Kelvin Koon

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TECHNICAL SKILLS

Languages: Python, Java, C++, C, TypeScript, Go, Bash
Technologies: AWS (CDK), Docker, Bazel

EXPERIENCE

Amazon   Feb 2022 – Present
Software Development Engineer II (Customer Service Security)   *Toronto, CA*
- 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 Java, Python, AWS Lambda, EC2 Auto Scaling Groups, EventBridge, and DynamoDB
- Supported machine learning infrastructure and data pipeline migration efforts with AWS SageMaker and S3

Tesla   Sep 2021 – Dec 2021
Firmware Engineering Intern (Vehicle Software)   *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), Docker, Github Actions*
- Leading development of a competitive Pokémon data platform, serving a peak of 100k+ visitors [**demo**][**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 high-ranked 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 workflow to run tests, check formatting, and automate AWS ECR Docker image builds on merged pull requests [**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 high-school 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 to scale up to 50 nodes

EDUCATION

University of British Columbia   Graduated November 2021
B.A.SC. in Electrical Engineering   APSC Rising Star Award [**media**]