Depanshu Sahu

✉ depanshus21@iitk.ac.in   ☎ +91-7389176274
  depanshu357   in depanshu-sahu

Academic Qualifications

2025   B.Tech Computer Science and Engineering
Indian Institute of Technology Kanpur   CPI: 8.3/10

Scholastic Achievements

- Got **All India Rank 774** among 10,00,000+ applicants in **Joint Entrance Exam Mains** conducted by **NTA**   *2021*
- Secured **All India Rank 913** among the 1,51,000+ eligible candidates in **JEE Advanced** conducted by **IIT KGP**   *2021*
- Won **Best Poster Paper** at the Student Research Symposium in the 30th **IEEE International Conference** on **High Performance Computing, Data, and Analytics (HiPC) 2023**

Work Experience

- **Tech Intern - Adobe** *Offered PPO*   *May'24 - Jul'24*
  - Built a machine learning-based system to simplify Milo document authoring and speed up website production.
  - Web Scraped data from 500+ Adobe Milo pages; used **TF-IDF** and **RandomForestClassifier** to map content to blocks.
  - Developed a web app using **React** and **Flask** to upload and preview converted documents, boosting deployment efficiency.
- **Pheonix Developer** *Stealth AI Startup*   *Dec'24 - Jan'25*
  - Participated in designing **efficient data models** for electric grid components focusing on database optimization.
  - Developed **backend and frontend** simultaneously using **Phoenix Elixir**, enabling seamless integration in a PWA.
  - Used **maplibre-gl** for interactive map visualization, improving UI to make linemen's field operations **intuitive and efficient**.
- **Data Visualization in HPC** *Prof. Preeti Malakar — SURGE '23*   *May'23 - Jul'23*
  - Designed a **data visualization tool** to analyze network interference in the **Param Sanganak Supercomputer** at IITK.
  - Built a **JavaScript-based scheduling algorithm** and visual interface to display switches, nodes, and interconnections.
  - Enabled **graph-based job flow analysis**, improving visibility into complex data pipelines and aiding efficient job scheduling.

Key Projects

- **SIP Portal** *E-Cell, IITK* frontend: backend: *Dec'23 – Present (Maintained as Open Source)*
  - Developed a portal for students to apply for internships, using **PostgreSQL** (DB), **Golang** (backend), and **Next.js**.
  - Implemented authentication with **Auth.js**, email verification, and hosted on **Red Hat Linux** with **Nginx** reverse proxy.
  - Designed UI with **Shadcn** and **Tailwind CSS**, used **TypeScript** for type safety, and enabled file upload/download.
- **TrackIT** *Prof. Indranil Saha, Course CS253 Software Development and Operations*   *Jan'23 - Mar'23*
  - Worked in a team of 10 members and created a **web app** that helped the user to keep track of expenses and borrowings.
  - Prepared the **code base** and created backend logic for data integration between user and shopkeeper using **MERN**.
  - Helped in formalizing the various steps of the software process by preparing documents and deciding the timeline.
- **Compiler for Python** *Course Project, CS335*   *Feb'24 - Mar'24*
  - Parsed the Python code using **Flex** and integrated it with **Bison** for grammar implementation with syntax analysis.
  - Produced **AST**, **3AC code**, and **symbol table** of the code using **Syntax Directed Definitions** ensuring robust code.
  - Able to generate **x86 assembly code** with support for **recursion**, **constructors**, and **type checking** using semantic analysis.
- **CSE Bubble** *Course Project, CS220*   *Feb'23 - Mar'23*
  - Created a new processor having 32 registers with an architecture similar to **MIPS-32** Instruction Set Architecture.
  - Designed the **finite state machine** for control signals to execute each instruction in a **single clock cycle**.
  - Implemented the **Arithmetic Logic** Unit using a **top-down** approach to develop modules for each instruction.
- **Scribble Board** *Hackathon Project*   *Apr'23 - Apr'23*
  - Developed a scribble board web app using **Fabric.js** with an interactive interface enabling users to draw and erase.
  - Used **ResNet-34** for image processing and shape classification, and information received for shape autocompletion.
  - Added **advanced features** like support for shapes, different types of brushes, inks, colors, and shape resizing.

Technical Skills

- **Programming Languages:** C, C++, HTML, LaTeX, Python, JavaScript, Verilog , MIPS, SQL
- **Software and Libraries:** Git, React, d3.js, DataTable, fabric.js, chart.js, Photoshop, Illustrator, Scikit-learn, Selenium

Positions of Responsibility

- **Head, Web, Entrepreneurship Cell**   *May'23 - Apr'24*
  - Responsible for maintaining and upgrading ECell **websites** and **portals** visited by over **10 thousand** people
  - Organised **E-SUMMIT'23** where various unicorns, startups and students participated having a footfall of over **2000** people.
  - Managed a **3-tier** team with **10+** web secretaries and made them familiar with the required tech stack used in ECell
  - Developed YEC, SIP Portal E-SUMMIT'23, Upstart Expo websites and SIP Portal with **scalability** and robustness
- **Senior Executive, Web, Techkriti**   *Oct'22 - Feb'23*
  - Managed and updated the main Techkriti website during the event which was visited by over **2,00,000+** people
  - Collaborated to make **IITK MUN** and **ExpoStart** websites for conducting competitions in the Techkriti event

- Worked in a 3-tier team, recruited a team of **10+** volunteers, and directed them for managing the tech fest

Relevant Courses

Data Structures and Algorithms	Compiler Design	Operating Systems
Software Development and Operations	DBMS	Internet of Things
Computer Organization	Probability in Computer Science	Discrete Mathematics
Linear Algebra	Real Analysis	Logic in Computer Science