Saksham Mittal

- **Email:** gotlouemail@gmail.com
- **Website:** gotlou.srht.site
- **GitHub:** github.com/gotlougit
- **LinkedIn:** linkedin.com/in/saksham–mittal
- **Address:** Kurukshetra, Haryana, India

Projects

1. **P2P File Transfer**
   Link: github.com/gotlougit/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/gotlougit/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
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
- 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: 9.05*

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 2023**
  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