

Ri Hong

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10× Hackathon Winner · Fullstack Engineer · Product Engineer

EDUCATION

University of Waterloo

2022 – 2027

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

- Relevant coursework: Algorithms, Data Structures, Object-Oriented Programming, Databases, Operating Systems, Computer Networks

SKILLS

Languages: JavaScript, TypeScript, Python, Java, C/C++, Go, HTML, CSS

Technologies: React, Next.js, Docker, PostgreSQL, AWS, Linux, Kubernetes, Terraform

Tools: Git, Jest, Cypress, GitHub Actions, CI/CD

EXPERIENCE

Walnote.ai

Aug 2025 – Present

Toronto, ON

Founder & CTO

- Launched an AI platform combining GPT-5 with Manim to auto-generate explainer videos; processed 1,000+ animations with a **Python + FastAPI** pipeline.
- Accelerated generation by segmenting code generation and running distributed GPU rendering, reducing render latency from 12s to 2s; leveraging a pipelined streaming workflow to deliver near real-time playback.
- Scaled secure rendering and delivery with **Docker**, FFmpeg, Cloudflare R2, and **PostgreSQL**; raised \$20k pre-seed and led product strategy from prototype to production.

Base Power

Jan 2025 – Apr 2025

Austin, TX

Software Engineering Intern

- Led fullstack and infrastructure initiatives in a mission-critical environment, collaborating with algorithm developers to improve energy trading performance in a Series B (\$850M) startup.
- Discovered and resolved a performance bug in real-time market data transformation logic, reducing complexity from $O(n^2)$ to $O(n \log n)$ by applying **algorithm** optimization techniques.
- Rewrote market controller UI using **React** and **Next.js**, allowing on-call traders to execute trades within seconds.

Groq

Sept 2025 – Dec 2025

Toronto, ON

Software Engineering Intern

- Designed and launched an observability platform to measure engineering productivity and AI coding tool adoption, providing actionable insights for 400+ engineers; developed dashboards that surfaced correlations between tool usage and code quality.

GeeseHacks

May 2024 – Feb 2025

Waterloo, ON

Lead Software Developer

- Led a team of 8 developers to develop the software infrastructure for a first-time hackathon with 600+ attendees, achieving 98% uptime during the event and securing \$25k in funding.
- Cultivated a quality-first culture by incorporating **Jest** and **Cypress** for testing, achieving 98% test coverage; optimized application performance using **Next.js**, achieving 25% faster page load time.

PROJECTS

Trasee | Pyodide, React, TypeScript, Vite, React Flow

Oct 2025

- Built a real-time **Python** code visualizer that intelligently recognizes **data structures** and renders them interactively in the browser; engineered a two-phase static + runtime analysis pipeline using **Python**'s ast module and **Pyodide** WebAssembly.
- Designed a performant time-travel debugger with memoized **React** renders and Monaco Editor integration; won “Best Revolutionizing Learning Hack” at Hack the Valley X among 100+ teams.

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

Sept 2025

- Engineered a high-performance Neural Style Transfer system with custom CUDA kernels for Gram matrix computation, achieving 8x faster style transfer compared to CPU-only implementation.
- Built a scalable REST API with **FastAPI** for style transfer requests, containerized with **Docker** for easy deployment.