Alok Kumar

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Education

Year	Degree / Board	Institute	CGPA / %
2023 – 2027	B.Tech in CST (pursuing)	Institute of Engineering and Management, Kolkata	8.71 (till 5th sem)
2022	CBSE Class XII	New Horizon School, Bhagalpur	70%
2020	ICSE Class X	St. Joseph School, Kahalgaon	86%

Experience

Software Development Engineer (SDE) Intern Aug 2026 – Present
Nevaeh Technology *Kolkata, West Bengal*

- **Engineered** and optimized core C++ modules for the firm's High-Frequency Trading (HFT) infrastructure, focusing on ultra-low latency execution and robust performance.
- **Collaborated** within a product-centric environment to architect system-level improvements for mission-critical trading applications.

Projects

BhasaSetu | *React Native, TypeScript, Kotlin, SQLite* Aug 2026 – Sept 2026

- Developed a 100% offline-capable Android application using React Native and TypeScript to bridge the language gap in tribal elementary education.
- Engineered a zero-internet live broadcast architecture with an embedded HTTP/SSE Kotlin server, supporting 1-to-50 student connections.
- Integrated an on-device Whisper ONNX model for speech recognition and built an AI-powered offline doubt-clearing engine.

CogniCode | *Next.js, FastAPI, Groq LLM, ChromaDB* Mar 2026 – Jun 2026

- **Architected** a scalable codebase intelligence system utilizing FastAPI and Next.js, integrating **ChromaDB** for sub-second semantic search across **10,000+ repository files**.
- **Engineered** a dynamic Codebase Knowledge Graph to map feature-specific dependencies, demonstrating strong architectural planning and reducing API token consumption by **over 60%**.

Rail Sathi | *React Native, Node.js, Socket.IO, C++* Feb 2026 – Jun 2026

- **Designed and implemented** a Smart Split-Seat Algorithm utilizing advanced data structures to dynamically route waitlisted passengers, maximizing ticket utilization **by up to 25%**.
- **Built** a resilient, fault-tolerant tracking pipeline with GPS-speed locks, guaranteeing **over 95% data integrity** during intermittent network connectivity.

Technical Skills

Languages: C++, C
Frameworks & Libraries: React Native, Node.js
Databases & Tools: ChromaDB, VectorDB, Git, GitHub, Socket.IO
AI/ML & Vision: Groq LLM, OpenCV, YOLO, ResNet
Core Concepts: Object-Oriented Programming, Data Structures & Algorithms

Achievements

Qualifier, Google The Big Code (2026): Advanced to the next round of Google's premier competitive programming contest.
Winner (IoT Track), Binary V2 Hackathon (2026): Secured 1st place at Kalyani Government Engineering College.
1st Runner Up, Watch The Code (2026) & Technologia 1.0 (2025): Podium finishes at major national-level hackathons.
Finalist, IIT Madras Shaastra Coding Contest (2025): Qualified for the final round of the prestigious coding competition.

CERTIFICATIONS

- **C++ Programming Professional Certificate (OpenEDG C++ Institute)** – Linkedin, 2024
- **Applied Cryptography Specialization (University of Colorado)** – Coursera, 2025