

Arghadeep Ghosh

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EDUCATION

Indian Institute of Technology, Kharagpur

M.Tech Dual Degree 5Y (CGPA: 8.87 / 10)

Kharagpur, India

Expected 2028

Narayana School New Town

Class XII, CBSE (Score: 91.2%)

Kolkata, India

2023

Calcutta Boys' School

Class X, ICSE (Score: 97.8%)

Kolkata, India

2021

EXPERIENCE

Full Stack Development Intern | Webyalaya

Dec. 2025 – Feb. 2026

- Built an async pipeline on AWS ECS (NestJS, Prisma, Redis, BullMQ), cutting API response from 1.2s to 700ms
- Crafted an EC2 observability stack using Prometheus, Grafana, and Sentry for real-time monitoring and support
- Engineered a fault-tolerant idempotent Razorpay integration with webhook fallbacks and atomic DB operations
- Built Google Calendar sync via Clerk OAuth & throttled Web Speech API transcription cutting network calls 60%

National Finalist | Smart India Hackathon (SIH) 2025

Dec. 2025

- Led a 6-member team developing crop-residue logistics platform; qualified as 1 of 2 campus teams, national top 5
- Built a weather-aware routing engine with K-Means, 2-opt TSP, and Google Maps API for dynamic order insertion
- Built multithreaded IoT telemetry simulator streaming fleet metrics at 1,000+ events/sec via Redis Pub/Sub
- Designed OTP-secured delivery workflow using Redis-backed codes (10-min TTL) with JWT validation

PROJECTS

Collaborative Real-time Workspace 🧩 | Node.js, WebSockets, Yjs, BullMQ, Redis

Feb. 2026

- Built a custom Yjs CRDT WebSocket server for conflict-free multi-user editing and RBAC across 8 co-editing tools
- Buffered database writes with BullMQ write-behind queue (30s flush, deduplication), reducing writes by 90%
- Layered auth with HTTP & WS RBAC, live permission revocation, JWT split-secret refresh, Redis WS tickets

AI Technical Interviewer 🧠 | LangGraph, FAISS, HuggingFace, Groq

May 2026

- Built 8-node LangGraph quad-agent StateGraph with HIL interrupt/resume and priority-based termination
- Designed dynamic RAG pipeline using FAISS and HuggingFace embeddings with web search, cutting calls 80%
- Engineered 3-tier Groq fallback chain with multi-LLM inference, backoff, and token optimization

Mini Redis Server 🧰 | C++17, TCP, Multithreading

Jan. 2026

- Developed a multithreaded TCP server with dedicated client threads, handling 1,000+ concurrent connections
- Sharded the keyspace into 16 mutex-guarded buckets, reducing lock contention under concurrent workloads
- Implemented 31 commands across String, List and Hash datatypes with TTL-based key expiration via lazy eviction

AWARDS & ACHIEVEMENTS

- Competitive Programming:** Expert (Rating: 1725, Handle: magnum) on Codeforces and 4-Star (Rating: 1835, Handle: magnum) on CodeChef
- JEE 2023:** Secured AIR 6,549 (99.44%ile) in Mains (top 0.5% of 1M+ candidates) and AIR 8,515 in Advanced
- WBJEE 2023:** Secured AIR 159 out of ~124,000 candidates
- Scholarships:** Secured AIR 399 in KVPY SA 2022 and awarded the NTSE 2021 scholarship by NCERT

TECHNICAL SKILLS

Languages & Frameworks: C++, C, JavaScript, TypeScript, Python, SQL, Node.js, NestJS, Express, React, FastAPI

AI Tools & Utilities: LangGraph, LangChain, Scikit-learn, Pandas, NumPy, Git, GitHub, Postman, REST APIs

Core CS: Object-Oriented Programming, Database Management Systems, Operating Systems, Basic Networking