GAURAV NAGALAPURAM VENKATARAMANAN

nagalapu@usc.edu · Los Angeles, CA · github.com/naga251602 · linkedin.com/in/gauravnv · naga251602.github.io

EDUCATION

MS Applied Data Science · University of Southern California · Los Angeles, CA — Jan 2025 – Dec 2026
GPA: 3.6 / 4.0

B.Tech Information Technology · R.M.K. Engineering College · Chennai, India — Aug 2020 – Apr 2024
CGPA: 8.75 / 10.0 · First Class

EXPERIENCE

Full-Stack Developer · Aadithya Cars · Chennai, India — Apr 2024 – Nov 2024

- Cut page load time **3.2s to 800ms (75%)** via lazy loading, code splitting, and asset compression, directly improving Core Web Vitals scores.
- Replaced monolithic memory reads with a **chunk-based ingestion pipeline**, eliminating OOM crashes and enabling **4x throughput** on large inventory datasets.
- Decoupled layout recalculation from DOM writes on render-critical JS paths, cutting **time-to-interactive by 40%** on high-traffic listing pages.
- Wired third-party valuation and financing APIs with **retry + circuit-breaker patterns**, maintaining **99.5% uptime** under upstream instability.

Software Engineer Intern · SAWBON · Remote — Feb 2022

- Built **concurrent Go REST APIs** using goroutines, channels, and connection pooling, sustaining **sub-250ms p95** latency under load with zero downtime.
- Added **Redis cache-aside with TTL invalidation**, reducing DB read load by **30%** and median API latency by **15%**.
- Delivered **78% code coverage** on critical service paths via Go unit and integration tests.

PROJECTS

AIStora – Full-Stack Analytics Platform | Python, Flask, PostgreSQL, Redis, React, Docker — github.com/naga251602/aistora

- Built an **in-memory columnar query engine** processing 100K+ row datasets with sub-second filtering and aggregation, outperforming pandas by **3x** on benchmarks.
- Exposed via **Flask REST APIs with JWT auth and RBAC**; per-user schema isolation backed by PostgreSQL; **85% test coverage** via CI/CD on GitHub Actions.

GraphQL Task Management API | FastAPI, Strawberry, Redis, PostgreSQL, WebSockets — github.com/naga251602/todo-graphql

- **Schema-first GraphQL API** (FastAPI + Strawberry) reducing average payload by **60%** vs REST on nested queries; Redis DataLoader batching eliminates N+1.
- Handled **1,000+ concurrent WebSocket connections** at sub-100ms p99; OAuth 2.0 PKCE + query complexity limits enforce production-grade safety.

GBlog – Next.js Static Blogging Platform | Next.js, TypeScript, Vercel, Lighthouse CI — github.com/naga251602/gblog

- Scored **95+ Lighthouse** on mobile and desktop via ISR and automatic image optimization; deployed to Vercel with preview environments and automated Lighthouse CI on every PR.
- Implemented a custom **AVL tree search index** over post metadata for O(log n) tag/category lookup with automatic rebalancing on content updates.

OPEN SOURCE

PrintStruct | Python, CLI · PyPI — pypi.org/project/PrintStruct · github.com/ShahzaibAhmad05/gitree

- Contributed to a Python CLI tool that visualizes project directory structures while respecting **.gitignore** rules; published and maintained on PyPI.
- Refactored module structure to eliminate code duplication and improved README documentation to lower onboarding friction for new contributors.

SKILLS

Languages: Python · Go · C++ · JavaScript · TypeScript · SQL
Backend: FastAPI · Flask · Node.js · GraphQL · REST APIs · WebSockets · JWT · OAuth 2.0
Frontend: React · Next.js · Tailwind CSS · HTML / CSS
Databases: PostgreSQL · MongoDB · Redis · SQLite
DevOps: Docker · Kubernetes · AWS (EC2, S3, Lambda) · GitHub Actions · Nginx · Linux
ML / Data: PyTorch · scikit-learn · Pandas · NumPy · HuggingFace · BERT · DenseNet

ACHIEVEMENTS

Best Paper Presentation — 3rd Place — ICCDS 2024
Awarded at ICCDS 2024 for Human-AI Collaboration for Backend Text Generation.

3 IEEE Publications · 7 Combined Citations — 2024
Co-authored at ICCDS 2024 and ICCN 2024 spanning NLP, drug recommendation, and medical imaging.