Lin Hong

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10× Hackathon Winner · Full-Stack Engineer · AI/ML 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, Software Design, AI/ML

SKILLS

Languages: Python, Go, Java, JavaScript, TypeScript, Bash, HTML/CSS
Technologies: React, FastAPI, Flask, Docker, AWS, MongoDB, PostgreSQL, Git, Next.js, PyTorch, LangChain, Redis
AI/ML: PyTorch, TensorFlow, LangChain, GPT-4, Reinforcement Learning, Vector Search

EXPERIENCE

Walnote AI July 2025 – Present

Founding Engineer *Toronto, ON*

- Built scalable REST **APIs** using **FastAPI** and **Python**, enabling real-time data synchronization through **Redis** pub/sub; optimized video rendering pipeline by 5× through parallelization.
- Developed full-stack infrastructure with Dockerized services, asynchronous Celery workers, and **PostgreSQL** integration, streamlining internal workflows and data processing.
- Deployed production systems with CI/CD automation, utilizing Cloudflare R2 for object storage and GitHub Actions for continuous deployment.

FTC Robotics Sept 2022 – June 2025

Senior Software Lead *Toronto, ON*

- Engineered internal tooling and telemetry pipelines aggregating multi-sensor data into unified state estimation systems, improving reliability by 20% and doubling response speed.
- Implemented PID tuning with hardware engineers, improving autonomous navigation accuracy by 70% through iterative optimization and cross-functional collaboration.

PROJECTS

Chess Bot | *PyTorch, Modal, Python* June 2025

- Built an AlphaZero-style chess engine with unified policy–value network trained via large-scale self-play reinforcement learning; integrated neural priors into Monte Carlo Tree Search, achieving ∼1600 Elo strength.
- Automated distributed training and self-play generation on A100/H100 GPUs via **Python** and Modal, enabling high-throughput **AI** training cycles and automated evaluation pipelines.

Flaim Brain | *Flask, LangChain, MongoDB* Jan 2024

- Implemented an **AI** mentor enabling file uploads, note summarization, and personalized study guides using GPT-4, Cloud Vision, and **MongoDB** Atlas Vector Search for semantic retrieval.
- Built internal tooling with **Python** and **Flask APIs** to streamline knowledge management workflows, placing 4th at Hack the Valley 8 among 80 teams.

Spotilike | *Flask, Next.js, TensorFlow, DeepFace* June 2025

- Created an **AI**-driven application matching songs to user emotions in real time using DeepFace, OpenCV, TensorFlow, Gemini, and Spotify **API**, demonstrating full-stack development with **React** frontend and **MongoDB** schemas.

Skip the Walk | *Terraform, Commander.js, Slack API* Sept 2024

- Built a CLI tool to automate Domino's pizza ordering and volunteer routing at Hack the North, demonstrating automation and internal tooling capabilities with **Python**.
- Integrated Mappedin for indoor navigation and **Terraform** for workflow automation, streamlining cross-functional operations and improving efficiency; won Best Use of Terraform at Hack the North 2024.