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# Sujal Singh

## Projects

◇ **Mitmproxy**
I have made several contributions to mitmproxy, an interactive TLS-capable intercepting HTTP proxy. Notable contributions:

- Fixed an HTTP/2 flow-control bug that slowed downloads, yielding a 10x increase for most cases. [#7317]
- Resolved bugs in HTTP and DNS flow handling, as well as in the terminal and web interfaces.
- Authored pytest tests for nearly all contributions, in line with the project's test coverage requirements.

◇ **Skylon**
Skylon is a web browser rendering engine written entirely from scratch which implements an HTML parser, a CSS parser and a rendering pipeline. Wrote a custom test script to validate the HTML tokenizer against html5lib-tests.

◇ **Infra**
Infra is a modular infrastructure-as-code tool, built on top of pyinfra, that provisions bare Linux servers and deploys self-hosted services on them.

- Each service runs in rootless Podman containers under its own unprivileged user, managed through systemd via Quadlets.
- The CLI splits every task into named steps that can be included or skipped individually (e.g. `--exclude-steps build-image`).
- All commands and options are covered by shell tab completion.

◇ **ACT Fibernet – Vulnerability Disclosure**
Discovered that the ISP placed customers on a shared private network with inadequate firewall rules, exposing devices otherwise unreachable from the public internet. Reported the flaw and was rewarded 10k INR. Report

◇ **Delhi Police – Cybersecurity Hackathon**
Secured first position and a reward of 12k INR for developing a filter that actively prevents any client device from accessing potentially malicious URLs. Traffic is proxied through mitmproxy's WireGuard mode, and filtering logic is injected via a mitmproxy addon. Source Code

## Skills

◇ **Languages:** Python, C, JavaScript, HTML/CSS.

◇ **Testing:** pytest, Playwright, Selenium.

◇ **Others:** Git, Docker, Podman, Linux Administration.

## Education

◇ **University School of Automation & Robotics** *2023 – 2027*
Bachelor of Technology in Industrial Internet of Things.

◇ **St. Xavier's School, Rohini** *2010 – 2022*
Central Board of Secondary Education.