

Lin Hong

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10× Hackathon Winner · Software Engineer · Systems & Infrastructure Developer

EDUCATION

University of Waterloo

Sept 2024 – Apr 2028

Bachelor of Computer Science (Co-op)

- President's Scholarship of Distinction, Ted Rogers Future Leaders Scholarship for Women
- Relevant coursework: Algorithm Design, Data Structures, Operating Systems concepts

SKILLS

Languages: Python, Go, Java, C++, JavaScript, TypeScript, Bash, SQL

Technologies: Git, React, FastAPI, Docker, PostgreSQL, Redis, Linux, Nginx, Terraform, PyTorch

Systems: Distributed systems, container orchestration, automation, debugging, performance optimization, microservices

EXPERIENCE

Walnote AI

July 2025 – Present

Founding Engineer

Toronto, ON

- Architected and implemented scalable distributed system using **FastAPI**, **Docker** containerization, and **PostgreSQL** relational database, supporting microservices architecture with **Redis** pub/sub for real-time event broadcasting.
- Optimized large-scale video rendering pipeline by 5× through parallelization with **Celery** workers, **Redis** queues, and backend optimizations in **Python**; implemented scheduling and process control for job orchestration.
- Debugged complex system-level issues in production, troubleshooting storage and data platform tools; automated end-to-end infrastructure deployment with **Git** version control and GitHub Actions CI/CD pipelines.
- Designed and deployed cloud storage infrastructure using Cloudflare R2 for object storage, implementing container orchestration and virtualization strategies for scalable service deployment.

Linovation Design

Summer 2024

Full Stack Developer

Toronto, ON

- Designed and launched 8 production websites using **Next.js**, **React**, **JavaScript**, and **TypeScript**, implementing responsive design patterns and OOP principles for maintainable codebases.
- Built scalable **Flask** REST APIs with JWT authentication, **PostgreSQL** and MongoDB database integrations, and automated deployment workflows using **Docker** containers and **Git** version control.
- Troubleshoot and debugged production issues across frontend and backend systems, optimizing data structures and algorithms for improved performance and user experience.

PROJECTS

HomeLab | *Linux, Docker, Nginx, Cloudflare*

May 2025 – Present

- Built personal **Linux** server with SSH key authentication, HTTPS reverse proxying via **Nginx**, and **Docker** containerization for secure service deployment.
- Configured Cloudflare DNS/routing and implemented health checks with centralized logging for infrastructure automation and monitoring.

Chess Bot | *PyTorch, Modal, Python*

June 2025

- Built AlphaZero-style chess engine with unified policy-value network trained via large-scale self-play reinforcement learning using **PyTorch**; integrated neural priors into Monte Carlo Tree Search for improved decision-making.
- Ran distributed training and self-play generation on **A100/H100** GPUs via Modal, achieving high-throughput RL cycles with automated checkpoint evaluation and validation frameworks.

Skip the Walk | *Terraform, Commander.js, Slack API*

Sept 2024

- Developed CLI tool automating Domino's ordering and volunteer routing using **Terraform** for workflow automation and Slack API integration.
- Integrated Mappedin indoor navigation with retry logic and logging; won Best Use of Terraform at Hack the North 2024.