Naman Sood

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SKILLS

Languages	JavaScript, Go, Rust, C++, C, Python, Scala, HTML/CSS, Shell, Haskell
Technologies	Git, Docker, Kubernetes, AWS EC2/S3, gRPC/Protobuf, React, SQL, MongoDB

EXPERIENCE

Carta
`Sep 2021 – Dec 2021`

Software Engineering Intern, Infrastructure – Kitchener, ON

- 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
`Jan 2021 – Apr 2021`

Software Engineering Intern – Toronto, ON

- **Introduced cloud/serverless support** by providing userspace TCP/IP emulation for LXC containers, using Google gVisor.
- Enabled standardized communication using SOCKS5 protocol over Tailscale VPN by implementing proxy server in Go.
- **Simplified deployments in cloud environments** by creating single-session authentication keys with auto-cleanup.
- Enabled clients to **secure CI/CD pipelines** by creating a GitHub Action (link) that allows workflows to use Tailscale VPN.
- Expanded outreach within the technical community by writing long-form content for corporate blog (link).

University of Waterloo
`May 2020 – Aug 2020`

Research Associate, Sirius Blockchain Research Group – Waterloo, ON

- Optimized Go blockchain 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.
- Unified similar codebases by migrating duplicate components to a single C++ project.
- Assisted distributed systems research by conducting experiments on AWS EC2 and analyzing performance data in gnuplot.

Creesync Software
`May 2019 – Aug 2019`

Software Engineering Intern – New Delhi, India

- 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 NodeJS and AWS S3.

The Girl Code
`Mar 2018 – Apr 2020`

Volunteer Full Stack Developer – New Delhi, India

- Developed online platform to interactively teach programming in **10+ workshops across 3 countries** using NodeJS.

PROJECTS

CHIP8-rust (link) *Rust*
Emulator for CHIP-8 microprocessor. Simulated behavior of machine instructions with Rust, created graphics in framebuffer.

Turtle Shell (link) *C, POSIX APIs*
Shell for Unix operating systems in C. Learned memory management, process management, and usage of POSIX interfaces.

cmdmap (link) *NodeJS*
Node module to map CLI programs to a JSON API. Designed abstraction over standard library features for improved security.
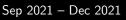
Prose (link) *Go, HTTP, systemd*
Designed HTTP server with hooks for logging, routing and error handling, with systemd service for uptime and observability.
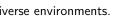
EDUCATION

University of Waterloo
`Sep 2019 – Apr 2024`

Bachelor of Computer Science – 3.92 GPA

- **Awards and Honors:** $15,000 Computer Science Upper Year Scholarship, Dean's Honors List
- **Relevant Coursework:** Data Structures, Object-Oriented Programming, Applied Cryptography