

Aditya Goel

BS Computer Science Honours – 4th Year

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EDUCATION

University of British Columbia, Vancouver

GPA: 4.33/4.33

BS Computer Science Honours

Sep 2021 – May 2026

- **Courses:** Distributed Systems, Deep Learning, Numerical Optimization - Ongoing, Algorithm Design - 97%, Algorithms & Data Structures - 97%, Object-Oriented Programming - 93%, Theoretical ML - 93%, Applied ML - 93%
- **Awards:** Science Scholar + Dean's Honour List (Cumulative **GPA: 91.1%, 4.33/4.33**)
- **Scholarships:** Academic Excellence **\$80,000** (2021-26) & **\$4,000** (2022); Community Engagement **\$10,000** (2024)
- Teaching Assistant: **Algorithms and Data Structures** (CPSC 221), Models of Computation (CPSC 121)

WORK EXPERIENCE

Shopify

May 2025 – Aug 2025

Software Engineering Intern – **Go, Kubernetes, Terraform, C, Ruby, Python, GCP**

Vancouver, BC, Canada

- Built a **calendar-aware autoscaler** wired to flash-sale forecasts; pre-scaled 10,000+ pods across four regions, **avoided \$160,000** in potential Black-Friday revenue loss, and boosted average cluster **CPU utilization by 30%**.
- Implemented a declarative **cluster provisioning framework** (generator, Terraform actuator, GitOps) with live failover, cutting spin-up **from hours to 15 minutes** and eliminating drift across **100+ production clusters**.
- Built a **distributed PyTorch training pipeline** on Kubernetes that leverages elastic GPU autoscaling to reduce model convergence time and reduce p95 inference latency from **95 ms to 60 ms** for personalized search.

Electronic Arts (EA)

May 2024 – Aug 2024

Software Engineering Intern – **Java, SpringBoot, Kubernetes, Redis, Kafka, Terraform**

Vancouver, BC, Canada

- Designed and implemented a **distributed tracing** backend service in **SpringBoot** to trace **millions of requests per second** in a **multi-tiered, distributed system**, while ensuring extensive **scalability and robustness**.
- Designed a multi-region **Redis and Kafka caching layer** for the leaderboard service, sustaining millions of updates per second and dropping **P99 write latency from 310 to 85 ms** for **250K concurrent players**.
- **Exceeded my intern responsibilities** by assisting on-call engineers in diagnosing issues and proposing solutions to critical service outages during game launch season.

Rivian Automotive

Sep 2023 – Apr 2024

Software Engineering Intern – **Python, OpenCV, GraphQL, Kubernetes, AWS, Docker**

Vancouver, BC, Canada

- Developed an ORB-based **image recognition script** to automate UI bug detection in Rivian's mobile app, enhancing product reliability and **reducing manual testing effort by 40%**, directly impacting the end-user experience.
- Deployed several API automation scripts to Rivian's daily build pipeline, **saving 5,000+ dev hours per year**.
- Worked on the optimization of Rivian's **distributed build system**, reducing build times by **15%** through effective **caching and parallel job execution**, ensuring high system performance.

PROJECTS

quantaTrader (C++) github.com/agoel25/quantaTrader

Jul 2024 – Sep 2024

- Developed a **low-latency, high-throughput** order matching system in C++ **optimized for HFT** applications, capable of handling **1 million orders per second** with an average tested latency of **1.5 microseconds**.
- Architected **CPU optimizations** like memory alignment and asynchronous I/O, and **advanced data structures** like robinhood hash maps and intrusive linked lists to optimize data access speed and improve cache efficiency.

myGPT (Python, PyTorch) github.com/agoel25/myGPT

May 2024 – Jul 2024

- Implemented a **GPT model** with a cross-entropy **loss of 2.9** (same as ChatGPT-2) by using MLPs, self-attention, and layer normalization, that **runs 100% locally** and can be **trained or fine-tuned on any dataset**.
- Implemented several **GPU/CUDA optimization** techniques like kernel fusion, mixed precision, and distributed batched processing to **reduce training time by 9.5 times** compared to a baseline implementation in PyTorch.

Aakstra Cloud Services (Java, SpringBoot, Oracle DB) github.com/agoel25/Aakstra

Jul 2024 – Aug 2024

- Engineered a robust backend for a cloud service provider using **SpringBoot**, ensuring minimal redundancy by normalizing database tables to **BCNF**, and preventing injection attacks by incorporating **SQL sanitization**.
- Developed **responsive APIs** for complicated **SQL queries** like division, nested aggregations, and CRUD operations.

TECHNICAL SKILLS

Languages: Java, C++, Go, Python, JavaScript, TypeScript, C, Ruby, GraphQL, SQL, Assembly

Development Tools: Kubernetes, Docker, Kafka, AWS, Terraform, PyTorch, CUDA, SpringBoot, gRPC