

Saksham Mittal

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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. Vaidhya

2 Person Team Project

Link: 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

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

Google Summer of Code

May - August 2023

Open Source Contributor at the Tor Project

(ongoing)

gitlab.torproject.org/gotlou/arti-sample-project

- Found multiple documentation and concurrency issues in Arti
- Made and reviewed multiple Merge Requests to fix such issues in the upstream repo by working with Arti developers
- 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

Education

• National Institute of Technology, Kurukshetra

December 2021 - June 2025

B. Tech. in Information Technology

CGPA: 9.05

• Delhi Public School, Indirapuram

April 2020 - May 2021

Class XII

97.8%

Skills

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

Achievements

• Google Summer of Code

Selected among 967 out of 43765 applicants from 160 countries

• JEE Mains 2021

Got rank 6929; 99.34 percentile

• JEE Advanced 2021

Got rank 6892