

Saksham Mittal

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Work Experience

1. Undetect *January 2024- July 2024* *Software Developer (Intern)* undetected.io

- Developed patches to enable large, enterprise-scale web scraping using Chromium.
- Reduced CI run timings by 80% through the development of a custom compile caching method
- Contributed 75+ pull requests and 400+ commits to internal Chromium fork (a 30 million+ LOC codebase)
- Built a tool to deobfuscate antibot scripts, generating human-readable JavaScript snippets and enhancing web application firewall insights.
- Conceptualized, designed and owned an automated scanning pipeline to monitor key websites for antibot changes, recording changes in antibot behavior and speeding up research efforts.
- Created custom tooling to streamline the patch-based workflow of an internal Chrome fork, improving development efficiency.
- Helped develop Docker-based workflow for launching and testing browser builds, unifying staging and deployment environments.

2. Google Summer of Code *May - August 2023* *Open Source Contributor at the Tor Project* gitlab.torproject.org/gotlou/arti-sample-project

- Found multiple documentation and concurrency issues in Arti, made and reviewed MRs to fix these
- Wrote a concurrent download manager to fetch Tor Browser over the Tor Network in cases where direct access to the Tor Project's website may be prohibited
- Implemented a compliant DNS over TCP resolver to make A record queries for domain names over Tor as a way to evaluate Arti's ease of use when facilitating non-HTTP connections using Arti
- Created a fast status checking tool for obfs4 bridges in order to generate valuable insight into the overall health of these critical relays, to be used by the Tor Project in production
- Added low-level APIs critical to running pluggable transports in server mode to Arti for future scope

Education

- **National Institute of Technology, Kurukshetra**
December 2021 - June 2025
B. Tech. in Information Technology *CGPA: 8.93*

Skills

- **Technical Skills:** Rust, C++, C, Python, TypeScript, Go, Nix, Bash, Docker, PostgreSQL, MySQL, SQLite, Playwright, Object Oriented Programming, Networking, Debugging, Code Review, Linux, Chromium Dev, Git, Concurrency, Database Design
- **Soft Skills:** Teamwork, Decision Making, Time Management, Resilience, Creativity, Problem Solving
- **Languages:** English, Hindi

Projects

1. P2P File Transfer

Link: github.com/gotlouguit/p2p-file-transfer

Summary: Transfer files directly using the power of the Internet with zero servers required

Details:

- Designed a custom reliable file transfer protocol
- Can traverse easy NATs to establish a direct connection, avoid a central server and thus virtually reducing hosting fees by 100%
- Learnt about Rust, async network programming, network protocol design, parsing
- Technologies: Rust, Tokio, UDP

2. sshield

Link: github.com/gotlouguit/sshield

Summary: Secure, drop-in SSH agent replacement and key manager

Details:

- Uses encrypted at rest SQLite database and SSH agent protocol for authentication
- Allows easy importing of key data from OpenSSH
- Supports caching authentication for specified time, auto-opening database on login to Linux system
- Technologies: Rust, rusqlite, SQLite, russh

3. NixOS configuration

Link: github.com/gotlouguit/nix-config

Summary: Personal NixOS installation, with wide array of security changes

Details:

- Used secure alternatives of system services and tools, such as Chrony, dnscrypt-proxy or sudo-rs
- Root file system mounted on tmpfs to reduce threat of persistent malware
- Custom sandboxing configurations for critical systemd services restricting filesystem, network & device access
- Technologies: Nix, bash, NixOS