# Rutam Bhagat

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## WORK EXPERIENCE

**Fermion | Software Developer Engineer 2 | Aug 2025 - Oct 2025**

- Migrated VM Node services from screen to systemd with blue/green deploys; standardized overlap-safe deploy scripts and per-core workers across 4+ services for zero-downtime releases.
- Hardened Postgres failover with per-endpoint circuit breakers and exponential retry (100ms to 2s, up to 3 attempts); added endpoint-level error summaries while preventing credential leakage.
- Implemented client-side PgBouncer failover by supporting DATABASE_CONNECTION_URLS in CI/runtime, removing single-URL assumptions to enable multi-endpoint resilience without code forks.
- Built multi-router mediasoup wiring to stabilize transport lookup and layer switching; enforced router assignment per client and cleanup on disconnect using original producer IDs.
- Refactored VM image build uploads into a shared uploadImageToStorages helper across AV processor, DSA server, and mediasoup builds, reducing copy-paste paths and env-specific bugs.

**HireRoger Ycombinator Summer 24 | Founding Engineer | Jan 2025 - Jun 2025**

- Built campaign setup and ICP targeting flows, including persona and industry filters plus multi-channel outreach configuration (email + LinkedIn) for automated sequences.
- Implemented templated personalization with placeholder directives for AI research blocks, enabling per-lead customization while keeping core sequences consistent.
- Built lead sourcing and enrichment pipelines, including CSV and website scrapers plus AI lead-finder workflows to surface qualified contacts and companies.
- Implemented backend CRM workflows with Next.js, PostgreSQL, and Prisma; wired BullMQ queues for sequence generation, follow-ups, and long-running data tasks.

**Nordstone, UK | Fullstack Developer | Jul 2023 - Jul 2024**

- Led the frontend for RateMyStation under Nordstone, building the Ratings feed, review detail and job-detail panels.
- Implemented discovery UX including Find a News Director by name, category tabs.
- Built site-wide responsive navigation, content surfaces and made sure consistent layout across sections.

## OPEN SOURCE CONTRIBUTIONS

**Cap-go | Migration to Bun for Improved Performance**

- Led the pnpm to bun migration for Capgo's build system, targeting benchmarked faster installs (about 4x faster than pnpm, roughly 75% shorter) to speed CI feedback loops.
- Unblocked E2E by keeping pnpm in the demo/test app path where bun compatibility was limited, while maintaining bun as the default for core workflows.
- Coordinated with maintainers on test failures and CI cache nuances to roll out the new toolchain without disrupting stability.

## PROJECTS

**Google Meet SFU**                                                    DEMO | SOURCE CODE

- Built a Mediasoup SFU video conferencing stack with Socket.IO signaling and multi-user audio/video flows without blackbox services (e.g., Twilio/LiveKit).
- Implemented WebRTC-to-HLS conversion with FFmpeg composite layouts, segment cleanup, and HLS serving for live viewers.
- Shipped DVR-ready playback by stabilizing the live edge and back-buffer behavior to enable time-shifted seeking.
- Architected a Turborepo monorepo with Next.js 15 web app and Hono server, separating realtime UI and media pipeline concerns.

**Code Wizard | LangChain Documentation Chatbot**                      DEMO | SOURCE CODE

- Built a LangGraph RAG pipeline that retrieves documentation chunks via a LangGraph DAG to answer questions.
- Implemented streaming chat UX with Vercel AI SDK ai/rsc, with LangGraph event streaming to progressively render output.
- Developed the full-stack app with Next.js UI and FastAPI backend, including code rendering and chat state management.
- Added performance optimizations like caching and streaming to reduce perceived latency.

## SKILLS

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|---|---|
| Languages: | Python, TypeScript |
| Lib and Frameworks: | LangChain, LangGraph, Next.js, React.js, Tailwind, FastAPI, OpenAI |
| DB, Auth, Deployment, Monitoring: | PostgreSQL, BullMQ, SQLAlchemy, NextAuth, Drizzle, Prisma, Vercel, AWS |

## EDUCATION

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| 2019 - 2022 | CGPA 9.59/10 | Bachelor's of Engineering Degree at SKNCOE |
| 2016 - 2019 | Percentage 80.52 | Diploma in Engineering at Government Polytechnic Malvan |