

Shreyas Nalle

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SUMMARY

Applied AI Full Stack Engineer building **AI-integrated web applications** with **multi-agent systems**, **autonomous decision workflows** and **practical RAG architectures**. I work across **backend engineering** and **system architecture**, focusing on making software, AI products, agents and RAG systems **reliable**, **performant** and **scalable** under real-world traffic and heavy workloads.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Golang, C, C++, Java

Frontend: React, Next.js, TypeScript, JavaScript, Tailwind CSS, HTML5, CSS3

Backend & Cloud Deployment: FastAPI, Node.js, Express.js, Docker, Vercel, Render, REST APIs, WebSockets

Databases & Vector Search: pgvector, PostgreSQL, Redis, MySQL, MongoDB, Prisma

AI / Agentic Frameworks & ML: LangChain, LangGraph, PyTorch, PyTorch Geometric, Multi-Agent Architecture, Agentic RAG, Vision-Language Models (VLMs), Scikit-Learn

Developer Tools & Observability: Git, Linux, Semgrep, k6, Supabase, Jupyter, Resend

PROJECTS

Simply – In-Tab Agentic RAG Assistant

LangChain, LangGraph, FastAPI, PostgreSQL, Next.js, React, TypeScript, Manifest V3, Supabase

- Eliminated tab-switching during educational YouTube lectures by building a system to support live-streamed lectures, math-heavy and theoretical videos, with integrated voice interaction and conversation memory for a seamless learning experience
- A browser extension that captures captions, video context, descriptions and comments to provide rich context for an Agentic RAG system.
- Improved answer relevance and reduced hallucinations through a LangGraph agentic pipeline with a supervisor router, CRAG critic with web-search fallback, and self-reflection loop.

Rampling – Backend Production Readiness & Autonomous Code Reviewer

Next.js, FastAPI, Golang, TypeScript, React, PostgreSQL, Redis, Docker, Semgrep, k6

- Pinpoint performance bottlenecks down to the exact line of code by building a scanner that constructs AST dependency graphs of routes, controllers and execution flows and runs context-aware Semgrep rules inside isolated Docker containers
- Automated load testing is done by autonomous agents that generate and run k6 scripts against discovered endpoints in staging, feeding results back into Semgrep rules and producing latency percentiles, throughput scores and prioritized fixes in one report

GenAI Fraud Defense – Autonomous Red/Blue Team Multi-Agent System

Deep Learning, PyTorch Geometric, Heterogeneous GNNs, FastAPI, Next.js, TypeScript, React, Docker

- Strengthened payment fraud detection against GenAI-driven evasion by building a closed-loop system that pairs an LLM Red Team attack architect with a heterogeneous GNN (PyTorch Geometric GINe) Blue Team defender, covering 5 evasion tactics including smurfing, Poisson time-masking and graph noise injection
- Scaled training to 5M transactions and 1.75M account nodes across 15 currencies and 7 payment formats by processing the IBM AML dataset, and stress-tested the model with 100K-transaction synthetic attack datasets
- Made the defense self-improving by mining false negatives into a hard-example pool, fine-tuning for 3 epochs with AdamW and class-weighted cross-entropy, and feeding residual misses back to the Red Team to target new blind spots each cycle

OPEN SOURCE CONTRIBUTIONS

OpenSRE | *Tracer-Cloud*

- Updated Markdown-to-HTML conversion and API handling in the Telegram alert service to fix message cut-offs during high-volume alert streams
- Improved log tracking and alert delivery reliability across incident response tools

nanocoder | *Nano-Collective*

- Added intent summaries and planned file changes to the approval UI, giving users clearer visibility before agents modify code

EDUCATION

AISSMS Institute of Information Technology	2024 – 2028
<i>Bachelor of Technology in Computer Science CGPA: 8 (up to 4th Semester)</i>	
The Bishops School, Camp	2022
<i>Secondary Education 95.4%</i>	

HACKATHONS

Winner at Hack-it-Out Hackathon	Zion 2026
<i>DPU Pimpri</i>	
Final Round – Mastercard Innovation Challenge @ GFF Mumbai	2026

EXTRACURRICULAR

IOIT MUN’25	July 2025 – October 2025
<i>USG Marketing</i>	<i>AISSMS IOIT</i>
• Led the marketing team for IOIT MUN’25, driving outreach and promotional campaigns that brought 60+ delegates from across Maharashtra. • Planned and executed delegate outreach across social media, college communities, and direct communication channels to increase event visibility and registrations. • Coordinated the marketing team and volunteers, assigning outreach responsibilities and managing promotional activities throughout the event campaign.	
DPU MUN’25	2025
<i>Special Mention</i>	<i>DPU</i>
• Represented Japan as a delegate and debated the agenda of the New Cold War, earning a Special Mention at my first MUN conference	