

Aiman Singh

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Technical Skills

Languages: Python, TypeScript, Golang, Rust

Technologies: React, Next.js, Node.js, Express, Django, FastAPI

Tools: Git, Linux, Docker, Redis, AWS, RabbitMQ

Projects

CoxyProxy | *Python, asyncio, Electron, Svelte, WebSocket, SSL/TLS*

- Built a MITM proxy server in Python using `asyncio` handling 200+ concurrent connections at sub-10ms latency with zero packet loss.
- Engineered a per-host X.509 certificate generation engine issuing TLS certificates in under 50ms, enabling real-time HTTPS traffic decryption.
- Built a cross-platform Svelte desktop UI with a binary-optimized WebSocket protocol for live packet inspection, reducing IPC overhead by 40%.
- Automated browser certificate injection for Chrome and Firefox via NSS database modifications, achieving 100% reliable HTTPS interception.

Pixie | *Next.js, TypeScript, Go, WebSocket, JWT, Zustand*

- Built a real-time collaborative drawing platform using Next.js and a Go WebSocket backend, supporting shared canvas sessions via room links.
- Secured WebSocket connections with stateless JWT auth issued by Next.js and validated in Go, enforcing strict 2-user-per-room limits without third-party auth libraries.
- Implemented per-room mutex locking in the Go server for concurrent stroke broadcast, automatic dead-client cleanup, and empty-room garbage collection.

VSP-FFmpeg | *Python, Django, Celery, FFmpeg, Docker, Redis, NGINX*

- Built a video transcoding pipeline generating adaptive bitrate HLS variants (480p/720p/1080p) via FFmpeg, reducing buffering by 60% through bandwidth-aware streaming.
- Implemented distributed task queue with Celery and RabbitMQ achieving 3x parallel encoding speedup, cutting per-GB processing time from 15 to 5 minutes.
- Containerized 6-service architecture with Docker Compose (Django, Celery, RabbitMQ, Redis, PostgreSQL, Nginx), achieving 99.9% uptime in production.

Open Source Contributions

astral-sh/uv | *Rust, 82.4k* ☆ | [PR #18752](#)

- Added a progress bar to the hashing phase in `uv publish`, eliminating the appearance of a frozen terminal during large file hashing before upload.

sveltejs/svelte | *TypeScript, 86.1k* ☆ | [PR #17542](#)

- Fixed SSR crash (`TypeError: Component is not a function`) for falsy dynamic components by switching to `b.maybe_call`; merged by core maintainer Rich Harris.

sveltejs/kit | *TypeScript, 20.4k* ☆ | [PR #15457](#)

- Fixed remote form redirects ignoring `target="_blank"` in `form.svelte.js` by reading `formtarget` from the submitter or `target` from the form and early-returning before `preventDefault()`.

pydantic/pydantic | *Python, Rust, 27.2k* ☆ | [PR #12907](#)

- Added `ascii_only` flag to `StringConstraints`, implemented in Rust via native `.is_ascii()` for a 5.19% benchmark improvement over the prior regex workaround.

pydantic/logfire | *Python, 4.1k* ☆ | [PR #1781](#)

- Implemented `logfire auth logout` CLI command with `UserTokenCollection.logout()` supporting per-region and global credential removal, with full test coverage.

Education

KIET Deemed to be University

B.Tech in Computer Science

2024 – 2028

India