

# Ri Hong

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## SKILLS

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

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

## EXPERIENCE

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### Base Power

Jan 2025 – Apr 2025

*Markets Infrastructure Engineer*

*Austin, TX*

- Identified and resolved performance bug in real-time market data transformation, reducing complexity from  $O(n^2)$  to  $O(n \log n)$  using sort-and-search optimization; uncovered bottleneck via **OpenTelemetry** traces and implemented non-blocking async publishing with **Go** routines, achieving 32% speedup.
- Implemented **Protobuf** and **gRPC** for seamless communication between **Python** algorithm services and **Go** microservices, ensuring type safety and reducing serialization overhead by 20%; rewrote market controller UI using **React** and **Next.js** for on-call traders.

### Trend Micro

Summer 2024

*Software Developer Intern*

*Ottawa, ON*

- Upgraded legacy Deep Security Manager from JDK 8 to JDK 11, modernizing the codebase for over 250 million global customers; revamped **Jenkins** CI/CD pipeline achieving 35% increase in automation efficiency and accelerating deployment timelines by 15%.
- Refactored monolithic codebases into microservices, cutting deployment errors by 30%; troubleshooted and resolved over 40 installation and deployment issues on **Linux EC2** instances, enhancing system reliability and uptime.

### Groq

Sept 2025 – Dec 2025

*Cloud Engineering Intern*

*Toronto, ON*

- Engineered multi-region infrastructure with **Terraform** and **Kubernetes** on GCP, enabling horizontally scalable AI/ML workloads and cutting deployment time by 24%; designed observability platform measuring engineering productivity for 400+ engineers.

### Walnote.ai

Aug 2025 – Present

*Founder & CTO*

*Toronto, ON*

- Launched AI platform processing 1,000+ animations with **Celery** + **FastAPI** pipeline; accelerated generation by segmenting code and running distributed GPU rendering, reducing render latency from 12s to 2s; scaled with **Docker**, FFmpeg, and **PostgreSQL**.

## PROJECTS

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### Trasee | **Python**, **React**, **TypeScript**, *Pyodide*, *React Flow*

Oct 2025

- Built real-time **Python** code visualizer recognizing data structures and rendering them interactively; engineered two-phase static + runtime analysis pipeline using **Python**'s `ast` module and `sys.settrace` within Pyodide WebAssembly; won “Best Revolutionizing Learning Hack” at Hack the Valley X.

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

Sept 2025

- Engineered high-performance Neural Style Transfer system with custom **CUDA** kernels achieving 8x faster style transfer; built scalable REST API with **FastAPI** for style transfer requests, containerized with **Docker** for production deployment.

## EDUCATION

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### University of Waterloo

2022 – 2027

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