

Lin Hong

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Education

University of Waterloo

Bachelor of Computer Science (Co-op), Sept 2025 - June 2030

Skills

Languages: Python, Java, C++, JavaScript, TypeScript, Bash, HTML/CSS

Technologies: Node.js, React, Next.js, Tailwind, Flask, Postman, MongoDB, Git, Nginx, Docker

Experience

FTC Robotics Team | Senior Software Lead & Captain

Toronto, ON | Sept 2022 - June 2025

- Led a team of 15, mentoring rookies and resolving conflicts, achieving annual qualification for the Ontario Provincial Championships and representing Canada at the 2025 FTC World Championships in Houston, Texas.
- Initiated and developed **AI/ML** systems in **Java** and **OpenCV**, integrating **Google Teachable Machine** for **object detection**, **vision-based localization**, and **autonomous** navigation, boosting autonomous consistency by 70%.
- Directed mechanical and software design, creating six 3D robot **CAD** models in **Onshape**, and implemented real-time **telemetry**, motor control algorithms, and sensor integration using **TensorFlow** and **Android Studio**.

Linovation Design | Full Stack Developer

Toronto, ON | Summer 2024

- Founded a web design and ERP services business, generating \$2,300 profit in two months by delivering customized websites to small businesses and improving client operations.
- Designed 8 website prototypes in **Figma** and developed **frontend** solutions using **Next.js**, **React**, **JavaScript**, **TypeScript**, and **Tailwind CSS**.
- Improved client businesses through custom ERP integrations and workflow automation with **Odoo** and **Flask**, deploying projects via **Vercel** for streamlined delivery.

Projects

HomeLab

May 2025 - Present

- Built a **Linux** server and secured it with **key-pair auth**. Hosted a **Dockerized Node.js** website using **PM2** and **Cloudflare**-based routing and encryption.
- Secured **HTTPS** traffic with **Nginx** reverse proxy and self-signed **TLS** certificates.

Spotilike

June 2025

- Built a **full-stack** music platform with **Python Flask**, **Next.js/TypeScript**, and **Tailwind CSS** that helps users discover songs matching their emotions and life moments through real-time AI insights.
- Integrated **DeepFace**, **OpenCV**, and **TensorFlow** for emotion detection, and Google **Gemini** for text analysis.

Flaim Brain

Jan 2024

- Developed an AI academic mentor with a **Python Flask** backend and **TypeScript/React** frontend, enabling file uploads, note summarization, flashcard creation, and personalized study guides.
- Integrated **LangChain**, **OpenAI GPT-4**, **Google Cloud Vision**, and **MongoDB Atlas** vector search to build scalable **REST APIs** and semantic search, delivering personalized AI-driven learning experiences.

Ingredify

July 2023

- Built a mobile health app leveraging **React Native Expo**, **JavaScript**, and **Figma** to help users track food intake, analyze ingredients, and receive personalized dietary recommendations.
- Integrated **Tesseract OCR** to extract nutrition data from food label images and used **Cohere AI** for natural language analysis, storing and managing user profiles and dietary data with **MongoDB**.

Inner Voice

July 2023

- Developed a web app using **Next.js**, **TypeScript**, **Tailwind CSS**, and **DaisyUI** to generate multi-persona opinions, enabling users to interact hands-free through **speech-to-text (Whisper)** and **text-to-speech (OpenAI TTS)**.
- Built backend services with **Flask** and **LangChain**, integrating **OpenAI APIs** for conversational logic, and used **Postman** for testing and managing **RESTful** endpoints.