Himanshu

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EDUCATION

Indian Institute of Technology Guwahati, India | Oct 2022 - May 2026
Bachelor of Technology in Mathematics and Computing | GPA: 7.9/10.0

EXPERIENCE

Adobe | May 2025 - Jul 2025
Software Engineering Intern, Acrobat Performance | Noida, India

*Conceived a novel scheduling solution, now under **consideration for patent filing** at Adobe.*

- Created an **adaptive background task scheduler** for Acrobat Reader, optimizing idle-time without affecting responsiveness.
- Developed a modular scheduling framework using idle prediction, burstiness detection, activity scoring, and **design patterns**.
- Validated through a **C++ Win32 Photo Viewer prototype**, simulating idle-time clustering and realistic workloads, and demonstrating a **60% reduction in hang time** and **50% higher background task throughput** under production-like conditions.

iit.fun | May 2025 - Oct 2025
Core Contributor | Remote

- Collaborated with **15+** IITs, engaging **1000+** students as active contributor to iit.fun, a **Web3 platform driving adoption**.
- Expanded iit.fun as a platform for **open-source work** via Pharos Network and Citrea, actively working on **10+** projects.

PROJECTS

Chaintune: Blockchain-based Music App | Nov 2023
Inter IIT Tech Meet 12.0 | GitHub

- Built a **decentralized on-chain protocol** with artist staking, establishing ChainTune as a **NFT Marketplace** for **crowdfunding and music investing**, and a streaming platform on **Aptos**, enhanced by gamified engagement and **ALS recommendations**.
- Engineered a **MERN** stack and **Next.js** app in **TypeScript**, using **IPFS (Pinata SDK)** and **MongoDB** for secure data storage.
- Integrated **DAO governance** and direct artist-fan interaction, enabling users to **earn revenue** & take part in platform decisions.

ToFu Swap: Arbitrage Bot | Feb 2024
Finance and Economics Club, IIT Guwahati | GitHub

- Developed an **automated arbitrage trading bot** using the **Bellman-Ford algorithm** to identify profitable cycles, integrated the **1inch API** for **real-time token prices** and seamless token swaps, and incorporated **Blocknative API** for gas fee estimations.
- Integrated an interactive **Crypto ETF** with Ethereum-based tokens, featuring **community-driven voting-based governance**.
- Used **Aave V3** for **flash loans**, built a **Next.js** frontend for ETF investments and a **marketplace** for token–stablecoin exchanges.

**ThreeTube: Video Streaming dApp** | Oct 2024
Finance and Economics Club, IIT Guwahati | GitHub

- Built a **decentralized streaming protocol** with **MetaMask authentication** for secure uploads, playback, and live broadcasts.
- Constructed a scalable media pipeline using **IPFS/Pinata** for storage, **FFMPEG for transcoding**, and **Livepeer** for streaming, with **Node.js/Express APIs**, **Redis caching**, and **worker queues** enabling high-concurrency uploads and resilient delivery.
- Designed and implemented a robust indexing and query layer with **The Graph, GraphQL, MongoDB, and a Next.js/React.js frontend**, enabling fast media discovery, dynamic content feeds, and interactive audience features with Tailwind-powered UI.

Other Projects

- **xv6 – Unix-based Operating System** ⧉**:** Engineered threads, mutexes, spinlocks, and **hybrid SJF-Round Robin CPU scheduling** for efficient **lazy memory allocation** and **LRU paging** of active processes, supporting multitasking and I/O handling.
- **Advanced Computer Networks** ⧉**:** Developed concurrent **TCP/UDP Base64 encoder**, chat server, and network calculator; simulated **dynamic OSPF routing**, **CSMA/CA MAC**, Stop-and-Wait flow control, and **load-balanced queuing systems**.

TECHNICAL SKILLS

Programming languages: C/C++, JavaScript, Rust, Python
Systems & Networking: Linux, xv6, TCP/IP, Raft/Paxos
Web3 Technologies: Solidity, Hardhat, IPFS
Web Technologies: HTML, CSS, React.js, Next.js, Node.js
Database Management: MySQL, MongoDB
DevOps and Tools: GitHub, Docker, CI/CD, AWS, Shell

ACHIEVEMENTS

Inter IIT Tech Meet 12.0, Secured the 2nd-highest overall judging score in the Aptos blockchain problem statement. | 2024
Decenbuild: Social dApp Building Hackathon, Secured **3rd position** among more than **50 teams** nationwide. | 2024
Kriti, Bagged 3rd-highest overall judging score in Digital Identity PS in Kriti (Inter-hostel Tech meet). | 2024
Inter IIT Technical Bootcamp, Secured **Institute Rank 2** in the Quant PS, implementing the Pair Trading Strategy. | 2023
JEE Advanced, Secured **AIR 2435** among 0.20 million candidates appearing in the examination. | 2022
JEE Main, Secured **99.01 percentile** among 1.20 million candidates appearing in the examination. | 2022
Regional Mathematics Olympiad, Selected among the top 30 students in the state in RMO conducted by HBCSE. | 2022

RELEVANT COURSEWORK

Computer Science: Data Structures and Algorithms, Digital Design, Introduction to Computing Laboratory, Database Management System, Operating System, Computer Organization Architecture, Computer Networks

Mathematics & Finance: Probability and Random Processes, Discrete Mathematics, Linear Algebra, Calculus, Statistical Inference and Multivariate Analysis, Financial Engineering, Stochastic Calculus, Optimization, Monte Carlo Simulation

POSITIONS OF RESPONSIBILITY

DeFi and Blockchain Head, Finance and Economics Club, IIT Guwahati | Apr 2024 - Apr 2025

- Mentored **100+** students, worked on **6+** projects & launched **10+** **major initiatives** to accelerate blockchain culture at IITG.
- Partnered with **10+** leading firms, including **Aptos, The Graph**, driving impactful initiatives with **1000+** active participants.