

Sayantan Mandal

Software Engineer | Backend & Distributed Systems

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Portfolio: portfolio-red-tau-coral.vercel.app | LeetCode: leetcode.com/u/sayonara1337

SUMMARY

Software engineer and final-year Computer Science undergraduate with one year of internship experience building production backend and full-stack systems across enterprise software (Honeywell: .NET, React) and AI infrastructure (OneSol AI Labs: FastAPI, AWS). Comfortable in Go, Rust, Java, C++, and Python; ship REST and microservice APIs, concurrent systems, and upstream correctness fixes to open-source Go and Rust libraries. Strong in data structures and algorithms (825+ LeetCode solved, 130+ Hard), distributed systems, and system design.

TECHNICAL SKILLS

- **Languages:** Go, Rust, Java, C++, Python, TypeScript, JavaScript, SQL, C
- **Backend and APIs:** REST APIs, Microservices, gRPC, WebSocket, .NET (C#), FastAPI, Node.js, Spring Boot, GraphQL
- **Systems and Concurrency:** Multithreading, async I/O, IPC, networking (TCP/UDP/QUIC), profiling and performance tuning
- **Databases:** PostgreSQL, MySQL, MongoDB, Redis, DynamoDB
- **Cloud and DevOps:** AWS (EC2, Lambda, DynamoDB, S3, IAM), Docker, Kubernetes, CI/CD, Linux, Git
- **CS Fundamentals:** Data Structures and Algorithms, System Design, OOP, DBMS, Operating Systems, Computer Networks

EXPERIENCE

Software Developer Intern, Honeywell | Bengaluru, India | Jan 2026 - Present

C#/.NET, React, GCP/Azure/Alibaba, ELK/Kibana, CI/CD

- Re-architected services for cloud portability, moving from Azure to a cloud-agnostic design running across GCP, Alibaba Cloud, and on-prem Windows services to stay available if any single provider fails.
- Built an AI log-analysis agent that pulls logs from ELK and AKS, clones the relevant repo, and localizes the root cause (config, database, or code) - auto-proposing a fix and opening a pull request for code issues.
- Standardized structured logging with Serilog into ELK/Kibana and shipped features behind LaunchDarkly flags for safe rollout and kill-switches.
- Cut GitHub Copilot LLM token usage ~80% across internal AI agents via a knowledge-graph context-retrieval and caching layer; automated a provisioning workflow that cut turnaround time ~40%.

Software Engineer Intern, OneSol AI Labs | Remote | Jul 2025 - Dec 2025

FastAPI, AWS EC2, Docker, Milvus, CI/CD

- Deployed a high-throughput inference platform on AWS EC2 serving concurrent requests at sub-2s p95 latency; tuned async I/O and memory allocation for hardware utilization.
- Implemented async job queuing with shared-memory IPC for ~3x throughput under concurrent load; Dockerized CI/CD (build-test-deploy) eliminated manual release steps.
- Built a Milvus vector-search pipeline with approximate nearest-neighbor indexing, cutting search latency ~65% on a 50K-item corpus over brute-force lookups.

Software Engineer (Intern), Elogix Software | Kolkata, India | May 2025 - Jun 2025

FastAPI, LangChain, GPT-4, React, Docker

- Built backends for three production services (resume evaluator, document QA chatbot, interview-assessment platform) on FastAPI with semantic search and multi-format parsing.
- Shipped React front-ends and containerized deployments via Docker and GitHub Actions CI/CD.

OPEN SOURCE CONTRIBUTIONS

- **bytesize** (Rust) - fixed silent f64 precision loss when parsing large byte counts via an exact integer fast-path, with a regression test (PR #171).
- **go-humanize** (Go) - made ParseBytes parse integers exactly, fixing precision loss above 2^{53} and a wrongful MaxUint64 rejection (PR #151).

PROJECTS

MyVPN - Peer-to-Peer VPN | Rust, QUIC, Wintun, Networking

Live: my-vpn-jade.vercel.app | Code: github.com/sayantanmandal1/MyVPN

- Built a peer-to-peer VPN in Rust with NAT hole-punching over the iroh QUIC transport and end-to-end TLS 1.3 (Ed25519), routing full-tunnel traffic through a Wintun adapter with no central server.

Shopify Insights Platform - Multi-Tenant SaaS Analytics | TypeScript, PostgreSQL, Redis, Bull

Live: shopify-app-inky-six.vercel.app | Code: github.com/sayantanmandal1/ShopifyApp

- Built a multi-tenant analytics backend with per-tenant data isolation, Shopify ingestion through a Redis/Bull job queue, HMAC-verified webhooks, JWT auth, AES-256 credential encryption, and Redis caching with exponential-backoff retries; correctness covered by property-based tests.

ACHIEVEMENTS

- **825+ algorithmic problems solved on LeetCode** (130+ rated Hard) across dynamic programming, graphs, and data structures.
- **Smart India Hackathon 2024 Finalist** - optimized a CNN inference pipeline for ~60% faster execution through profiling and batching.

EDUCATION

B.Tech, Computer Science and Engineering, Vellore Institute of Technology (VIT-AP) | 2022 - 2026 | CGPA 9.03/10