Swagata Ganguly

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Summary

Full-stack developer and Web3 enthusiast who builds AI-powered web platforms and decentralized applications with **Solidity**, **Next.js**, and **Firebase**. Leads Web3 learning at RCCIIT through workshops on smart contracts and DeFi. Seeking Web3 product roles.

Education

RCC Institute of Technology, Kolkata **2024 – 2028**
B.Tech in Electronics and Communications Engineering ***(CGPA: 7.5)*** *Beliaghata, Kolkata*

Indira Gandhi Memorial High School | *CBSE* **2022 – 2024**

WWA Cossipore English School | *ICSE* **2010 – 2022**

Technical Skills

Languages: JavaScript, TypeScript, Python, Java, C, Solidity, HTML/CSS
Frameworks & APIs: React.js, Next.js, Node.js, Express.js, FastAPI, Tailwind CSS, REST, JWT, Socket.io
Web3: Ethereum, Smart Contracts, Hardhat, Remix, Ethers.js, Web3.js
AI & Real-Time: Gemini API, RAG, Yjs (CRDT), WebRTC
Databases & Tools: MongoDB, PostgreSQL, MySQL, Prisma, Firebase, Git, GitHub, Postman, Vercel, Figma
CS Fundamentals: Data Structures & Algorithms, OOP, DBMS

Projects

DistraAI (Paradox'26 Winner) | *Next.js, TypeScript, Tailwind CSS, Leaflet, GeoJSON, Firebase* **Oct 2026**
- Built a geospatial platform to explore flood and landslide risk through interactive maps, alerts, and community reporting.
- Visualized risk zones with **Leaflet** and **GeoJSON**; used **Firebase Auth** and **Firestore** for users, reports, and real-time chat.
- Documented a multi-agent architecture spanning GIS, geotechnical analysis, and LLM-assisted intelligence.

Smart Helmet (ZYRO 2026 Finalist) | *ESP32-S3, ESP-IDF, FreeRTOS, STM32, I2C, UART, ADC* **2026**
- Developed **ESP32-S3** firmware using **ESP-IDF/FreeRTOS**, integrating LSM6DSO, BMP581, and MMC56x3 sensors via mutex-protected **I2C** drivers for real-time monitoring.
- Implemented multi-sensor crash detection with impact thresholds, altitude and magnetic anomaly detection, post-impact stillness checks, and a **GPIO** cancellation handshake triggering **UART/Wi-Fi SOS alerts**.
- Integrated **ADC-based battery monitoring** for a 2S Li-ion pack; collaborated on ESP32 audio bridging and STM32 DMA/I2S processing, and developed the **Flutter companion app**.

NexusAid | *Next.js, Firebase, Gemini AI, Razorpay* **Apr 2026**
- Built an AI-powered disaster relief platform for real-time crisis reporting, resource coordination, and global event monitoring.
- Integrated **Gemini AI** with **RAG** for location-aware emergency guidance and **Razorpay** for transparent donations.

Flux Whiteboard (SYNQ) | *Next.js 15, Yjs, Firebase, React Konva, WebRTC* **Jan 2026**
- Built a real-time collaborative whiteboard and rich-text notebook with live cursors and touch-optimized controls using **React Konva**.
- Implemented **CRDT-based sync** with **Yjs** and **WebRTC**; local strokes render instantly while remote updates sync at **60 FPS**.

Experience

IgniteX Club RCCIIT **Oct 2024 – Present**
Tech Lead *RCC Institute of Technology, Kolkata*
- Mentored peers on **Hardhat** and **Remix** (ERC-20, ERC-721) and ran sessions on contract security.
- Organized demo days showcasing members' blockchain mini-projects.

GDSC RCCIIT **Aug 2024 – Present**
Web3 and Blockchain Associate *RCC Institute of Technology, Kolkata*
- Led **Solidity**, smart contract, and Ethereum workshops for **100+** members, guiding first dApps on testnets.
- Co-designed Web3 hackathon tracks and problem statements on DeFi and on-chain tooling.

RCCTechz Club RCCIIT **Nov 2024 – Present**
PR and Outreach Associate *RCC Institute of Technology, Kolkata*
- Managed social media and outreach; coordinated speakers, sponsors, and partner colleges for inter-college events.

Achievements

- **Open Source Contributor, GSSoC '26**: Selected from **45,000+ applicants**.
- **Best AI/ML Application**: Paradox 2026, IEM Salt Lake.
- **2nd Runner-Up**: Tekathon 2026.
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- **Top 5**: AMD Slingshot Ideathon.
- **Finalist**: ZYRO 2026, a 24-hour robotics and hardware hackathon.