

Kelvin Koon

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TECHNICAL SKILLS

Languages: Python, Java, C++, C, Go, TypeScript

Technologies: AWS, GCP, Github Actions, Docker, ESP32

EXPERIENCE

Amazon

Feb 2022 – Oct 2025

Software Development Engineer II (Customer Service Security)

Toronto, ON

- Engineered a detection rule registration mechanism to enable cron-based Athena job scheduling with Java, AWS DynamoDB Streams, Lambda, and EventBridge
- Extended access control infrastructure to process hiring events, eliminating dwell time for 10k+ employees with Java, AWS Lambda, and SNS
- Architected a self-hosted Maltego service to provision and allocate sandboxed EC2 instances for security engineers with Python, AWS Lambda, EC2 Auto Scaling Groups, EventBridge, and DynamoDB
- Productionized ML platform prototype with AWS CDK, enabling reproducible and automated deployments for data scientists

Tesla

Sep 2021 – Dec 2021

Firmware Engineering Intern

Palo Alto, US

- Developed software-in-loop (SIL) infrastructure for battery, temperature, and oil pump graceful degradation to provide safety-critical validation of real-time systems with Python and CANape

Netgear

Aug 2018 – May 2019

Software Developer Co-op (Aircard)

Richmond, CA

- Built throughput validation features across various providers and network protocols to expedite the Nighthawk M5 launch with C, C++, and iPerf

PROJECTS

Statsugiri | Python, TypeScript, AWS (CDK), Next.js (React), Docker, Github Actions

- Leading development of a competitive Pokémon data platform, serving a peak of 100k+ visitors [[repo](#)][[media](#)]
- Built a data pipeline to reliably schedule and ingest replay logs daily with AWS Lambda, Step Functions, S3, and EventBridge [[post](#)]
- Developed a serverless back-end for filtering teams with AWS Lambda, DynamoDB, and API Gateway [[post](#)]
- Built a responsive UI for vending team data with Next.js (React), CloudFlare, and DigitalOcean App Platform
- Configured Github Actions to run tests, validate formatting, and automate AWS ECR image builds [[commit](#)]
- Built a Chrome Extension to streamline batch downloading and exporting of replay URLs [[extension](#)]

UBC Thunderbots Robotics | C++, C, Python, Bazel

- Contributed to software and firmware development for autonomous soccer robotics, winner of 2021 and 2022 RoboCup Small Size League Div B [[repo](#)][[media](#)]
- Wrote a custom testing framework with Gtest and fff to bootstrap primitive mocking, achieving 78% coverage in the previously untested module [[commit](#)]
- Implemented a circular buffer to store recent difference equation values for the motion controller [[commit](#)]
- Rewrote the control layer firmware abstraction to support grSim's Protobuf format for the virtual RoboCup 2021 competition simulator [[commit](#)]
- Spearheaded STEM outreach and external/internal sponsorship efforts as an administrative lead

Distributed Hash Table | Go, Docker, Bash, GCP (Compute Engine)

- Collaborated on a fault-tolerant key-value store featuring three-way replication and consistent hashing
- Streamlined GCP deployment using Docker, gcloud SDK, and Bash scripts for up to 50 nodes

Thermal Printer Photobox | C++, ESP32, Arduino, Electronics

- Developing firmware for workflow between ESP32-Cam and thermal printer via TTL serial communication
- Building an image processing and hosting platform with AWS Lambda, S3, and API Gateway

EDUCATION

University of British Columbia

B.A.Sc. in Electrical Engineering

Graduated November 2021

APSC Rising Star Award [[media](#)]