

WORK EXPERIENCE

Fermion | Software Development Engineer 2 | Aug 2025 - Oct 2025

- Reworked the PostgreSQL/PgBouncer connection path so the backend no longer depended on one PgBouncer VM. Added multiple PgBouncer endpoints, separate pools per endpoint, endpoint rotation, circuit breakers, and bounded retries, so one bad VM stopped taking the whole app down.
- Moved VM-hosted Node workers from manual `screen` sessions to `systemd`. Services now restart after crashes, survive reboots, expose status/logs through standard Linux tooling, and support blue/green deploys where the new version starts before the old one drains.
- Fixed Stripe checkout amount conversion for zero-decimal currencies such as JPY, KRW, and VND. The tricky part was that Stripe expects currency-specific integer minor units, so treating every currency like USD cents could send amounts that were off by 100x.
- Made production crashes easier to debug by moving service logs to `journald`, adding retention limits to protect disk space, and enabling Node diagnostic reports for fatal errors, uncaught exceptions, and shutdown signals.

HireRoger (YC Summer 2024) | Founding Engineer (Contract) | Jan 2025 - June 2025

- Built backend workflows for an AI SDR/CRM product: campaign setup, ICP filters, mailbox/LinkedIn account connection, lead research, draft approval, scheduling, and automated sending.
- Designed the campaign orchestration layer that turned user inputs into outreach plans, generated drafts, activation jobs, send schedules, and daily execution tasks across email and LinkedIn.
- Built LLM personalization flows using reusable templates, research instructions, per-lead context, and fixed sequence structure, so generated messages stayed consistent while still referencing each prospect's company and role.
- Shipped lead sourcing and enrichment workflows that combined CSV imports, scraped websites, LinkedIn data, email discovery, ICP filters, and Typesense fuzzy search to find, rank, enrich, and save qualified prospects into campaigns.

Nordstone, UK | Fullstack Developer (Contract) | Jul 2023 - Dec 2024

- Led frontend work for RateMyStation, an anonymous newsroom review platform. Built review feeds, news director search, job-detail cards, category navigation, subscription flows, responsive layouts, and cross-browser fixes.

IntelliconnectQ Analytics | Fullstack Developer Intern | Dec 2022 - Jan 2023

- Built a Next.js 13 suit-customization frontend and connected product options, customization state, cart, and checkout flows to Shopify.

SKILLS

AI Engineering:	LLM, RAG, agentic workflows, LangChain, LangGraph, LangSmith, OpenAI, Gemini, Vercel AI SDK, evals/tracing
Backend Engineering:	Python, TypeScript/Node.js, FastAPI, Hono, Elysia, WebSockets, Socket.IO, PostgreSQL, pgvector, Prisma, Kysely, Typesense
Frontend/Realtime:	Next.js, React, Vite, TanStack Router, Tailwind CSS, WebRTC, mediasoup, FFmpeg, HLS, hls.js
DevOps/Cloud:	Terraform, GCP Compute Engine, VPC/subnets, NAT, firewall rules, nginx, Docker, Linux, shell scripts, systemd, journald, iiii, CI/CD

EDUCATION

2019 - 2022	CGPA 9.59/10	Bachelor of Engineering, SKNCOE
2016 - 2019	Percentage 80.52	Diploma in Engineering, Government Polytechnic Malvan

OPEN SOURCE CONTRIBUTIONS

OpenWhisper | Electron hotkeys, dictation UX

- Shipped two merged fixes for a free WhisperFlow alternative. Moved dictation start/stop and route-recording transitions into shared helpers, then adjusted streaming-stop cue order so hotkey feedback stayed audible while music was playing.
- Fixed a hotkey rebinding crash by checking the previously saved Electron accelerator before calling `globalShortcut.unregister`, keeping the update flow alive when users had an invalid old shortcut.

Capgo #471 | Bun migration, CI

- Migrated project setup from pnpm to Bun across GitHub Actions workflows, install scripts, docs, Playwright config, TypeScript config, and package scripts.
- Replaced pnpm lockfiles with Bun lockfiles and updated developer-facing commands, so local setup, backend tests, Netlify builds, Cloudflare worker deploys, and iOS CI used the same package manager.

Firecrawl SDKs | JS, Python, Rust

- Changed auth validation across the JavaScript, Python, and Rust SDKs so `api.firecrawl.dev` still requires an API key, while local and self-hosted URLs can initialize without one.
- Updated SDK tests and self-hosting docs around the new boundary, covering cloud-authenticated clients and API-key-free self-hosted clients.

Kestra plugin-fs #237 | Java API design

- Replaced the misleading SSH config directory API with an explicit `openSSHConfigPath` property, matching the plugin behavior that expects a file path such as `~/.ssh/config`.
- Deprecated the old `openSSHConfigDir` property in annotations and schema text while keeping runtime compatibility through a single fallback inside the SSH command path.

PROJECTS

Google Meet SFU

[DEMO](#) | [SOURCE CODE](#)

- Built a local group-video app with Bun/Turborepo, React, Elysia WebSocket signaling, mediasoup SFU, and WebRTC transports for camera/mic publishing and peer consumption.
- Implemented meeting rooms, device controls, producer/consumer setup, and peer state updates without relying on a managed RTC provider.
- Added an HLS broadcast path where the first peer composes a canvas/audio program feed, mediasoup emits plain RTP, FFmpeg writes HLS segments, and `hls.js` plays the watcher page.

Alchemyst DevOps

[SOURCE CODE](#)

- Provisioned a GCP deployment with Terraform for `iii` distributed inference: VPC, subnet, NAT, firewall rules, and Compute Engine VMs where only the `nginx`/API gateway is public.
- Wrote startup scripts and `systemd` services for the gateway, TypeScript caller worker, and Python inference worker so each VM boots into the right process.
- Documented smoke tests, IAP SSH checks, health endpoints, and `terraform destroy` teardown so the deployment path is reproducible.

arXiv7 LangGraph

[DEMO](#) | [SOURCE CODE](#)

- Built a Context7-inspired research assistant for arXiv papers with LangGraph, Hono, PostgreSQL, pgvector, and LangSmith tracing.
- Used a two-stage retrieval path: resolve the target paper first, then search only that paper's chunks so answers stay scoped to the selected source.
- Indexed metadata, abstracts, summary embeddings, and chunk embeddings; combined vector search, PostgreSQL full-text search, and Reciprocal Rank Fusion for retrieval.

Agent Console Alchemyst

[DEMO](#) | [SOURCE CODE](#)

- Built a Next.js agent console for a WebSocket backend with streaming token rendering, tool-call cards, trace timelines, context snapshots, and JSON diff inspection.
- Kept protocol handling inside a Web Worker: Zod validates unknown frames, sequence numbers reorder and dedupe messages, and small Zustand stores feed the UI.
- Split the interface into chat, trace, context, and diff panes so a developer can inspect agent output, tool calls, and state changes during one run.

ringg

[DEMO](#) | [SOURCE CODE](#)

- Built a Bun/TypeScript voice CLI for Gemini Live that captures the OS default microphone, streams 16 kHz mono PCM speech frames, and plays 24 kHz PCM model audio through the default speaker output.
- Added local voice activity detection with `realtime-vad`, startup env validation with Zod, terminal transcription output, and clean `Ctrl+C` shutdown.
- Implemented barge-in handling that clears queued speaker playback when the user interrupts a model response.

Intelligent Resume Assistant

[DEMO](#) | [SOURCE CODE](#)

- Built a Bun workspace app with React, Elysia, Drizzle, SQLite/libSQL, Vercel AI SDK, and Zod for resume-grounded hiring Q&A.
- Ingested pasted resume text and uploaded PDF/text files, extracted candidate facts, and stored normalized resume and chat history records.
- Added guardrails so answers must match a JSON schema with confidence, source, and missing-data fields; unknown facts return `Not mentioned in resume`.