Ri Hong

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Production Engineering & Infrastructure · Backend Systems · Kubernetes & Cloud · Linux Systems

Education

University of Waterloo Waterloo, ON

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

- Relevant Coursework: Algorithms, Data Structures, Databases, Object-Oriented Programming, Systems Programming

Technical Skills

Languages: Go, Python, C/C++, Java, TypeScript, JavaScript
Infrastructure: Linux, Kubernetes, Docker, Terraform, AWS, GCP, Ansible, CI/CD
Systems: gRPC, PostgreSQL, Temporal, OpenTelemetry, Networking, Load Balancing

Experience

Groq Sept 2025 – Dec 2025

Cloud Engineering Intern *Toronto, ON*

- Engineered multi-region production infrastructure with Terraform, Kubernetes, Kustomize, and Flux on GCP, enabling horizontally scalable workloads and reducing deployment time by 24% through infrastructure automation.
- Debugged and optimized production systems handling large-scale AI/ML workloads, ensuring reliability and performance across distributed infrastructure.

Base Power Jan 2025 – Apr 2025

Software Engineering Intern *Austin, TX*

- Engineered scalable backend infrastructure and production systems in a high-ownership environment, optimizing critical trading workflows for a Series B energy startup.
- Reduced simulation time by 5x by redesigning the simulation engine for Kubernetes-based parallel processing, implementing distributed systems patterns and monitoring with OpenTelemetry.
- Migrated local simulations to Temporal Cloud with intermediate state persistence in AWS S3, implementing fault-tolerant retry mechanisms for production reliability.
- Implemented concurrent batch publishing with Goroutines, increasing BigQuery throughput by 32%, and reduced redundant runs by 47% via input hashing to optimize resource utilization.

Walnote.ai Aug 2025 – Present

Founder & CTO *Toronto, ON*

- Built and scaled production backend infrastructure with Docker, FastAPI, and Celery, processing 1,000+ animations with distributed GPU rendering pipelines.
- Optimized system performance by segmenting code generation and implementing distributed rendering, reducing render latency from 12s to 2s via pipelined streaming workflows.
- Designed secure, scalable infrastructure with Docker, Cloudflare R2, and PostgreSQL, leading product strategy from prototype to production deployment.

GeeseHacks May 2024 – Feb 2025

Lead Software Engineer *Waterloo, ON*

- Led an 8-person engineering team to build core infrastructure for a 600+ attendee hackathon, ensuring system reliability under high load.
- Developed a real-time backend system with PostgreSQL and REST APIs, handling 5,000+ concurrent score updates with sub-200ms latency.
- Built CI/CD workflows with GitHub Actions for automated deployment to staging and production environments.

Trend Micro May 2024 – Aug 2024

Software Engineering Intern *Ottawa, ON*

- Modernized a 1.2M-line production Java codebase by upgrading Deep Security Manager from JDK 8 to 11, unlocking 40+ dependency updates and reducing CI build time by 18% through infrastructure optimization.

Microgreen Solar Sept 2023 – Dec 2023

Software Engineering Intern *Toronto, ON*

- Built a production telemetry ingestion pipeline with AWS IoT Core and AWS RDS for real-time off-grid energy monitoring, handling high-throughput data streams.
- Optimized backend performance by introducing Redis caching, reducing query latency from 5000ms to 100ms for production workloads.

Projects

HomeLab | *Linux, Proxmox, Ansible, Kubernetes* Apr 2025

- Deployed and managed a production-grade Kubernetes cluster on Proxmox using Terraform and Ansible, implementing scalable, self-healing microservices with Nginx load balancing and Cloudflare HTTPS routing for high-availability infrastructure.