

Academics

2021-present CGPA	B.Tech. in <i>Industrial & Systems Engineering</i> - Indian Institute of Technology, Kharagpur 8.89
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Awards

- **InterIIT Tech Meet 12.0 | Contingent Gold**
 - Secured overall **first place consecutively for the third time** in the InterIIT Tech Meet 12.0 as a team held by IIT Madras
 - Participated in **3 events** as a developer in the team, working on **backend, cloud systems architecture** and **blockchain**
 - Developed novel applications using **Metamask Snaps**; **patched bugs** in **aptos library** to send requests from browser
 - Implemented **CI/CD** automation for custom-built backends supporting two major events, enabling continuous delivery

Projects

- **ApnaInsti | Golang, AWS, Docker, Nginx**
 - Developed **official mobile app** for **IIT Kharagpur** centralizing academic data, events & integrating exclusive features
 - Managed deployment on **AWS EC2** with **RDS & Docker**, utilizing **CodeDeploy & CodePipeline**, scaling for **2000+** users
 - Built features: **travel share & buy/sell portal**; led a team developing **Django REST backend & React Native frontend**
 - Constructed the **feature roadmap** and oversaw the **system design** and **UI design**, driving the overall technical process
 - Implemented **real-time ScoreBoard** feature for GC using **Go** and **WebSockets**, deployed as microservices in **Docker**
- **Metahub | C, Networking, Bash, systemd**
 - Revamped a **PtokaX** based **Direct Connect** (DC) Hub exclusive to IIT Kharagpur, simplifying the configuration process
 - Meticulously identified and **resolved compilation errors**, ensuring a successful build and seamless installation process
 - **Rectified a bug** affecting the ban functionality, resulting into incorrect redirection which improved the server stability
 - Developed a script to **automate the setup, start, and stop processes** of the server, enhancing ease of management
 - Implemented a script to **monitor the status of the server**, ensuring continuous operation and proactive monitoring
 - Successfully established a reliable system startup service using **systemd**, guaranteeing uninterrupted server availability
 - **Handled static IP configuration** when the host device changes locations, improving network stability & accessibility
- **MFTP | Python, Docker, Gmail API, ERP Login Module, Systemd, Cronjob**
 - Developed a service emailing students in **real-time placement portal notices**, ensuring no missed critical deadlines
 - Designed to run as a robust **systemd service** or **scheduled cronjob**, monitoring placement portal every **2 minutes**
 - Integrated with **SMTP** servers & **Gmail API** for timely delivery of notification emails **within 1 minute** of post to students
 - Utilised **ERP Login Python Package** to implement login functionality for ERP - where the placement portal resides
 - Implemented a **health-check** utility to periodically check the logs & notify in case of errors, both deployed via **Docker**
- **ERP Login Module | Python, Gmail API**
 - Developed and published the **iitkgp-erp-login**, **Python package on PyPi**, catalyzing a remarkable surge in user adoption
 - Successfully achieved an outstanding **90%** reduction in login workflow lines, significantly enhancing code conciseness
 - Implemented **OTP support**, using the Gmail-enabled Google API to fetch the latest OTP mail, ensuring seamless login
- **FERP | HTML, CSS, JavaScript, Web Browser Extension**
 - Published a browser extension **automating feedback form filling** for IIT Kharagpur students, used by **500+** students
 - Ensured seamless compatibility with **Chromium and Firefox based browsers**, expanding reach to a bigger user base
 - Implemented total **3 feedback modes** - positive, negative and neutral - which ensured diverse feedback representation
 - Enhanced efficiency by **automating the transition** to the next course/professor upon form submission, saving time
- **GSYNC | Bash, Linux Utilities**
 - Developed for automating **real-time synchronization of files and folders** from a local system to GitHub as a **service**
 - Implemented **service functionalities** - start, stop, status, restart, enable, & disable, with innovative selective-start/stop
 - Elevated user experience and ease of use through efficient troubleshooting and intuitive **colored logs management**
- **Code Runner | Bash, Vim**
 - Developed for Linux & Unix users, streamlining **compilation and execution of code** in various programming languages
 - Provided convenient installation by making the tool readily available on **Homebrew** and **AUR** (Arch User Repository)
 - Implemented Python version detection with an accuracy rate of **90%**, guaranteeing smooth programming experience
 - Integrated **Vim and VS Code keybindings**, optimizing the development flow for seamless programming experience
 - Integrated a **debugging mode**, enabling streamlined troubleshooting for enhanced software developer experience

Positions of Responsibility

- **Maintainer | Metakgp, IIT Kharagpur**
 - Maintained various critical **open source projects** for student community of IIT Kharagpur easing out their daily needs
 - These projects include **gyft** - timetable downloader, **kronos** - semester grade distribution, **metawiki** - IIT Kharagpur wikipedia
 - Maintained all the servers related to above and other projects on **DigitalOcean** and DNS server using **Terraform** on GitLab

- **Technology Coordinator | Technology Students' Gymkhana, IIT Kharagpur**
 - Oversaw **technological advancements** & led a **tech team of 6 developers** at IIT Kharagpur; maintaining multiple projects
 - Assisted in resolving **over 200** student complaints every month, related to internet connectivity throughout the campus
 - Configured & Managed an on-premise server running **Proxmox** as a Type 1 Hypervisor, hosting various projects for TSG
 - Maintained multiple projects : **ApnaInsti** app, Inventory Management System, **TSG website**, Gymkhana Blogs using **Ghost**
 - Developed a **dashboard** for TSG website & ApnaInsti mobile app for dynamic data update and mass certificate generation
 - Acted as **Executive Head of Developers' Society** working with **72+** members promoting development culture on campus
- **Executive Head, FOSS Club Lead | Kharagpur Open Source Society, IIT Kharagpur**
 - Organised **multiple student workshops**, promoting the adoption of open source and raising awareness among students
 - Organised KWoC-(22 and 23) (**Kharagpur Winter Of Code**) a month long event with **1.2k+ & 2.5k+** participants respectively
 - Developed **automated** workflows for **internal processes**, including **certificate generator** for KWoC and various PORs

Technical Skills

Languages	Bash, Golang, Python, Typescript, JavaScript, C/C++, R, Java, LaTeX, HTML, CSS, Lua
Frameworks	Go-Fiber, Node.js, Express.js, Hyperledger Fabric, Flask
DBMS	PostgreSQL, MongoDB, MySQL
DevOps	Computer Networking, Docker, Nginx, Linux System Administration (Proxmox), Amazon Web Services (AWS), Redis
OS Platforms	Linux 5/6 (Debian, Ubuntu, Fedora, NixOS), Unix (FreeBSD, OpenBSD, Solaris-8,9,10 & MacOS X)
Blockchain	Metamask Snaps, Hyperledger Fabric, Solidity
Others	Git and GitHub, Backend Development, Web Browser Extension Development, Penetration Testing (Cyber Security), Object Oriented Programming, Gurobi and CPLEX Optimisation