



EDUCATION

| Year | Degree/Exam | Institute | CGPA/Marks |
|------|-----------------------|-----------------------------|------------|
| 2027 | M.TECH Dual Degree 5Y | IIT Kharagpur | 8.15 / 10 |
| 2021 | AISSCE | DAV Bistupur | 93.4% |
| 2019 | ICSE | Motilal Nehru Public School | 96.8% |

COMPETITION/CONFERENCE

- Inter-IIT Tech Meet 13.0 | Contingent GoldNov 2024 - Dec 2024
 - Won **Gold** at **Inter-IIT Tech Meet 13.0** with BharatForge team and built a **full-stack** webapp to control ROS robots.
 - Developed a scalable **Flask** backend and **Next.js** frontend with noVNC and an **AI Agent** for real-time system control.
- Opensoft General Championship 2025 | IIT KharagpurMar 2025 - Apr 2025
 - Led a **development team** to build a scalable **full-stack** web application with **FastAPI** and **Next.js** with live features.
 - Built a modular chatbot using **gRPC** and **Celery** for async processing, with focus on responsiveness and reliability.
- TapBonds AI Agent Competition | IIT KharagpurMar 2025 - Mar 2025
 - Built a responsive **AI chatbot** using Next.js, and implemented intelligent AI Agents using LangChain and LangGraph.
 - Designed an **orchestrator system** to route queries across **four agents** for bond discovery, returns, and forecasting.

PROJECTS

- AI-Powered Mental Health Monitoring PlatformMar 2025 - Apr 2025
 - Built an efficient mental health monitoring platform with **AI chatbot** for daily employee engagement and HR alerts
 - Designed a **microservices** architecture with **gRPC**, **Celery**, **Redis**, and **MongoDB** for chat, scheduling, and updates.
 - Developed backend services with **FastAPI** and a **TypeScript**-based **Next.js** frontend using Socket.io and JWT auth.
 - Containerized** all backend and frontend services with **Docker Compose** for smooth orchestration and deployment.
- Automated React.js Deployment PlatformFeb 2025 - Mar 2025
 - Developed an **ECS Fargate** pipeline to clone GitHub React.js repositories, build bundles, and upload to **AWS S3**.
 - Implemented a **reverse proxy** routing subdomains to the latest **React deployment** stored in versioned S3 buckets.
 - Built a real-time log streaming system using **Kafka**, ClickHouse, and **Socket.io** to monitor deployments efficiently.
 - Enabled one-click deployments via **Express** server, provisioning build containers and triggering deployment flows.
- DuoBrain: Content Management Platform with Semantic SearchOct 2024 - Oct 2024
 - Developed a scalable content management platform to store videos, links, and notes with efficient **semantic search**.
 - Built the frontend using **Next.js**, the backend using **Express** with **TypeScript**, and **MongoDB** as the main database.
 - Implemented **vector embeddings** for fast and efficient database indexing and enabled content sharing among users.
 - Dockerized** the entire project using **Docker Compose** and deployed it on **AWS EC2** using **Nginx** as a reverse proxy.
- Movix Prime: Adaptive Streaming and SearchMar 2024 - Apr 2024
 - Built a scalable media streaming platform using **MERN stack** with semantic search and videos stored in **AWS S3**.
 - Implemented adaptive bitrate streaming using **m3u8** files, including dynamic quality selection in the video player.
 - Secured user authentication and authorization using **JWT**, enabling protected access to paid and restricted content.
 - Integrated the **Razorpay** payment gateway for secure and seamless full movie access beyond free movie trailers.

AWARDS AND ACHIEVEMENTS

- Achieved the designation of **Specialist** with a maximum rating of **1462** on CodeForces (ID:harshxgupta931).
- Secured a Global rank of **327** in CodeForces Div2 (**24k+ participants**) (ID:harshxgupta931).
- Secured Global rank of **3385** in LeetCode Biweekly Contest 157 (**25k+ participants**) (ID:Harsh_Gupta_2916).
- Secured an All India rank of **12216**, positioning in the top 1.2% among 1 million participants in JEE Mains 2022.
- Secured an All India rank of **10310**, placing in the top 6.8% among 0.15 million participants in JEE Advanced 2022.

COURSEWORK INFORMATION

- Computer Science:** Programming and Data Structures (Theory and Lab)
- Mathematics:** Linear Algebra, Numerical and Complex Analysis | Transform Calculus | Advanced Calculus
- Core:** Applied Thermodynamics | Machines Tools and Machining | Non-Traditional Manufacturing Processes
- MOOCs:** Algorithms and Data Structures (**AlgoZenith**)

SKILLS AND EXPERTISE

- Programming languages:** C++ | JavaScript | TypeScript | Python
- Frameworks and Libraries:** Next.js | Node.js | Express.js | Socket.io | Prisma | Mongoose | FastAPI | Flask
- Software and Tools:** Git | GitHub | Postman | MongoDB Compass | Linux (Bash, CLI)
- Devops and Cloud:** Docker | Docker Compose | Nginx | Redis | Kafka | AWS (EC2, S3, SQS, ECR, ECS)