

# Saksham Mittal

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## Projects

### 1. P2P File Transfer

**Link:** [github.com/gotlouguit/p2p-file-transfer](https://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. Vaidhya

*2 Person Team Project*

**Link:** [github.com/vaidhya-web](https://github.com/vaidhya-web)

**Summary:** Web application enabling users to locate nearby doctors based on specialization and city.

**Details:**

- Implemented distinct functionalities for token purchases, allowing patients to avoid queues, and appointment bookings for specific timings
- Built backend from scratch, including database design, JWT authentication and REST API creation
- Technologies: Rust, Axum, sqlx, PostgreSQL, JavaScript, TailwindCSS

### 3. sshield

**Link:** [github.com/gotlouguit/sshield](https://github.com/gotlouguit/sshield)

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

**Details:**

- Uses encrypted at rest SQLite database for key management
- Allows easy importing of key data from OpenSSH format and uses config to smartly import settings
- Technologies: Rust, rusqlite, SQLite, russh

## Experience

### Undetect

*January - July 2024*

*Software Engineering Intern*

*undetect.io*

- 40+ PRs merged, 180+ commits made
- Improved CI pipeline speed by 90% by using intelligent caching of previous compiles
- Responsible for more than 70% of existing tests to Chrome fork
- Created custom tooling to manage internal Chrome fork's patch-based workflow
- Created custom analysis tool to analyze obfuscated antibot script behavior and generate human readable JavaScript snippets
- Conceptualized and delivered an automated scanning pipeline to use analysis tool to monitor key websites for antibot changes

### Google Summer of Code

*May - August 2023*

*Open Source Contributor at the Tor Project*  
[gitlab.torproject.org/gotlou/arti-sample-project](https://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, 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