

Ri Hong

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10× Hackathon Winner · Backend Engineer · Cloud and Infrastructure

EDUCATION

University of Waterloo

2022 – 2027

Bachelor of Computer Science (Co-op) · GPA: 3.9/4.0

SKILLS

Languages: Python, Go, **Node.js**, **TypeScript**, Java, JavaScript, C/C++

Technologies: **PostgreSQL**, FastAPI, gRPC, **AWS**, Docker, Kubernetes, Temporal, **React**, Electron

EXPERIENCE

Base Power

Jan 2025 – Apr 2025

Software Engineering Intern

Austin, TX

- Discovered and resolved performance bug in real-time market data transformation, reducing complexity from $O(n^2)$ to $O(n \log n)$ using **Go** routines; implemented **gRPC** for type-safe communication between **Python** algorithm services and **Go** microservices, reducing serialization overhead by 20%.
- Improved trading simulation reliability by transitioning from local to cloud-native execution using Temporal Cloud, enabling 1000s of auto-retriable workflows and eliminating single-node failure risks.
- Used OpenTelemetry traces to uncover performance bottleneck caused by blocking BigQuery writes during simulations; implemented non-blocking async publishing using **Go** routines, achieving a 32% speedup.

GeeseHacks

May 2024 – Feb 2025

Lead Software Developer

Waterloo, ON

- Led team of 8 developers building software infrastructure for 600+ attendee hackathon using **Node.js**, **TypeScript** and **React**, achieving 98% uptime and securing \$25k funding.
- Engineered robust DevOps strategy managing multiple databases including **PostgreSQL**, ensuring 100% schema synchronization across three environments and reducing deployment errors by 30%.
- Cultivated quality-first culture with comprehensive testing using **TypeScript**, achieving 98% test coverage and reducing production bugs by 35%.

Walnote.ai

Aug 2025 – Present

Founder & CTO

Toronto, ON

- Launched AI platform processing 1,000+ animations with **Celery** + **FastAPI** pipeline using **Python**; designed scalable backend architecture with distributed task queues and GPU rendering, deployed on **AWS**.
- Scaled secure rendering and delivery with **PostgreSQL** and Docker, reducing render latency from 12s to 2s through pipelined streaming workflow; raised \$20k pre-seed and led product strategy from prototype to production.

Microgreen Solar Corp.

Sept 2023 – Dec 2023

Software Engineering Intern

Toronto, ON

- Spearheaded full-stack **AWS** Cloud project for processing EnergyPak lithium battery data, utilizing API Gateway, Lambda, DynamoDB, and IoT Core.
- Implemented backend services with **React**, **TypeScript**, **Node.js** and optimized data retrieval, reducing latency by 318% through effective caching strategies.

PROJECTS

Neural Style Transfer Engine | *PyTorch, FastAPI, Docker, CUDA*

Sept 2025

- Built scalable REST API with **FastAPI** for style transfer requests, containerized with **Docker** for easy deployment; engineered high-performance system with custom CUDA kernels achieving 8x faster style transfer.
- Implemented efficient VGG19-based feature extractor with L-BFGS optimization, delivering production-quality artistic style transfer in under 30 seconds on consumer GPUs.

TrailGuide | *Node.js, TypeScript, FastAPI, Google PaLM, Infobip*

Nov 2023

- Created SMS-based hiking assistant delivering real-time weather updates and safety check-ins; implemented advanced query classification system using Google's PaLM LLM with **Node.js**, **TypeScript**, and **FastAPI** backend.
- Awarded “Best Use of Infobip” at Hack Western 10, distinguishing our project among 15 competitive teams.