Arpit Bhardwaj

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Academics

2021-present	B.Tech. in *Industrial & Systems Engineering* - **Indian Institute of Technology, Kharagpur**
CGPA	**8.89**

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, 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
  - Architected adaptable **modular core design** allowing user configuration of preferred email delivery and credentials
- **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 Uitilities**
  - 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