David Hua

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Technical Skills

- **Programming Languages:** Python (Pandas, Scikit-learn, TensorFlow, PyTorch, NumPy), Java (JavaFX), C, C++, JavaScript/TypeScript, SQL, R
- **Databases & Data Management:** SQL (DDL/DML, joins, aggregation), Relational Database Design, Normalization, ER Modeling, ETL Pipelines, Data Cleaning
- **Testing:** Test case design, Regression Testing, Bug Tracking, Defect Triage, JUnit, unittest, pytest, SuperTest, chai
- **UI/UX Design:** Prototyping (Figma), Interview/Observation/Survey Design, Thematic Analysis, Usability Testing, Heuristic Evaluation, UI mockup adaptation, Client-driven Iteration
- **Machine Learning & AI:** Classical ML models (KNN, Ridge, Random Forest, ensemble methods, etc), Recommendation System, Time Series, Model Evaluation & Deployment
- **Web Development:** RESTful services, Node.js, Express, React, HTML, CSS, JavaScript/TypeScript
- **Tools:** Docker, Git, GitHub, UML-based Architecture Design, Basic Linux Environments, CI/CD Pipelines

Note on course status: SQL fundamentals currently being strengthened through coursework.

Education

University of British Columbia, B.Sc in Computer Science — August 2024 – Present

- GPA: 4.33/4.33 (91.5/100)
- Honors: Faculty of Science International Student Scholarship, UBC Dean's Scholar
- Course Work: Machine Learning, Human Computer Interaction, Full stack Development, Database system

Chinese University of Hong Kong, Shenzhen, B.Eng in Computer Engineering — June 2023 – August 2024

- GPA: 3.7/4.0

Experience

Undergraduate Teaching Assistant (CPSC 110), University of British Columbia — Jan 2026 – April 2026

- Led weekly lab sessions for CPSC 110 (Computation, Programs, and Programming) with two other TAs, guiding 30+ students through programming exercises and conceptual challenges.
- Hosted office hours and actively supported students on Piazza, answering technical and conceptual questions to ensure timely learning support.
- Collaborated with instructors and TAs to align grading criteria and maintain consistent assessment standards across lab sections.

QA Intern, GHz Technology Ltd. — May 2025 – June 2025

- Conducted independent end-to-end testing of a hospital mobile application, covering full UI functionality prior to internal release.
- Designed and maintained 100+ structured test cases; identified 21 bugs and 4 usability issues, including 4 missed by the internal QA engineer.
- Collaborated with QA Engineers and developers to triage, report, and verify fixes using internal tracking tools.
- Supported UI design iteration in early stage of internship by adapting layouts based on evolving client requirements using Figma.

Undergraduate Research Assistant, CUHK(SZ) — January 2024 – July 2024

- Developed and implemented a web crawler to automatically retrieve ESG reports from corporate websites, enhancing data acquisition efficiency.
- Converted PDF documents into text, increasing data accuracy and reliability.
- Employed advanced large language models to extract critical information from text, streamlining the data

processing workflow.

- Created well-designed prompts, significantly reducing the incidence of hallucinated or inaccurate data by 4%, bolstering the integrity of research outcomes.

Finance Officer, CUHK(SZ) IEEE Student Branch August 2023 – July 2024

- Established financial oversight system for a 200+ member IEEE branch, managing reimbursements, student funding requests, and compliance with university policies.
- Initiated and managed a reimbursement project for IEEE membership fees, funded by the School of Science and Engineering, to boost student membership in the global IEEE community.

Projects

UBC Course Visual Planner View on GitHub

- Developed a course-visualizing and planning tool designed to assist students in planning their academic schedules and exploring future courses.
- Ensured accessibility by deploying the tool across multiple platforms, including a dedicated website and a PC application.
- Tools Used: React, TypeScript, Express, HTML/CSS, Figma

Identifier System to Enhance ASCII Art Recognition in LLMs View on GitHub

- Designed a lightweight content-moderation tool integrating LLM and VLM models to detect offensive ASCII art.
- Improved recognition accuracy from 12% to 81% and reduced hallucination from 88% to 14% through image-based rerouting.
- Implemented reproducible experiments and statistical validation (t-test, bootstrap) in Python.
- Tools Used: Python, OpenRouter

UBC Minecraft Player Engagement Analysis View on GitHub

- Analyzed player behavior on a UBC-hosted Minecraft server using player and session data to identify which types of players contribute the most data, aiding targeted recruitment for future research.
- Tools Used: Python (NumPy, Pandas, Matplotlib, Seaborn, SciPy)

Languages & Communication

- **English (Advanced)**
- **Mandarin (Proficient/Native)**
- **Shanghainese (Advanced)**
- **Franch (beginner)**