

Naman Sood

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Education

University of Waterloo • Bachelor of Computer Science – 91.4%

Sep 2019 – Apr 2024

- **Relevant Coursework:** Operating Systems, Concurrency, Networks, Security, Data Structures & Algorithms

Skills

Languages JavaScript/TypeScript, Go, Rust, C++, C, Python, Scala, HTML/CSS, Shell, Haskell

Technologies Git, Docker, Kubernetes, AWS EC2/S3, gRPC/Protobuf, React, SQL, MongoDB

Experience

Tailscale • Software Developer Intern

Toronto, ON • Sep 2023 – Dec 2023

- Created Go API and React UX for a **user-friendly self-update interface**, that provides feedback even during a software restart.
- Auto-configured iptables and nftables firewalls on Linux to allow **faster client connectivity** at a lower bandwidth cost.
- **Enabled confident rollout** of new feature by designing a large-scale server-side rollback mechanism for client functionality.
- **Improved observability** of antivirus false positives by creating tool to routinely check Windows binaries against 60+ antiviruses.
- Simplified access to remote codebases by delivering v1.0 of Visual Studio Code extension, causing **jump of 400 installs/week**.

FreeBSD Foundation • Software Developer Intern

Kitchener, ON • May 2023 – Aug 2023

- **Modernized firewall infrastructure** by adding support for IPv6 multicast addresses in firewall state-syncing kernel module.
- **Enabled peer-to-peer networking** over PF firewall by porting full-cone NAT to current code, showing **3x performance gain**.
- Ensured compatibility with container infrastructure by patching Common monitoring software to fix regressions on FreeBSD.
- Enhanced reliability by fixing longstanding bugs in C core system utilities, used for user management and disk monitoring.

data.world • Software Engineer Intern

Austin, TX • May 2022 – Aug 2022

- **Spearheaded Databricks and Apache Spark support** in Java-based data catalog service by integrating JDBC database drivers.
- Boosted user productivity in code editing workspace by generating autocompletions for RDF classes and properties.
- **Delivered key usability improvements** to code workspace in areas like error visibility and autogeneration of code snippets.
- Refined syntax highlighting for SPARQL queries by improving regular expressions used to parse language constructs.

Carta • Software Engineer Intern, Infrastructure

Kitchener, ON • Sep 2021 – Dec 2021

- Designed distributed gRPC logging system using Apache Fluent for **scalable auditing and compliance** across organization.
- Enforced standardization of Protobuf definitions for **over 300 microservices** by designing static analysis tool in Go.
- **Optimized build times by 10x** for Docker images by simplifying package requirements to allow precompiled dependencies.
- Improved system availability by identifying and removing bottlenecks in Redis server connections in Python library.

Tailscale • Software Developer Intern

Toronto, ON • Jan 2021 – Apr 2021

- **Introduced cloud/serverless support** by emulating TCP/IP stack in userspace for Docker containers, using Google gVisor.
- Enabled standardized communication using SOCKS5 protocol over Tailscale VPN by implementing proxy server in Go.
- **Streamlined deployments in cloud environments** by creating single-session authentication keys with auto-cleanup.
- Developed a GitHub Action [🔗](#) for end-users that allows **plug-and-play security** for CI/CD pipelines.
- Expanded outreach within the technical community by writing long-form content for corporate blog. [🔗](#)

University of Waterloo • Research Associate

Waterloo, ON • May 2020 – Aug 2020

- Optimized Go consensus system to **3x throughput** by increasing maximum transaction count sent in each message.
- Streamlined deployment of project by using Docker images to generate repeatable builds across diverse environments.
- Assisted distributed systems research by conducting experiments on AWS EC2 and analyzing performance data in gnuplot.

Projects

lambda [🔗](#) Rust

An interpreter for lambda calculus, with support for multiple reduction strategies. Wrote blog post about development process [🔗](#).

tick-tock-lock [🔗](#) C, C++

A two-factor authentication app for Nintendo 3DS, supporting time and counter based protocols, using standard otpauth QR codes.