Languages: C/C++, Python, JS/TS, HTML5, CSS3, SQL, LaTeX / Chinese (Native), English (Fluent, TOEIC 950)

Fullstack: React, Next, Vue, Tailwind / Express, Flask, FastAPI / PostgreSQL, Supabase, MongoDB, Firebase

DS/ML/LLM: Numpy, Pandas / XGBoost, Pytorch (ResNet, CNN, RNN, Transformers) / LangChain, LangSmith

DevOps: Playwright, Jest / Docker, Docker Compose / Azure DevOps, GitHub Actions / Cloudflare, Vercel, Railway, GCP

AI Tools: Cursor (1.6B+ tokens used in 2025 📄) & Claude Code

Teaching

- Lecturer, NTU CSIE Sprout Program** [▶ Example Lecture](#) [≡ Example Slides](#) *Dec 2021 – Jun 2024*
- Designed and taught a C++ programming curriculum covering basic concepts, data structures & algorithms.
 - Co-designed hands-on projects where students implemented backend algorithm competing against AI, fostering teamwork.
- Lecturer, Taipei Municipal Datong High School** *Information Research Club* *Sep 2022 – Jan 2026*
- Lecturer, Taipei Municipal Zhongshan Girls High School** *Information Research Club* *Feb 2024 – Jan 2026*
- Taught a Python programming curriculum covering basic concepts, data structures & algorithms.
 - Launched capstone projects fostering teamwork and enabling students to apply programming skills to real-world problems.
- Teaching Assistant, NTU EE Web Programming** [≡ Community Notes](#) *Jun 2023 – Jun 2024*
- Contributed to an open-sourced and widely adopted modern full-stack development curriculum covering HTML, CSS, JS/TS, React, Next, Express and SQL/NoSQL databases, serving 300+ students per semester and external self-learners.
 - Designed and automated midterm hackathon coding assessments using Playwright with Gradescope integration.
- Teaching Assistant, NTU IM Calculus** [≡ Handout](#) *Jun 2022 – Jun 2024*
- Prepared materials and delivered in-person instruction covering limits, derivatives, integrals and differential equations.
 - Conducted exam review sessions and guided students through past papers to strengthen problem-solving skills.
- Teaching Assistant, NTU IM System Analysis and Design** [≡ Docs](#) [≡ Assignment](#) *Feb 2025 – Jun 2026*
- Co-designed and delivered a 3-week hands-on course covering modern full-stack development and DevOps.
 - Designed a hands-on cloud-native project and provided VM for students to deploy containerized apps via SSH and Docker.
 - Designed a series of assignments simulating startups, guiding students from problem discovery to MVP design & dev.
- Teaching Assistant, NTU IM Data Structures and Advanced Programming** *Feb 2025 – Jun 2025*
- Taught advanced C++ STL and its applications in practical data structures and algorithm design.
- Teaching Assistant, NTU IM Marketing Management** *EMI Course* *Sep 2023 – Jan 2024*
- Taught international business students prompting techniques like CoT, ReAct, roleplay & APE for research & analysis.
- Teaching Assistant, NTU IM Web APP Development** *Feb 2026 – Present*
- Teaching Assistant, NTU CGE Data Analysis and Machine Learning with Python** *Feb 2026 – Present*

Volunteering and Leadership

- Head of IT, NTU Information Management Student Association** *Jun 2022 – Jan 2024*
- Led development of a faculty interview platform to support students' bachelor project advisor selection.
 - Co-administered Linux workstation systems and Google Workspace for the department.
- Co-founder, NTUIM Competitive Programming Team** [@ Instagram](#) *Jan 2022 – Jun 2023*
- Co-founded the team, recruited 2 lecturers and 36 members, and raised NT\$100K worth of rental space sponsorship.
 - Delivered sessions on data structure and algorithm and regularly organized in-person ICPC-format contests on Codeforces.
- Chief Organizer, 2023 NTUIM Programming Contest: PDAO** [f Facebook](#) [≡ Article](#) *Dec 2022 – May 2023*
- Led organization of a nation-wide ICPC-format programming competition with cash flow exceeding NT\$100K.
 - Recruited 81 teams comprising 226 participants, including 10+ professional teams, and achieved satisfaction rate 4.21/5.
- Deputy Organizer, 2024 NTUIM Camp** [@ Instagram](#) [▶ Youtube](#) [📄 Brochure](#) *Jun 2023 – Jan 2024*
- Revived a 5-day camp from 4-year pandemic suspension and recruited 60+ staff with cash flow exceeding NT\$800K.
 - Oversaw marketing and design, a cross-functional department of 10, comprising art, publicity and photography teams.
 - Gained 1K+ followers and 500K+ impressions on social media within 6 months, contributing to 200+ registrations.
- Dev Lead & Event Planner, NTU Art Festival 2024** *Riddle City Team* [🔗 Legacy](#) *Jan 2024 – Jun 2024*
- Led dev team of 3 to build treasure hunt game integrating web and physical campus riddles using Next.js and Supabase.
 - Bridged planning, design, and dev teams to launch game engaging 200+ users with 600+ gameplay hours.
- Staff Member, NTU Photography Club** *Exhibitions Department* [🔗 Online Exhibition](#) *Jul 2023 – Dec 2023*
- Organized promotion booth and biannual exhibitions providing members with platforms to showcase their works.
 - Developed an online exhibition website using React.js and Firebase to expand exhibition reach and accessibility.