

# Shounak Ghosh

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## Education

Kalyani Government Engineering College, Nadia – BTech in Computer Science and Engineering

November 2026

## Experience

**Remote Backend Intern**, Aarish Technologies Inc. – QC, Canada

October 2024 – March 2025

- Architected high-performance H.264 video streaming and archival pipeline for military mesh network application, optimizing latency and bandwidth using FastAPI, ffmpeg, and GStreamer
- Designed fault-tolerant two-way communication protocol for mesh networks by developing custom UDP packet encoding for ESP32 nodes in unstable network conditions
- Devised a setup for audio classification by creating a full-stack web application with React and FastAPI, allowing integration with TensorFlow; the solution is currently used by clients from the Indian military

**Freelance Web Developer**, AI-Recovery and High Value Services – WB, India

June 2024 – September 2024

- Designed and developed 7-paged static website for insurance recovery startup; hosted on Cloudflare Pages
- Engineered a robust cloud-based solution with Cloudinary that facilitated rapid serving of over 30 optimized images while maintaining quality standards; reduced load time on the gallery page to under three seconds.

## Projects

**SophistAI – Your Personal Syllabus Navigator**

sophistai.app

- Engineered an AI-driven mind-map and article generator that auto-curates hierarchical study pathways from user-submitted syllabi, leveraging LLMs for content creation and topic expansion
- Crafted an intuitive, responsive and aesthetic UI—particularly the interactive mind map—that is widely praised by users; backed by a robust and functional backend that queries a hosted PostgreSQL database
- Demoed at the Diversion 2k25 hackathon, winning 1st place out of 200+ teams by showcasing real-time syllabus parsing, seamless UX, and live content generation
- Launched as a student-focused SaaS: 10k+ site views in the first week (50% bounce rate), 500+ registered users (predominantly in India, with one in the USA), plus end-to-end payments, SEO optimization, and real-time analytics

**pChat - Decentralized Messaging Platform**

pchat-chi.vercel.app

- Developed a secure peer-to-peer messaging service that facilitated instant communication for over 100 users without data storage or central authority, ensuring robust privacy and user autonomy from external surveillance
- Built real-time group voice chat using Trystero, enabling seamless audio communication among unlimited peers
- Created intuitive UI designs leveraging Svelte-kit and SkeletonUI, ensuring users experienced uninterrupted access to essential features in the peer-to-peer messaging application

**NF-Tree - Carbon Credit Generation Platform**

nftree-one.netlify.app

- Full-stack web3 platform that converts verified tree-planting photos into Real World Assets generating daily carbon credits
- Led backend integration in a team of 4 for smart contracts using Thirdweb SDK, implementing automated carbon credit minting and verification
- Demonstrated exceptional coding ability and teamwork by placing as first runner-up out of 200+ competitors during the Statuscode1 hackathon

## Achievements

- Secured **1st place** (1/200+ teams) at the Diversion 2k25 Hackathon by leading development and live demonstration of SophistAI's AI-driven syllabus mapping and content generation platform
- Awarded **1st runner-up** out of 150+ teams at the Statuscode1 Hackathon for architecting NF-Tree
- Named **Finalist** in the Smart India Hackathon 2023, collaborating in a 6-member team to design and deploy a progressive web app for citizen water-issue reporting, recognized by the Ministry of Jal Shakti, Government of India
- Secured a **top 1% national ranking** in Mathematics in the AISCCE and AISSE, showcasing capability to deconstruct and solve complex problems

## Skills

**Languages:** TypeScript, Python, Golang

**Frontend:** React, React Native, Expo, Next.js, Svelte, Svelte-kit, TailwindCSS

**Backend:** Node.js, Bun, Hono.js, Express, DrizzleORM

**Infrastructure:** PostgreSQL, SQLite, Cloudflare Workers, Docker