Ri Hong

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SKILLS

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

EXPERIENCE

Groq
Sept 2025 – Dec 2025
Cloud Engineering Intern — *Toronto, ON*
- Engineered multi-region infrastructure with **Kubernetes** and **Terraform** on GCP, enabling horizontally scalable systems and cutting deployment time by 24% for production workloads.
- Designed and launched an observability platform measuring engineering productivity for 400+ engineers, providing actionable insights through data-driven dashboards and analytics workflows.

Base Power
Jan 2025 – Apr 2025
Markets Infrastructure Engineer — *Austin, TX*
- Led fullstack and infrastructure initiatives in a mission-critical environment, transitioning trading simulations to cloud-native execution using **Temporal** Cloud, enabling 1000s of auto-retriable workflows and eliminating single-node failure risks.
- Discovered and resolved a performance bug in real-time market data transformation, reducing complexity from $O(n^2)$ to $O(n \log n)$; implemented non-blocking async publishing using **Go** routines, achieving a 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%.

Trend Micro
Summer 2024
Software Developer Intern — *Ottawa, ON*
- Upgraded the legacy Deep Security Manager from JDK 8 to JDK 11, modernizing the **Java** codebase and enhancing compatibility with contemporary tools for over 250 million global customers.
- Revamped the **Jenkins** CI/CD pipeline to support JDK 11, achieving a 35% increase in automation efficiency and accelerating deployment timelines by 15%; refactored monolithic codebases into microservices, cutting deployment errors by 30%.

Walnote.ai
Aug 2025 – Present
Founder & CTO — *Toronto, ON*
- Launched an AI platform combining GPT-5 with Manim to auto-generate explainer videos; processed 1,000+ animations with a **Celery** + **FastAPI** pipeline, accelerating generation by segmenting code and running distributed GPU rendering.

PROJECTS

DistilBERT Sentiment Analysis | *PyTorch, GCP, Kubernetes, Terraform*
Sept 2025
- Engineered a 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
- Engineered a high-performance Neural Style Transfer system with custom **CUDA** kernels, achieving 8x faster style transfer; built a scalable REST API with **FastAPI** for production deployment.

Trasee | *Pyodide, React, TypeScript, Vite*
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 sys.settrace within **Pyodide** WebAssembly.

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, AI, ML