Nathan Paul

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EXPERIENCE

Research Intern @ PES Innovation Lab (formerly Microsoft Innovation Lab)   Jun '25 – Jul '25
- Worked on **MiCoz**, a research project exploring tuning methodologies for microservices
- Used virtual speedup to identify key bottleneck services across nodes.
- Prototyped latency instrumentation on real and simulated DAGs to pinpoint true bottlenecks.
- Presented research findings & optimization strategies to a professional audience at the final MiM event.

Platform Engineering Intern @ Golain.io. Remote, Pune   Mar '25 – Apr '25
- Refactored the workflow/rule engine, migrating to a **DAG**-based approach for improved scalability
- Worked on rule logic and increased modularity across platform components

Developer, **ACM Industrial Experience Program**   Feb '24 – Apr '24
- Part of the team that built **anna**, a static site generator written in Go.
- Achieved **284.5 ms** render time for a 1000-file benchmark, outperforming Hugo and 11ty.
- Created a sitemap generator, set up RSS feeds, and an interactive tag-graph (D3.js).
- **DevOps:** Implemented CI/CD pipelines, a setup wizard, and theme bootstrapping.
- Presented at the 76th Go Bangalore meetup.

SKILLS

Languages: Go, Python, Bash, C, Nix, CSS, Redis, Postgres
Technologies: Git, Docker, GNU/Linux, Vim, Observability
Writing, Communication: Blogging, LaTeX, Free Software Documentation, RFCs

INTERESTS

FOSS • Privacy • Protocols • GNU/Linux • Systems • IoT • Startups • Microservices

PROJECTS

- **jukebox** — Headless music-queueing service that pulls LastFM recommendations and enqueues tracks into MPD using **yt-dlp**.
- **lava** — Node daemon that saves bookmarked articles into an Obsidian vault. Fetches, sanitises and organises content into markdown notes for offline reading and annotation.
- **wombat** — Wikipedia crawler that builds article graphs and visualises relationships between pages.
- **pasta** — Minimal pastebin service written in Go.
- **drago** — A proof-of-concept DAG-based workflow engine demonstrating lightweight scheduling and pluggable task runners.

FOSS CONTRIBUTIONS

- **anna**: A lightning fast static site generator written in **Go**. Implements parallel rendering, live-reload and a minimal runtime; used to power fast personal sites and benchmarks where it outperformed Eleventy and Hugo.
- **eloop**: A serverless all-in-one event-management system (RBAC, dynamic forms, QR checkins). We served 250+ concurrent users at our last hackathon. **NextJS**, **Google OAuth**, **Vercel**, **TursoDB**, **Tailwind**.

EDUCATION

B.Tech in Computer Science & Engineering at PES University   2023 – 2027
ISFCR Dean's Award: Ranked 6th out of 250 participants in a jeopardy-style CTF.

Mentor Lead @HSP PESU   June '25 – Present
- Leading the mentor team and coordinating club-wide initiatives
- In charge of **Tilde 4.0**, HSP's flagship summer-mentorship program
- Overseeing technical contributions and workshops for the '26 term

Technical Mentor @HSP PESU   Oct '23 – May '25
- Maintainer of the club website, powered by anna
- Mentored contributors to psh, a POSIX-like shell
- Presented **jukebox** and **anna** at HSP Mentor Expo and Fireside Talks

Member @ACM PESU   Sept '23 – Present
- Maintainer Lead for Hacknight 6.0
- Mentored contributors to nimbus, a TUI client for Bluesky

Member @GDSC PESU   Aug '23 – Sept '24
- Hosted FOSS 101, an introductory workshop on open source
- Designer for Override, a Google Solutions Challenge hackathon

MISC

- **Proof of Work**: A reverse chronological record of my work.
- Videos: YouTube channel focused on tech, privacy, and libre software.
- Photos: Photos that I have shot and edited.
- Ammachis Kathas: Malayalam short stories (an audiobook).
- arceo: Blocklist against social media, news & consumerism.
- wiki: My digital garden, a linkstash with web clippings.

⟲ October 22, 2025