

KRISHNAN KAMATCHI

Senior Software Engineer

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Summary

Senior Software Engineer with nearly 5 years of experience building production systems in TypeScript and Rust across web, backend, mobile, desktop, and TV environments. Experienced in end-to-end product ownership, from system architecture and AI integration to cloud and edge delivery. Strong in performance optimization, security, and production debugging across application, edge, and infrastructure layers.

Technical Skills

Languages: TypeScript, JavaScript, Rust, SQL, PHP, Dart

Frontend: Next.js (App Router, SSG, ISR), React, Angular, TanStack Query, Zustand, Tailwind CSS, PWA, Capacitor

Backend: Node.js, Hono, NestJS, Express, Bun, ElysiaJS, Actix Web (Rust), REST APIs, WebSockets, Server-Sent Events

Databases: PostgreSQL (pgvector, pg_trgm), MySQL, Redis, SQLite, Drizzle ORM, SeaORM, SQLx

AI / LLM: Agentic tool-use pipelines, multi-model escalation, structured outputs (Zod), retrieval-augmented few-shot prompting, LLM-as-judge, golden-set evals, prompt-injection guardrails, inference cost controls

Cloud & Edge: AWS (ECS Fargate, ECR, ALB, EC2, RDS, S3, ElastiCache), Akamai, Cloudflare, Docker, Linux

CI/CD & Testing: GitHub Actions, Jenkins, Vitest, Playwright

Observability: Grafana, Loki, CloudWatch, SigNoz, Clinic.js

Security: OWASP Top 10, VAPT, secure code auditing, WAF rules, bot mitigation, IP reputation filtering, distributed rate limiting and throttling, secrets management

Platforms: Electron (Windows, Linux, Raspberry Pi), Flutter, EnactJS (LG webOS, Samsung Tizen)

Professional Experience

Senior Software Engineer

Dec 2025 – Present

Matrimony.com Limited

Chennai

Mandap.com | WeddingBazaar (CRM) | WedAssist.com | WeddingGiftBox.com

Platform and architecture

- Built Mandap.com's current platform from the ground up: venue discovery across **40,000+ listings** on Next.js and React, backed by a Hono and PostgreSQL service.
- Structured the frontend as a four-layer **hexagonal (ports-and-adapters) architecture** with Zod contracts at every API boundary, so APIs and infrastructure change without touching UI code.
- Upgraded **Next.js 14 to 16 with React 19**; shipped iOS and Android apps from the same codebase via Capacitor.
- Moved the team to **trunk-based development** with feature flags and GitHub Actions CI/CD (parallel lint and type-check gates, tests, Docker images to AWS ECR), so unfinished work merges continuously without blocking production releases.
- Migrated WhatsApp notifications from Sinch to Qikchat, rebuilding template delivery and status webhooks.

Cloud migration and edge delivery

- Led the frontend of the move off a legacy stack (production in SVN, hand-copied releases, downtime windows) to containers on **AWS ECS Fargate** behind ALB and **Akamai**, preserving URLs, redirects, and metadata on an SEO-dependent site.
- Diagnosed a post-launch origin overload that looked like a bot attack: container memory rose from about 200 MB to over 2 GiB because a short Akamai TTL compounded aggressive ISR revalidation. Found by correlating Akamai, ALB, Loki, and CloudWatch data in Grafana, then retuned both layers to bring memory back to baseline.
- Fixed city personalization fragmenting the CDN cache using Akamai cookie rules, SSG with ISR for the top 10 cities, and a prebuilt generic page for all others, **cutting homepage origin hits by over 75%**.

Manvia – AI natural-language venue search

- Built Manvia on the Vercel AI SDK and Groq: a tool-calling loop that turns free-text queries into structured search filters, resolving cities, localities, and Tamil/Hindi terms against live data via pg_trgm, escalating from a 20B to a 120B model under a shared latency budget.
- Cut third-party LLM spend from **20K to under 1K per month** (over 95%) with a four-tier cache (in-process LRU, Redis, pgvector semantic match, then the model), invalidated automatically when the prompt or pipeline changes.
- Found and fixed a rate-limiter race that let **55 of 55** concurrent requests through; replaced it with atomic per-IP, per-session, and global daily limits.
- Blocked SQL, script, and prompt injection before any cache or model call, and removed a committed fallback secret from internal service-to-service auth.
- Built a golden-query eval harness with a 90% accuracy bar and zero-regression gate.

Senior Software Developer

Aug 2024 – Nov 2025

Impelox Tech Pvt Ltd

Chennai

Aura Insure Tech

- Led feature development on Aura, an insurance management platform (Angular, NestJS, TypeScript, MySQL) covering quote generation, underwriting, and policy workflows, with hierarchical access control across internal teams, brokers, and partners.
- Upgraded the frontend from **Angular 13 to Angular 19**, working through six major versions of breaking changes in a live product.
- Built a rule-driven underwriting engine that evaluates validations, loadings, and discounts from JSON rule sets at runtime, so policy changes ship without code changes.

Software Engineer

Nov 2021 – Aug 2024

Shrav Infotech

Chennai

GreatCollections | Hyzign | VisionApp

- Engineered proxy bidding, multi-bidding, consecutive coin lot listings, and advanced search APIs (PHP, MySQL, Memcached) for **GreatCollections**, one of the world's top five coin auction platforms.
- Worked on transactions, secure payment workflows, and buyer notifications for live auctions.
- Built core modules of **Hyzign**, a commercial digital signage product for Windows, Linux, Android, Tizen, and webOS, in Node.js, Electron, and React with Rust services.
- Designed delta-tracked content sync that pushes only changed assets to screens, with real-time TV-to-web sync over Server-Sent Events and WebSockets, and headless TV apps for LG webOS and Samsung Tizen in EnactJS.
- Contributed to VisionApp, a Flutter and TensorFlow Lite app for offline image recognition.

Personal Projects

Hydra – Signage Engine

Rust, Actix Web, SeaORM, PostgreSQL, Redis

- Private signage engine written from scratch in Rust, targeting Linux, Windows, Android, iOS, Tizen, webOS, and Raspbian (ARM) from one core.
- Actix Web API with WebSocket actors for live screen control, SeaORM/SQLx over PostgreSQL or SQLite, Redis-backed sessions, Prometheus metrics, and OpenAPI docs.

Homelab

Radxa Rock 5C, Docker, Cloudflare Tunnel

- ARM server running Hydra and the backend for Symbiote, my Flutter tracking app, behind Cloudflare tunnels, a reverse proxy, segmented subnets, and a container sandbox.

Writing

We Migrated 6 Years of Legacy Code. Production Chose Violence.

dev.to, Sep 2026

Education & Certifications

B.E. Mechanical Engineering, Excel Engineering College | CGPA: 8.20

2017 – 2021

Certified webOS Developer – LG Headquarters, Bangalore

HackerRank Certified Node.js Developer – Event-Driven Architecture and Concurrency

CodeSignal Certified JavaScript Developer