ARYAN AGARWAL | 19CS30005

COMPUTER SCIENCE & ENGG. (M.Tech Dual 5Y)

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2024	M.TECH Dual Degree 5Y	IIT Kharagpur	9.23 / 10
2019	CBSE, Class 12	Sarvodaya Niketan	91.0%
2017	CBSE, Class 10	Agrasen DAV Public School	10 / 10

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. Added login using password, directory traversal, batch download/upload features.
- 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**.

Railway Reservation System | *Project under Prof. Partha Pratim Das*   **Mar'21-Apr'21**
- Developed a **console based application** for reservation of railway tickets between defined stations.
- Used **objected oriented programming** in C++ for the application.
- Added features to compute fair for the booking based on the Booking Hierarchy defined by the Railways.
- Created documentation, UML, diagrams and test planning for the application.

Photo Sharing App | *Self Project*   **Jun'21-Jul'21**
- Developed and hosted live a web application to provide users a platform for uploading and sharing pictures.
- Used **ReactJS**, Bootstrap for frontend and **firebase** for **NoSQL** database, website hosting and file storage.
- Used Firebase authentication and added **Sign In with Google** and Email Sign In features.

COMPETITION/CONFERENCE

- Secured **Global Rank 1** in **Codechef*** May Challenge 2021 Division 1 and Division 2.
- Secured **Global Rank 30** out of 20k+ contestants in **Leetcode*** Biweekly Contest 80.
- Secured **Global Rank 134, 263 and 298** in **Google Kickstart*** Round H(2021), C(2022) and G(2021) respectively.
- Qualified till **Round 2** of **Google Codejam*** 2021,2022 and **Meta Hacker Cup*** 2021.
- Secured **Global Rank 1** in **Codechef*** Starters 9.   *(handle - aryan57)

AWARDS AND ACHIEVEMENTS

- **5 star** with max rating **2131** on Codechef, a coding platform (handle - aryan57)
- **Top 0.46%** with max rating **2359** on Leetcode, a coding platform (handle - aryan57)
- **Expert** with max rating **1856** on Codeforces and max rating **1680** on Atcoder (handle - aryan57)

SKILLS AND EXPERTISE

Languages: Proficient: C, C++ | Familiar: JavaScript, Java, Python, MySQL, HTML, CSS
Libraries/Frameworks/Tools: C++ STL, Firebase, ReactJS, NodeJS, Git, Flask, Postman, VS Code

COURSEWORK INFORMATION

Algorithms*	Operating Systems*	Programming and Data Structures*
Software Engineering*	Computer Networks*	Probability and Statistics
Compilers*		(* marked courses have a Laboratory Component as well)

POSITIONS OF RESPONSIBILITY

Associate Member | *Grimoire of Code, IIT Kharagpur*   **Jan'20-Present**
- **Organized competitions** on Hackerrank for students to prepare for various competitions.

Student Mentor | *Student Welfare Group, IIT Kharagpur*   **Nov'21-Present**
- Mentoring four students from Computer Science & Engineering department in academic and non-academic fields.

!self declaration by the student