

ARPAN BARIK

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Education

Bennett University, Greater Noida

B.Tech in Computer Science Engineering (Specialization in Blockchain)

Expected 2028

CGPA: 8.51/10

Objective

Blockchain-focused Computer Science undergraduate who builds full-stack Web3 systems — smart contracts, zero-knowledge proofs, and AI-integrated applications. Proven track record across national hackathons and academic and personal capstone projects, with a problem-first mindset and strong fundamentals in cryptocurrencies, decentralized systems, and Web3. Fluent in modern AI-assisted development workflows to design, build, and ship production-grade software fast. Seeking opportunities to contribute to impactful projects while enhancing technical skills.

Skills

Languages: Solidity, Python, C++, TypeScript, JavaScript, Java, Go

Blockchain & Web3: Bitcoin core, Ethereum (ERC-20/ERC-721/ERC-1155), NFTs, Foundry, Hardhat, ethers.js, web3.js, OpenZeppelin, Zero-Knowledge Proofs, IPFS, Hyperledger Fabric

Backend & Databases: FastAPI, Node.js, REST APIs, PostgreSQL

Frontend: HTML, React, TypeScript, Tailwind CSS

Tools: Git, GitHub, Docker

Projects

Bitcoin Mempool Package Optimizer — *Python, Bitcoin Core* — [Github](#)  *Sep 2026 – Present*

- Building a Bitcoin block-selection research framework to evaluate 3 transaction-selection strategies— baseline, ancestor-package, and improved optimization—using controlled Regtest mempool snapshots.
- Implemented DAG-based dependency modeling using NetworkX to resolve ancestor/descendant relationships and CPFP package fees against simulated mempool snapshots.
- Evaluated the three transaction-selection strategies in controlled simulations, with the improved heuristic achieving 18.4% higher selected transaction fees than the baseline on a specified test scenario.
- Integrated an interactive React + Vite dashboard and FastAPI backend for real-time visualization of DAG topologies and revenue curves.

Sentinel — *FastAPI, PostgreSQL, React, Python* — [Github](#)  *Sep 2026 – Present*

- Co-designing a self-hostable, local-first platform that helps investigators in analysing complex insider-threat scenarios involving multiple heterogeneous evidence sources. — authentication and file-access logs, USB and network events, badge data, CCTV video, and scanned documents — into a unified incident timeline and evidence graph.
- Owning the **Backend + Security** track: Architecting an audit and integrity layer inspired by chain-of-custody principles — SHA-256 hashing of evidence at ingest, tamper detection by re-hashing, and audit records for all processing operations.
- Part of a research-oriented 4-member team exploring whether multimodal evidence correlation improves insider-threat detection over single-source analysis, using public datasets (CERT, LANL, VAST 2009).

Dermalyze — *TensorFlow, Solidity, Ethereum (Sepolia), IPFS* — [Github](#)  *Apr 2026*

- Co-built a full-stack AI-powered skin-disease detection platform that pairs deep-learning diagnostics with blockchain-verified medical reports.
- Designed and deployed Solidity smart contracts on Ethereum Sepolia for immutable, tamper-proof verification of medical reports.
- Engineered an IPFS-based decentralized storage integration for secure, persistent report data.

Experience

BU Smart India Hackathon 2026

- Part of Team Krydo: a privacy-preserving financial identity on Ethereum.

Google × CodingNinjas: Vibe2Ship Hackathon 2026

- Built measuringTape: a decentralized, community-powered civic issue reporting and verification platform.

Achievements

BU Smart India Hackathon 2026

- Achieved **4th place among 650+ teams** as part of Team Krydo.