Awnikant Ajay

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SUMMARY

I'm a third-year B.Tech CSE student at IIIT Kalyani (class of 2028). Most of my recent work is around zero trust and network security: a FastAPI access-control service that blocks any request without an explicit allow policy (1,600+ req/s, 42 ms p95) and a C++ packet-inspection engine that identifies apps in encrypted traffic from the TLS SNI. I also work at Gaudi.engineer as an AI generalist intern, building retrieval systems, MCP servers and internal web apps. I enjoy DSA (CodeChef 3-star, 1600+ rating; LeetCode rating 1500) and low-level networking.

EDUCATION

B.Tech in Computer Science and Engineering **Aug 2024 – Expected 2028**
Indian Institute of Information Technology, Kalyani (IIITK) **CGPA: 8.14/10**
Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, DBMS

SKILLS SUMMARY

Languages:	C++, Python, Java, TypeScript, SQL
Security & Networking:	Zero Trust, Access Control, RBAC, JWT, API Gateway, Deep Packet Inspection, Network Security, TCP/IP, TLS/SNI, Web Security
Backend & Web:	FastAPI, Node.js, React, REST API, PostgreSQL, SQLAlchemy, Redis, MongoDB, Caching, Prometheus
DevOps & Testing:	Linux, Docker, Docker Compose, CI/CD, GitHub Actions, Git, pytest, Load Testing, Locust, AWS
CS Fundamentals:	Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, DBMS, System Design Fundamentals, Competitive Programming (CodeChef 3-star 1600+, LeetCode 1500)
AI / Agent Systems:	Claude Agent SDK, Model Context Protocol (MCP), Agentic AI, LLM Observability

PROJECTS

Zero-Trust Policy & Access Control Plane github.com/AwkJay/zero-trust-control-panel
Python • FastAPI • PostgreSQL • Redis • Docker

- Built a zero-trust access control service in Python (FastAPI) with JWT authentication, role-based access control (RBAC) based on each user's roles and groups, and default-deny policy checks (blocked unless a policy allows it) at an API gateway
- Designed a REST API with 15 endpoints on PostgreSQL (SQLAlchemy, Alembic); Locust load tests reached 1,600+ requests/sec at 42 ms p95 with zero errors
- Added an audit log of every allow/deny decision (user, group, matched policy, latency), written off the request path, with a query API and Prometheus metrics

DPI Engine — Deep Packet Inspection in C++ github.com/AwkJay/DPI-Engine
C++17 • Multithreading • TCP/IP • TLS • pcap • CMake

- Wrote a C++17 Deep Packet Inspection engine that reads `.pcap` captures, parses Ethernet, IPv4, TCP and UDP headers by hand, and tracks connections by 5-tuple flow
- Identified apps in encrypted HTTPS traffic without decrypting it, by pulling the SNI hostname out of the TLS Client Hello and mapping domains to known apps such as YouTube, Facebook and GitHub
- Added block rules by IP, application, domain and port that drop every packet of a blocked flow; rules load from a file the control plane generates

EXPERIENCE

AI Generalist Intern — Gaudi.engineer **May 2026 – Present**
Information Retrieval • MCP • Claude Agent SDK • MongoDB • Express • React • Node.js • TypeScript

- Built an information retrieval system, MCP servers and the context engineering behind internal LLM tools
- Build and maintain internal web apps and REST APIs on the MERN stack (MongoDB, Express, React, Node.js), with real-time updates over WebSockets
- Worked with the people who use these tools to understand what they needed, then designed and built the UI/UX of internal applications end to end

Independent Web Security Researcher — Bugcrowd **Jul 2024 – Oct 2024**
Web Security • Vulnerability Research • Responsible Disclosure

- Found and responsibly disclosed web security issues (content security policy, missing security headers) to NASA and Cisco, and was inducted into both organizations' **Hall of Fame**

ACHIEVEMENTS

- **Amazon ML Challenge 2026**: Top 50 of 32,000+ teams; secured a Pre-Placement Interview (PPI)
- **Smart India Hackathon (SIH) 2026**: Team lead; Top 6 nationwide on the assigned problem statement
- **InnovateX 2026 (AI/ML Track)**: Winner; built a semantic scene-segmentation pipeline (Attention U-Net) end-to-end
- **Open Source, UN UNOICT/EAPD-DRB (MUIOGO)**: Fixed a production race condition and a backup bug; reviews caught a memory leak (GitHub)
- **Winter of Code 5.0** (GDG on Campus, Nov 2025–Apr 2026): Core team; coordinated 15+ partner orgs and 5,000+ registrations
- **IEEE Student Branch, IIITK (2026)**: Vice-Chair; organized technical workshops and speaker sessions