Lin Hong

linlin.hong1@gmail.com | github.com/LinHong149 | linkedin.com/in/linhongdev | linhong.dev

10× Hackathon Winner · Analytics Engineering · Data Science

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 Abstraction, Statistics, Machine Learning, Database Systems

Skills

Languages: Python, Java, SQL, JavaScript, TypeScript, C++, Go, Bash
Technologies: PostgreSQL, MongoDB, PyTorch, TensorFlow, Redis, Docker, AWS, Git, FastAPI, Flask

Experience

Walnote AI July 2025 – Present

Founding Engineer *Toronto, ON*

- Designed and built real-time data pipelines using **Python** and Redis pub/sub, processing and broadcasting events into a **PostgreSQL** database for large-scale analytics.
- Optimized large-scale video rendering pipeline, reducing processing time by 5× through segment-based parallelization and distributed processing optimizations.
- Collaborated with cross-functional teams to define data models and schemas, enabling efficient querying and real-time analytics dashboards.

FTC Robotics Sept 2022 – June 2025

Senior Software Lead *Toronto, ON*

- Engineered **telemetry pipelines** aggregating encoder, IMU, and camera data from multiple sources into unified robot state estimation with **signal filtering** and validation logic.
- Performed **data analysis** and **anomaly detection** on sensor readings, improving reliability by 20% and doubling response speed through quantified impact analysis.

Projects

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

- Built an AlphaZero-style chess engine with a unified policy–value network trained via large-scale self-play reinforcement learning using **distributed systems** on A100/H100 GPUs.
- Implemented statistical inference and ML models to analyze playing patterns, achieving ∼1600 Elo strength through iterative data-driven improvements and automated evaluation.

Spotilike | *Flask, TensorFlow,* ***MongoDB*** June 2025

- Created an AI-driven music discovery platform processing real-time emotion data; designed intuitive **MongoDB** schemas linking emotion embeddings to music metadata for efficient querying.
- Integrated TensorFlow and DeepFace for emotion-aware track recommendations, analyzing user patterns and performing anomaly detection to improve recommendation accuracy.

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

- Implemented an AI mentor platform with **Flask** backend processing file uploads and note summarization; integrated GPT-4 and **MongoDB** Atlas Vector Search for semantic data retrieval.
- Designed data models and schemas for efficient storage and retrieval of educational content, enabling personalized study guide generation through data-driven insights.

Lofied | ***Python****, torchaudio, Docker* May 2025

- Developed a **Python** tool converting Spotify playlists to lo-fi tracks using DSP algorithms and audio processing; implemented data pipelines for batch processing and transformation.
- Designed automated processing workflows with **Docker**-based deployment, enabling scalable data processing and structured output generation for music analysis.