

# Winston Liang

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## Education

### University of Toronto - Hong Kong Scholar, Dean's List Scholar

Toronto, CA | Sept 2024 - Present

Bachelor of Science, Specialist in Computer Science and Data Science (Focus in Quantitative Finance) cGPA: 3.95/4.0

## Work Experience

### Summer Intern | Hong Kong Digital Policy Office

Hong Kong SAR | Jul 2025 – Aug 2025

- Designed and evaluated a **scalable LLM deployment** for government office use, laid the groundwork with **Ollama** and **Open WebUI** for the ongoing development, and presented a feasibility study to technical and non-technical stakeholders.
- Conducted in-depth research on **LLM context engineering and deployment strategies**, including **quantization, model distillation, hallucination mitigation**, and **RAG** to **reduce legal, compliance, and policy risk**, with a focus on **security-sensitive government applications**.
- Collaborated with internal teams to gather system requirements and produced a **holistic deployment proposal** covering architecture design, operational constraints, and security considerations.
- Developed a Python automation script **for scraping public vulnerabilities** and security alert generation, **significantly reducing manual compilation time from hours to minutes** and enabling the timely dissemination of **high-risk vulnerability alerts to 70+ government bureaus and departments**.

## Projects

### SceneClarity - UTMIST Developer | Pytorch, Tensorflow, Google Colab

Toronto, CA | Sept 2025 - Present

- Developed a **modular ML evaluation pipeline** within the University of Toronto Machine Intelligence Student Team to assess **autonomous-vehicle perception robustness under adverse conditions**.
- Performed **exploratory data analysis (EDA)** across multiple datasets to identify **data quality issues, distribution shifts, and failure modes**, informing model and training strategy.
- Applied **transfer learning** using **ResNet-18 and ResNet-50** on the **WeatherNet dataset** in PyTorch, experimenting with **fine-tuning depth, regularization, and evaluation metrics** to improve generalization.
- Collaborated in an **Agile workflow**, managing tasks in **Jira**, contributing to **GitHub pull-request reviews**, design discussions, and weekly standups to **Maintain code quality and architectural consistency**.

### Scoliosis AI | Next.js, PostgreSQL, AWS, Clerk, Prisma, NeonDB, PyTorch, YOLOv5

Toronto, CA | Dec 2025

- Built an **end-to-end full-stack AI web application** for **scoliosis detection** from spinal X-ray images, with a modular architecture separating **Next.js** frontend, backend APIs, and ML inference services.
- Implemented a **secure and scalable image pipeline** using **AWS S3** presigned URLs for direct browser uploads, persisting scan metadata and detection results in **PostgreSQL** (NeonDB) via **Prisma** ORM.
- Containerized and deployed a **FastAPI + YOLO inference service** using **Docker** on **AWS EC2**, enabling authenticated **server-to-server inference**.

### TripBuddy Application | Java (Swing, REST API)

Toronto, CA | Nov 2025

- Built a **Java desktop trip-planning application** using **SOLID principles and Clean Architecture**, enabling scalable trip and accommodation management.
- Authored **4,000+ lines of production Java code**, leading **REST API integration** and core accommodation features in a modular, testable codebase.
- Led project ideation and collaborated in a **6-person team**, participating in **design reviews, GitHub code reviews, and iterative planning** to enforce architectural standards.

## Scholarships

### University of Toronto International Merit Award | awarded for academic merit.

### Dato Tong, Luis Charitable Foundation Limited Scholarship | selected as 1 of the 4 Hong Kong Scholars.

### The Regents Participation Awards | for making a significant contribution to university student life

## Skills

**Skills:** Python, Java, HTML/CSS, JavaScript, React.js, SQL, Assembly (MIPS)

**Tools:** Git/GitHub, Jira, Linux, Docker, Google AppScript, Amazon Web Services, Tableau, Supabase, Prisma

**Certificates:** Supervised Learning, Advanced Learning Algorithms (DeepLearningAI), Azure AI Fundamentals (Microsoft),

Introduction to Cybersecurity (Cisco), Introduction to Cloud Computing and Software Engineering (IBM)

**Interests:** Machine Learning, Software Development, Quantitative Finance