# Ri Hong

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## Skills

**Languages:** Python, Java, C/C++, JavaScript, TypeScript, Go, HTML, CSS
**Technologies:** React, Next.js, Kubernetes, Docker, Terraform, FastAPI, gRPC, AWS, Linux, PostgreSQL

## Experience

**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 and launched an observability platform measuring engineering productivity for 400+ engineers, providing actionable insights through dashboards and analytics workflows.

**Base Power** Jan 2025 – Apr 2025
*Markets Infrastructure Engineer* *Austin, TX*

- Discovered and resolved a performance bug in real-time market data transformation logic, reducing complexity from $O(n^2)$ to O(n log n) using sort-and-search optimization.
- Uncovered performance bottleneck via OpenTelemetry traces; implemented non-blocking async publishing with Go routines, achieving 32% speedup in trading simulations.
- Implemented Protobuf and gRPC for seamless communication between Python algorithm services and Go microservices, ensuring type safety and reducing serialization overhead by 20%.

**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 to support JDK 11, achieving 35% increase in automation efficiency and accelerating deployment timelines by 15%.
- Refactored monolithic codebases into microservices, cutting deployment errors by 30% and improving scalability.

**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 secure rendering and delivery with Docker, FFmpeg, Cloudflare R2, and PostgreSQL; raised $20k pre-seed and led product strategy from prototype to production.

## Projects

**DistilBERT Sentiment Analysis** | *PyTorch, Kubernetes, Terraform, GCP* Sept 2025

- Engineered production-grade sentiment analysis service achieving 92.5% accuracy using DistilBERT, deployed on GKE with Terraform; optimized training with mixed precision and distributed GPU training, reducing training time by 40%.

**Neural Style Transfer Engine** | *PyTorch, CUDA, FastAPI, Docker* Sept 2025

- Built scalable REST API with FastAPI for style transfer requests, containerized with Docker; engineered high-performance system with custom CUDA kernels achieving 8x faster style transfer compared to CPU-only implementation.

**Trasee** | *React, TypeScript, Pyodide, React Flow* Oct 2025

- Built real-time Python code visualizer recognizing data structures and rendering them interactively in the browser; engineered two-phase static + runtime analysis pipeline using Python's ast module and sys.settrace within Pyodide WebAssembly.

## Education

**University of Waterloo** 2022 – 2027
*Bachelor of Computer Science (Co-op) · GPA: 3.9/4.0*