Naveen Gali

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PROFESSIONAL SUMMARY

Full-stack software engineer with 5+ years building customer applications, backend services, and data systems. Led delivery of a geospatial platform, built production services on AWS, and deployed AI prototypes for clients.

PROFESSIONAL EXPERIENCE

Data Strategy Lab - *AI Engineer (Contract)* Sep 2026 - Present

- Built and deployed Python and TypeScript prototypes that let clients query internal documents using retrieval-augmented generation (RAG), implementing ingestion, retrieval, reranking, generation, evaluation, APIs, and user interfaces.
- Defined architecture, acceptance criteria, structured outputs, and evaluation plans directly with clients.

Polyhistor Inc - *Software Engineer & Technical Lead* Oct 2025 - Aug 2026

- Led hands-on architecture and delivery with a small engineering team, shifting the product from a consumer travel app to an enterprise geospatial API and securing Inhotel Inc as the first enterprise pilot customer.
- Designed **D-GIX** with PostGIS spatial filters, pgvector/HNSW semantic search, and temporal state machines. Co-authored the paper reporting **0.97 Recall@10 vs. 0.20** for the spatial-only baseline on 70 curated queries.
- Architected a DuckDB pipeline that processed **3.55M+ points of interest** from Overture Maps directly from disk-backed Parquet files, avoiding the out-of-memory failures encountered with Pandas.
- Deployed Dockerized PostgreSQL, Redis, and Python services on **AWS EC2**. Tuned Docker shared memory and PostgreSQL maintenance memory to resolve HNSW index-build failures.
- Evaluated cached and full-API workloads separately. The cached heatmap endpoint completed **4,414 total requests with zero failures** in a 100-user, 60-second load test. The full-API test exposed embedding-related timeouts.
- Built React/TypeScript neighborhood pilot pages and walkability, greenery, and noise APIs for a European city.

Rebecca Everlene - *Software Development Engineer II* Jan 2025 - Jan 2026

- Led delivery of Landmarks, a location-based mobile app, from concept to **public beta in four months with zero critical defects**, coordinating 12 engineers across React Native and Node.js.
- Built a shared React Native component library with Storybook, cutting feature delivery time **30%**.

Grid Dynamics - *Software Engineer* Dec 2022 - Sep 2023

- Built AWS microservices (Java/Spring Boot, PostgreSQL, MongoDB) handling **50K+ daily transactions at 99.9% uptime**.
- Cut production incidents by **25 per quarter** with automated MongoDB backup/restore runbooks and Prometheus alerts.
- Led migration of **150K+ lines of React Native code** to strict TypeScript for a retail client, with zero breaking changes and no type-related defects in post-release reports.

IG Defence - *Software Engineer* Jul 2020 - Dec 2022

- Built Dockerized WebSocket/Redis pub/sub notifications, cutting alert latency from minutes to **under two seconds**.
- Rebuilt authentication and dashboard flows across **10,000+ business accounts** using OAuth 2.0 and JWT refresh-token rotation, increasing user retention **50%**.

SELECTED PROJECTS

MatterGate - AI Research Demo with Access Controls | Python, FastAPI, SQLite/FTS5, Nebius, AWS Lightsail

- Built a synthetic-data demo that adapts PriviLAB components to check permissions before retrieval, record run decisions, and route drafts that pass structural checks to human review.
- Deployed on AWS Lightsail with workspace isolation, persistent inference quotas, and automated SQLite backups.

SKILLS

Languages: Python, TypeScript, JavaScript, Java, Go

Backend & APIs: FastAPI, Django, Node.js, Express, Spring Boot, REST, GraphQL, WebSockets, OAuth 2.0

Data & Search: SQL, PostgreSQL, PostGIS, pgvector, MongoDB, Redis, DuckDB, Parquet, Kafka, HNSW

Frontend & Visualization: React, Next.js, React Native, HTML5, CSS, D3, Mapbox, Storybook

Cloud & Infrastructure: AWS (EC2, S3, IAM, RDS), Docker, Kubernetes, Terraform, Vercel

AI & Retrieval: RAG, LangChain, LangGraph, Sentence-Transformers, OpenAI models, retrieval evaluation

Testing & Delivery: Jest, Playwright, GitHub Actions, CI/CD, Prometheus, CloudWatch, Jira

EDUCATION

Illinois Institute of Technology | *Master of Science in Computer Science* | Chicago, IL | Jan 2024 - May 2025