



EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2024	M.TECH Dual Degree 5Y	IIT Kharagpur	9.13 / 10
2019	CBSE, Class 12	Sarvodaya Niketan	91.0%
2017	CBSE, Class 10	Agrasen DAV Public School	10 / 10

INTERNSHIPS

D. E. Shaw India Private Limited | Software Engineering Intern **May'23-Jun'23**

- Developed a self service web portal for the D. E. Shaw admins to manage the Tax field configs of a Tax Statement.
- Analyzed the new requirements and found incompatibilities in existing database schema and POJOs in the service.
- Designed a new schema and wrote migration scripts in SQL Server to ensure backwards compatibility.
- Wrote new POJOs supporting bitemporal queries and used the layered architecture of controller, service and DAO.
- Developed multiple algorithms for tokenization, validation, evaluation, and storage of tax field formulas.
- Developed a live mockup preview feature using React-Redux to help admins see the changes before confirming it.
- Reduced developer dependency and minimised the turnaround time from 3 days to almost instant.

PROJECTS

Food Delivery Software Management System | Software Engineering Term Project **Feb'21-Apr'21**

- Developed a web application to provide a platform for food delivery to the people, a platform for restaurants to offer their services online, and a place for delivery agents to work.
- Created complete documentation for the application, including Class Diagram, Use-Case Diagram, SRS & Test Plan.
- Used HTML, Bootstrap for frontend, Flask for backend and Firebase for user authentication and database.

Systems Programming | Operating Systems Course Project **Jan'22-Apr'22**

- Developed a shell that runs as an application program on top of Linux kernel. Implemented running of external commands, i/o redirection, pipe mode, history search & filename autocomplete using POSIX system calls.
- Simulated parallel matrix multiplication as a producer consumer problem using mutex locks & shared memory.
- Simulated a multithreaded mutually exclusive deadlock free implementation of dependency tree.

Sockets/Network Programming | Computer Networks Course Project **Jan'22-Apr'22**

- Implemented a simplified file transfer protocol for transferring any file between a concurrent TCP server and a client as chunks of bytes. Implemented login using password, directory traversal & batch download/upload.
- Developed a version of Linux command traceroute using raw sockets and modifying the IP/UDP headers.
- Developed a library for supporting reliable communication over UDP using acknowledgement and threads.

Road Condition Categorisation and Mapping | Guide: Prof. Soumya Kanti Ghosh **Jan'23-Present**

- Developed a crowdsourcing based road anomalies detection, categorisation and mapping app for android and web.
- Designed a CNN using PyTorch to help users in image categorisation.
- Used Flask and MySQL to build the service and hosted it using dockerized container.
- Built a web portal for the admins to check reports and a mobile app for the end users to make geo-tagged reports.

AWARDS AND ACHIEVEMENTS

- Qualified till the regionals of ICPC 2021 (Kanpur site). (* team - ConvexSkulls)
- Ranked **Top 0.44%** with max rating **2397** on Leetcode*, a coding platform.
- Rated **Expert** with max rating **1856** on Codeforces* and max rating of **1680** on Atcoder* and **2131** on Codechef*.
- Secured **Global Rank 134,212,263 and 298** in **Google Kickstart*** Round H(2021), D(2022), C(2022) and G(2021).
- Qualified till **Round 2** of **Google Codejam*** 2021,2022 and **Meta Hacker Cup*** 2021. (* handle - aryan57)

SKILLS AND EXPERTISE

Languages:	C, C++, Java, JavaScript, Python, SQL, HTML, CSS
Libraries/Frameworks:	C++ STL, Spring Boot, ReactJS, Flask, NodeJS, Firebase, React Redux, PyTorch
Tools/Softwares:	Git, Bash, LaTeX, Postman, Android Studio, VS Code

COURSEWORK INFORMATION

Algorithms*	Operating Systems*	Software Engineering*	Computer Networks*
Programming and Data Structures*		Object Oriented Systems	Probability and Statistics
Compilers*	Computer Organisation and Architecture*	(* includes laboratory component)	

POSITIONS OF RESPONSIBILITY

Associate Member | Grimoire of Code, IIT Kharagpur **Jan'20-Present**

- **Organized competitions** on Hackerrank for hundreds of students to prepare for various competitions.