

Education

2021-2025	B.Tech. in <i>Industrial &amp; Systems Engineering</i> - Indian Institute of Technology, Kharagpur
CGPA	8.46

Experience

- **Software Engineering Intern | AWSMO**

Apr '24 - Present

- Streamlined ML workflow, achieving **55% faster execution** & **50% greater scalability** with **AWS Batch** & **CloudFormation**
  - Enhanced **deployment efficiency by 100%** through **CI/CD** pipelines and **unit tests covering  $\approx 80\%$**  of the code base
  - Identified **17 bottlenecks** across all services via a **benchmarking framework** written in **Golang**, **Python**, and **Terraform**
  - Optimized **time series data parsing by 40%** by implementing efficient business logic in the **Django REST Framework**
  - Reduced **service downtime by 30%** via *post-deployment health checks* & *rollback mechanisms* in *deployment pipelines*

Projects

- **Naarad | Golang, Python**

Jun '24 - Jul '24

- Deployed a **student-run noticeboard service** for IIT Kharagpur community, serving **over 7000 daily active users**
  - Managed deployment on **Digital Ocean** with **Docker**, leveraging **GitHub Actions** for **CI/CD**, scaling for over **15,000** users
  - Reduced **unauthorized access attempts by 30%**; **OTP** and **nginx** rules restrict only sign-up/sign-in to the **campus network**
  - Integrated with **MFTP**, delivering students **real-time placement portal notices**, with a delivery delay of **under 3 minutes**
- **ApnaInsti | Django, AWS**

Jan '24 - Feb '24

- Published an **official mobile app** for **IIT KGP**, increasing **student involvement by 30%** in institute-organized activities
  - Orchestrated deployment on **AWS EC2**, utilizing **CodeDeploy** & **CodePipeline**, scaled for **10,000+** users with **AWS ECS**
  - Designed **travel share** and **buy/sell portal**; spearheaded a team of **10 developers**, developing in **Django** and **React Native**
  - Engineered a **real-time scoreboard** feature, serving **5000+ concurrent users**, using **Golang**, **PostgreSQL** & **WebSockets**
- **Metahub | C, Bash, Linux Utilities**

Jan '23 - May '23

- Revamped a **PtokaX**-based **P2P file-sharing service** exclusive to IIT Kharagpur, catering **50TB+ of content** to **800+ users**
  - Resolved compilation errors & a ban functionality bug, **increasing server stability by 30%** & ensuring a smooth installation
  - Engineered **automation & monitoring** scripts, & set up **fallback** for uninterrupted server availability, ensuring **95% up-time**
- **GSYNC | Bash, Linux Utilities**

Apr '22 - May '22

- Developed a **CLI tool** for **real-time file & folder synchronization** from *local* to *remote git repositories*, with **100% efficiency**
  - Implemented **8 service functionalities** - *start*, *stop*, *status*, *restart*, *enable*, & *disable*, with **innovative selective start/stop**
  - Elevated user **experience by 40%** with intuitive **logs management** and troubleshooting, with support for **macOS** and **Linux**

Achievements

- **Inter-IIT Tech Meet 12.0 | Contingent Gold**

Nov '23 - Dec '23

- Secured *first place for the third consecutive time*, contributing to **cloud architecture**, **blockchain**, and **backend** tech stack
  - Patched **2 Aptos library** bugs & designed a **novel Metamask Snap** allowing *transacting Aptos coin* via **Metamask Wallet**

Positions of Responsibility

- **Maintainer | Metakgp, IIT Kharagpur**

Aug '23 - Present

- Developed and maintained **over 20 open-source projects** for IIT Kharagpur students, easing out various stressful processes
  - Published **IQPS**, a **Golang**, **PostgreSQL**, and **Svelte** app, hosting **500+ question papers** over **19 years** with **vector search**
  - Deployed **Kronos**, a web app in **Python** that collects and analyzes **12,500+ records**, providing detailed **grade distributions**
- **Advisor, FOSS United Club Lead | Kharagpur Open Source Society, IIT Kharagpur**

May '22 - Present

- Organised **over 15 workshops**, promoting and advocating the adoption of **open-source software** amongst the students
  - Organised **Kharagpur Winter of Code**-('22 and '23), inspired by *Google Summer of Code*, with **1.2k+** and **2.5k+** participants
- **Technology Coordinator | Technology Students' Gymkhana, IIT Kharagpur**

Jul '23 - Jul '24

- Oversaw **technological advancements** at IIT Kharagpur; assisted in resolving **over 200** student complaints every month
  - Achieved a **90% reduction in site build size** by *migrating static data* to **PostgreSQL** using efficient **Python** & **Bash** scripts
  - Migrated from **AWS** to **on-premise server**; leveraged **Proxmox** for **3-layered system design** and *novel CI/CD pipelines*

Technical Skills

Languages	Python, Golang, Bash, TypeScript, JavaScript
Frameworks	Django, Flask, Go-Fiber, Node.js, Metamask Snaps
DBMS	PostgreSQL, MongoDB, MySQL
DevOps	Networking, Linux Administration, Docker, Nginx, Apache Web Server, Cloudflare, Terraform, Amazon Web Services (AWS), Digital Ocean (DO), Jenkins, Argo CD, YAML, GitHub Actions