

# Hongyuan (Steven) Liu

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## EDUCATION AND SKILLS

University of Pennsylvania - Master of Engineering in AI

Remote starting Aug 2025

University of Toronto - Honours Bachelor of Science

Sep 2020 – June 2025

- **Programs:** Double Specialist in Computer Science & Data Science with High Distinction **GPA: 3.9/4.0**
- **Selected Skills:** Java, **Python**, **SQL**, C, C++, R, **Java/Typescript**, HTML/CSS, **PyTorch**, TensorFlow, **React**, **NextJS**, **Flutter**, **Firebase**, **NodeJS**, Django, FastAPI, **AWS**, Google Cloud Platform, HuggingFace, **Git**, Docker, Linux, DNS, Unity Engine.

## PROFESSIONAL EXPERIENCE

**Full-stack Mobile Developer Co-op**

May 2023 – June 2024

Johnson Controls

Concord, ON, CA

- Co-led a **two-person team** to design and deliver a high-quality, fully-functional smart home app **from scratch**, owning 20+ pages of UI/UX design in **Figma**, iOS/Android development using **Flutter**, a robust **NoSQL** database with 10+ collections in **Firestore**, and a clean-architecture backend with fully **RESTful APIs** using **Firebase Cloud Functions** in **TypeScript**.
- Integrated **Google Cloud's** Geolocation for smart device location tracking, co-implemented the open-source **Home Assistant SDK** [🔗](#) to enable smart device automation, and incorporated **ChatGPT-3** with a task classification tree to support device control in chat.

**Founder and Team Leader**

May 2023 – Sep 2024

Campus Eats

Toronto, ON, CA

- Founded and **led a 15+ member team** across technology, business to build **Campus Eats** [🔗](#), a startup that revolutionized campus dining by introducing 5+ new dining options at **30% lower costs** for students. Accepted into the **UofT Hatchery Program**, where we conducted market research with 50+ restaurants and 500+ students to develop a **business plan** and a 5-year cash flow analysis.
- Delivered high-impact presentations, including the Hatchery Dominant Pitch and the Hult Prize Pitch, showcasing the Campus Eats' value proposition and attracting **6 investors with \$14,000 funds**.
- Developed a robust codebase with **over 30,000 lines** across multiple products, including an **iOS/Android** app using **Flutter**, a company landing website, an admin dashboard built with **Next.js** and **TypeScript**, a unified backend on **Firebase**, and a similarity-based **food recommendation system** using **Autoencoder** with food embeddings on past orders.

**Founding Full-stack Engineer**

Jan 2024 – May 2025

LockIn Inc.

Toronto, ON, CA

- Co-founded, developed, and **launched** the **LockIn App** on **App Store** [🔗](#) and **website** [🔗](#), reaching **5,000+ downloads** and **ranking #60** in Productivity. Designed a reward-based system to reduce student phone usage by integrating iOS Screen Time APIs in **Swift** and maintaining a local-vendor reward database, resulting in an average 30% decrease in screen time and improved focus.

**Research Assistant - University of Toronto**

Sep 2023 – Current

Jinesis Lab & FarDataLab

Toronto, ON, CA

- **LLM for Social Good** - Built an **LLM-powered** mentorship chatbot to support student research planning, incorporating insights from the ACL Mentorship Channel. Developed multiple video-to-chatbot pipelines using **LLM summarizers**, transcript-based **RAG**, supervised fine-tuning, and prompting. Evaluated pipeline performance across models including **Qwen-2.5** and **LLaMA-3**.
- **Accelerated Database Management System** - Designed and deployed three 5-node **PrestoDB** clusters on various **FPGA** and **GPU** configurations for research benchmarking. Ran **TPC-H** queries over 12+ hours across setups, identifying a GPU-only architecture that improved query performance by 20%.

## SELECTED PROJECTS

**StevenAI - A Chatbot answering all questions about me** [🔗](#)

[Github](#) [🔗](#)

- **Fine-tuned the LLaMA 3.2 model** with 1,000 Q&A pairs about me with a rank-16 **LoRA adapter** for efficient performance.

**AISim - 7-AI-player social simulation game** [🔗](#)

[Github](#) [🔗](#)

- Built using **Godot**, **FastAPI**, and **SQLite** to simulate player conversations, thoughts, and actions in a social deduction game. Integrated **LLaMA** for fast dialogue, **DeepSeek** for memory and strategy updates to generate goal-driven reasoning and interactions.

**Food-101 22-Class Image Classification** [🔗](#)

[Github](#) [🔗](#)

- Supervised-tuned **VGG**, **Inception**, and **ResNet** models on the Food-101 dataset and self-trained a **CNN** baseline using **PyTorch**.

**DIY AI Assistant – Chat and Control Devices** [🔗](#)

[Github](#) [🔗](#)

- Designed and deployed a **Raspberry Pi 5-based** AI assistant with **LLM-powered** voice interaction, custom **TTS**, smart home control via Home Assistant API, and a real-time GUI built with **Kivy** for voice feedback, touch interaction, and device control.