

# Lin Hong

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10x Hackathon Winner · High-Performance Systems Engineer · Machine Learning & Distributed Computing

## EDUCATION

<b>University of Waterloo</b> <i>Bachelor of Computer Science (Co-op)</i>	Sept 2024 – Apr 2028
– President's Scholarship of Distinction, Ted Rogers Future Leaders Scholarship for Women – Relevant coursework: Algorithm Design, Data Structures, Statistics, Machine Learning	

## SKILLS

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

**ML/AI Frameworks:** PyTorch, TensorFlow, scikit-learn, NumPy, Pandas

**Systems & Infrastructure:** distributed computing, high-performance systems, Docker, Kubernetes, AWS, Redis, PostgreSQL, MongoDB

**Development Tools:** Git, FastAPI, Flask, REST APIs, CI/CD, Linux, systems architecture

## EXPERIENCE

<b>Walnote AI</b> <i>Founding Engineer</i>	July 2025 – Present
– Designed and optimized high-performance video rendering pipeline using distributed computing techniques, reducing processing time by 5x through segment-based parallelization and backend optimizations. – Built scalable data pipelines and real-time event processing systems using Redis pub/sub and PostgreSQL, handling large-scale data streams with low-latency requirements. – Architected systems using Python and FastAPI with asynchronous workers, enabling rapid deployment cycles and production-ready platforms for real-time data processing.	Toronto, ON

<b>FTC Robotics</b> <i>Senior Software Lead</i>	Sept 2022 – June 2025
– Engineered high-performance telemetry pipelines in C++ and Java aggregating multi-sensor data streams into unified state estimation with real-time processing requirements. – Designed signal processing algorithms and validation logic using analytical methods, improving system reliability by 20% and doubling response speed through statistical analysis. – Collaborated in small teams to implement PID control systems, improving autonomous navigation accuracy by 70% through iterative problem-solving and performance optimization.	Toronto, ON

## PROJECTS

<b>Chess Bot</b>   PyTorch, Modal, Python, distributed computing	June 2025
– Built a high-performance AlphaZero-style chess engine using PyTorch with a unified policy-value network trained via large-scale self-play reinforcement learning. – Implemented distributed computing architecture running training and self-play generation on A100/H100 GPUs via Modal, achieving high-throughput RL cycles with automated evaluation pipelines. – Applied Monte Carlo Tree Search with neural priors and statistical inference, reaching ~1600 Elo strength through iterative optimization and analytical problem-solving.	

<b>Spotilike</b>   Flask, TensorFlow, machine learning	June 2025
– Created an AI-driven music discovery platform using machine learning models (TensorFlow, DeepFace) for real-time emotion recognition and personalized recommendations. – Designed data processing pipelines integrating Spotify API with MongoDB schemas, enabling efficient querying and analysis of large-scale music metadata datasets.	

<b>Claim Brain</b>   Flask, LangChain, MongoDB, natural language processing	Jan 2024
– Implemented an AI mentor platform using GPT-4 and natural language processing techniques, processing file uploads and generating personalized study guides through semantic retrieval. – Built data research platform with MongoDB Atlas Vector Search, enabling intelligent content analysis and recommendation systems for educational applications.	