Sean Kim

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Education

University of Toronto   Expected Apr 2026
Bachelor of Applied Science in Computer Engineering (Software)   cGPA: 3.86/4.0
- NSERC Undergraduate Student Research Award (2023) · Teaching Assistant (Fall 2024) · Dean's List in All Semesters

Experience

Robinhood   Sep 2025 – Dec 2025
Incoming Software Engineering Intern

Patreon   May 2025 – Aug 2025
Software Engineering Intern   New York, NY
- Developed an intelligent vulnerability tracking system on AWS (Lambda, DynamoDB, EventBridge) integrated with Bedrock LLM to filter false positives, reducing manual triage from hours to under **5 mins** for **6,000+** daily vulnerabilities
- Achieved **4–5 day faster** turnaround than third-party security tools by automatically extracting and correlating insights from unstructured sources such as Hacker News posts, potentially saving **over $50K** in annual operational costs
- Deployed a secondary Lambda to surface false positive vulnerabilities via Slack interactivity, accelerating security triage
- Automated CI/CD pipelines in CircleCI using Terraform for setup, testing, type checking, and deployment of the system

Mozilla Corporation (Firefox)   Jan 2025 – Apr 2025
Software Engineering Intern   Toronto, ON
- Extended **DNS over HTTPS (DoH) in Firefox for Android** ↗ (Kotlin, Jetpack Compose, Redux-based architecture), integrating GeckoView to deliver desktop-level privacy for over **178 million** mobile users
- Implemented WebTransport datagram send and receive support over HTTP/2 in C++, making Firefox the first browser to support HTTP/2 fallback and promote developers to build and test in Firefox
- Revamped networking error pages with refined messages alongside content team, bringing Firefox in line with competitors

Mozilla Corporation (Firefox)   May 2024 – Dec 2024
Software Engineering Intern   Toronto, ON
- Integrated **Microsoft Entra Single Sign-On** for Firefox on macOS ↗ via Apple's Authorization API in Objective-C, potentially benefiting **7+ million** users, and led **Mozilla** in cross-company discussion with **Microsoft**
- Enhanced the URL parsing layer (C++, JavaScript, Rust) for **25+** URL schemes and query encodings in Firefox, elevating Firefox Nightly's Interop 2024 URL score to **99.3%** ↗ (above most major market competitors)
- Migrated **50+** networking Telemetry probes to Glean API and built a real-time dashboard on Redash, used weekly by **10+ engineers** to pinpoint the root cause of performance issues in Firefox Desktop and Android

iQua Research Group ↗   May 2023 – Aug 2023
Distributed Systems Research Intern   Toronto, ON
- Developed a max-min fairness algorithm using linear programming, applied to bandwidth optimization across Dockerized network nodes with centralized metric collection, contributing to ongoing research in distributed systems

Projects & Extracurriculars

UofTHacks Organizer Team | Website ↗   React.js · Next.js · Node.js · Express.js · MariaDB
- Developed the main website, admin portal, and applicant dashboard of **Canada's largest student-run hackathon**, benefiting over **1,000** hackathon applicants

Geographic Information System Mapper | Demo ↗   C++ · STL · GTK · OpenStreetMap API
- Developed a high-performance, multi-threaded Google Maps-like application, producing the **shortest path in < 1 second**
- Implemented Djikstra, A* algorithms, 3-Opt, and other heuristics for Travelling Courier Problems in 20 cities while **maintaining 50-second runtime** using C++ and OSM API, ranked within top 10% of the challenge

Skills

Languages: Python, C, C++, JavaScript, Java, Kotlin, Rust, HTML, CSS, SQL, Objective-C
Miscellaneous: Redux, React.js, Next.js, Node.js, Express.js, REST API, PostgreSQL, Redash, Jetpack Compose, Jira, Pydantic, STL, Terraform, AWS (Lambda, S3, DynamoDB, CloudWatch, Bedrock), Datadog, Sumo Logic, CI/CD, Docker, Git, Mercurial