

Aranya Dutta

Systems & Backend Engineer | C · C++ · Python · Go · Linux · Docker · PostgreSQL

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ACHIEVEMENTS & CERTIFICATIONS

- ▶ **Codeforces** Pupil | Max Rating 1234 · Consistent growth from 800 in 6 months [Profile](#)
- ▶ **LeetCode** Contest Rating 1623 · 120+ problems solved [Profile](#)
- ▶ **GeeksforGeeks** 400-day streak · 450+ problems solved across DSA topics [Profile](#)
- ▶ **2nd Runner-up** ICDCIT Hackathon 2024 (100+ teams competing) [Certificate](#)
- ▶ **JLPT N5** (passed December 2025, currently preparing for N3) [Link](#)
- ▶ **Google Cloud:** Foundations of Cloud Computing [Badge](#)
- ▶ **Co-founded AlgoZenith KIIT Chapter** : competitive programming society at KIIT; mentored 100+ students

PROJECTS

Flamingo Chat Backend Go · WebSocket · Goroutines · GCP · CI/CD [Blog](#) | [GitHub](#)

- ▶ Built a concurrent WebSocket chat server in Go using goroutines, channels, and select; deployed on GCP with CI/CD; **500+ concurrent college users at peak load** providing real production-level experience with connection management and graceful degradation under stress
- ▶ Applied Go concurrency primitives (goroutines, select, channels) directly relevant to high-throughput backend; published full architecture documentation as a **public technical blog post**

Network Intrusion Detection System (NIDS) Python · FastAPI · Docker · Microservices · PCAP [GitHub](#)

- ▶ Designed a **microservices pipeline** processing raw PCAP traffic end-to-end: packet capture → TCP/IP flow extraction → ML inference → decision engine across **5 independent containerised services** via Docker Compose
- ▶ Debugged cross-container networking, service discovery, and environment config issues in a live distributed setup; authored full **technical documentation** for the CICFlowMeter service architecture. [Link](#)

SafeShare Backend · Python · FastAPI · Cryptography · Docker [GitHub](#)

- ▶ Built a production-grade **secure file-sharing API** with JWT stateless auth, Bcrypt password hashing, and role-based access control (RBAC) middleware
- ▶ Authored full **SRS, System Architecture, and Testing Plans** - documented to industry SDLC standards before writing a line of code

KernelTalk C · Linux Kernel · IPC · Concurrency [GitHub](#)

- ▶ Built a **Linux kernel module** enabling multi-client communication via a custom character device (/dev/kerneltalk); implemented producer-consumer synchronisation using a **circular buffer** with concurrent read/write
- ▶ Designed blocking and non-blocking I/O for controlled kernel-user space message flow; worked directly with kernel file operations (open, read, write, ioctl), a systems-level depth rare at intern level

EXPERIENCE

Co-founder & Tech Lead AlgoZenith KIIT Chapter

2025 – Present

- ▶ Lead a competitive programming society at KIIT: organise DSA sessions, mentor students from first principles to contest level
- ▶ Organised multiple successful events (personally led first 3); collaborated with and invited prominent online educators in competitive programming

EDUCATION

Kalinga Institute of Industrial Technology (KIIT)

Expected May 2027

B.Tech Computer Science & Engineering · Concentration: Backend & Systems Engineering

Relevant: OS, Computer Networks, Distributed Systems, DSA, DBMS, Cloud Computing, Machine Learning

SKILLS & TECHNOLOGIES

Languages: Go · Python · C · C++ · Java · SQL

Systems & Concurrency: Linux Kernel Modules · IPC · Multithreading · Blocking/Non-blocking I/O · Circular Buffers

Networking: TCP/IP · PCAP Analysis · Network Flow Extraction · REST APIs · WebSockets · Network Protocols

Infrastructure: Docker · Docker Compose · Microservices · CI/CD (GitHub Actions) · PostgreSQL · Google Cloud

Tools: Git · FastAPI · SQLAlchemy · Pytest · Gradle · Maven · Swagger/OpenAPI