Naman Sood

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Education

University of Waterloo *Bachelor of Computer Science – 3.9 GPA* 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

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 Conmon 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.
- Created proof-of-concept for logging system using Kubernetes DaemonSets, with ConfigMaps to deploy custom configurations.
- 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.

Creesync Software *Software Engineering Intern* New Delhi, India • May 2019 – Aug 2019

- Simplified distribution of professionally clicked photos by building Electron and React Native apps.
- Designed and deployed API to upload and preview photos in low-bandwidth situations using Node.js and AWS S3.

Projects

CHIP8-rust *Rust*

Emulator for CHIP-8 microprocessor. Simulated behavior of machine instructions with Rust, created graphics in framebuffer.

Clay *C, x86 Assembly*

A minimal x86 operating system. Handled tasks like interrupts, timers, paging, while balancing performance and maintainability.