Navnath Kadam

Software Engineer | Backend, Distributed Systems & AI

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PROFESSIONAL SUMMARY

Computer Engineering undergraduate (B.Tech, 2027) with hands-on experience in backend development, distributed systems, and AI-powered applications; strong in data structures, system design, and automated testing.

EXPERIENCE

Automation Engineer Intern *May 2026 – July 2026*

Autonova AI *Remote, Mumbai*

- Automated Reddit lead discovery in Python, validating 3,000+ posts daily and reducing manual screening.
- Refined backend API workflows for a fitness platform to improve request handling and reliability.

PROJECTS

FlowFrame – Distributed Systems Simulator *(Next.js, React Flow, Rust Axum, MongoDB)* *Jan 2026 – Jul 2026*

GitHub | Live Demo

- Built and deployed a full-stack simulator that models request flow across 8 component types (clients, servers, gateways, load balancers, Redis, PostgreSQL, message queues, Pub/Sub) with 6 guided learning scenarios.
- Designed a custom DSL compiler (lexer, parser, semantic analyzer, interpreter; 1,600+ lines of TypeScript) that turns architecture scripts into executable system graphs.
- Engineered a deterministic frame-by-frame simulation engine (2,900+ lines) with execution traces, cache hit/miss behavior, and hop-by-hop latency estimates to expose bottlenecks.
- Developed a Rust Axum REST backend (3,000+ lines, 5 route groups) with JWT authentication, MongoDB persistence for workspaces and diagrams, diagram sharing, and AI chat endpoints.
- Set up GitHub Actions CI that runs 32 Vitest unit tests and a production build on every push and pull request.

StudySync AI – AI-Powered Learning Platform *(React, Node.js, FastAPI, Kafka)* *Full-Stack & AI/ML*

GitHub

- Architected a 4-microservice platform (auth, AI, certificate, notification) with a React frontend and 40+ REST endpoints across Node.js/Express and FastAPI.
- Integrated a local LLM (Ollama, Mistral) for YouTube transcript and PDF summarization, contextual Q&A, and difficulty-based quiz generation.
- Trained a multi-label TensorFlow recommender across 9 course categories using progress, quiz scores, and interaction history (1,000 synthetic learner profiles).
- Implemented real-time notifications with Kafka and Socket.IO (Kafka and ZooKeeper via Docker Compose); secured APIs with Firebase/Google OAuth and JWT; automated PDF certificates with Puppeteer, EJS, and Cloudinary.

NDK RPC Cluster – JSON-RPC Framework *(Node.js, npm v2.0.0)* *Distributed Systems*

GitHub | NPM

- Built a JSON-RPC framework with a global service registry, round-robin load balancing, and retry across replicas.
- Implemented auto-scaling that adds replicas when per-replica requests exceed a configurable threshold (default 2,000) in a 10-second window.

TECHNICAL SKILLS

Languages: Go, Rust, TypeScript, JavaScript, Python, SQL, C++
Backend & APIs: Node.js, Express, FastAPI, Axum, REST APIs, WebSockets, WebRTC, Kafka, JWT, OAuth
Databases & DevOps: MongoDB, PostgreSQL, Redis, Docker, Git, GitHub Actions (CI), Jenkins, Linux
AI & Cloud: TensorFlow, NLP, LLM Integration (Ollama, Gemini API), AWS, Google Cloud
Core CS: Data Structures & Algorithms, OOP, DBMS, Operating Systems, System Design, Unit Testing
Soft Skills: Communication, Collaboration, Problem Solving, Ownership, Adaptability

ACHIEVEMENTS & OPEN SOURCE

- **Hackathon:** Winner, Cognition Clash AI/ML showdown (StudySync AI).
- **Certifications:** Google Cloud – Generative AI, Pub/Sub, and Data Processing.
- **Problem Solving:** 500+ problems solved on LeetCode.
- **Open Source:** Published 4 npm packages: `ndk-rpc-cluster`, `ndk-rpc-engine`, `dev-preview`, `random-ip-gen`.

EDUCATION

Vidyalankar Institute of Technology, Mumbai – B.Tech Computer Engineering CGPA: 9.3/10 | *2023 – 2027*

Ramnivas Ruia College, Matunga – HSC 79% | *2021 – 2023*

Dharmaprakash Shreenivas High School, Sion – SSC 93% | *2020 – 2021*