

# 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.
- Troubleshooted 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.