

ARNAB MUKHERJEE

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in [0xarnab](#)

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TECHNICAL SKILLS

Languages : C, Python, C++, HTML5, CSS, java, JavaScript

Developer Tools : VsCode, GitHub Desktop, MongoDB

Technologies/Frameworks : GitHub, React.js, Express.js, Tailwind CSS, FastApi

Soft Skills : Active Listening, Teamwork, Communication, Time management, Adaptability

PROJECTS

DegreeNFT 🔗 | [React](#), [MongoDB](#), [TailwindCss](#), [Solana](#), [Metaplex](#)

June 2025

- Developed a decentralized academic credentialing platform on the **Solana blockchain**, utilizing the **Metaplex Token Metadata standard** to ensure certificate immutability and verifiability.
- Automated the full on-chain issuance pipeline, including **IPFS metadata** handling, **Umi NFT creation**, and metadata account linkage.
- Engineered a scalable **React and TailwindCSS** interface integrated with a **Node.js** backend, enabling **real-time wallet interaction** and seamless **NFT minting workflows**.
- Delivered a robust system for transparent and **tamper-proof** academic verification, enhancing institutional credibility and recipient ownership.
- [Live site here](#)

PassVault 🔗 | [React](#), [MongoDB](#), [RedisDB](#), [AES-GCM](#), [TailwindCss](#), [FastAPI](#)

February 2025

- Designed and implemented a **zero-knowledge password management system** leveraging **AES-GCM** encryption and **PBKDF2**-based key derivation to uphold client-side data privacy.
- Built a secure, responsive UI with **React and TailwindCSS**, connected to a **FastAPI, MongoDB** backend and **RedisDB** to support **session-bound encryption workflows**.
- Enforced **advanced cryptographic practices** ensuring no sensitive credentials or **master keys were ever transmitted or stored server-side**.
- Delivered a fully isolated, self-contained security solution that **empowers users with complete control** over credential access and confidentiality
- [Live site here](#)

Whisperwave 🔗 | [Next.js](#), [Zod](#), [bcrypt](#), [Mongoose](#), [Typescript](#)

July 2024

- Built an end-to-end encrypted messaging app using **Next.js, TypeScript, and MongoDB** with real-time communication support.
- Integrated secure authentication flows via **next-auth**, with **password hashing (bcrypt)** and schema validation (**Zod**) to harden user access control.
- Architected a modular backend using **Mongoose and MongoDB** to support encrypted message persistence with **optimized data retrieval patterns**.
- Ensured complete message confidentiality through **client-side encryption** and privacy-first architecture.
- [Live site here](#)

EXTRACURRICULAR & ACHIEVEMENT

- Served as **GDSC Lead 2025** at BCET, where I organized the **GenAI Study Jam** 🔗 and **Google Solutions Challenge 2025** 🔗, driving hands-on learning in AI and community-led development.
- Web Team Member of **GDG Durgapur** 🔗
- Member of **IETE Kolkata** 🔗
- Governor at **CodeVision Club, BCET** 🔗

EDUCATION

Bengal College Of Engineering and Technology

Bachelor Of Technology - CGPA:7.5/10

June 2022 – present

Durgapur, India