

# Nakul Jain

Senior Year Undergraduate

✉ nakuljn@iitk.ac.in | 🌐 nakuljn | ☎ +91 808 561 3396 | 📧 nakuljain20

## Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2018 - Present	B.Tech in Computer Science and Engineering	Indian Institute of Technology, Kanpur	7.3/10
2018	CBSE(XII)	Ram Krishna Vidya Mandir, Gwalior	95.2%
2016	CBSE(X)	Gwalior Glory High School, Gwalior	10/10

## Scholastic Achievements

- Received the **Academic Excellence Award** for exceptional academic performance in 2018-19 at IIT Kanpur
- Secured an All India Rank **175** in **JEE Advanced** 2018 and **98** in **JEE Mains** 2018
- Achieved All India Rank of **457** and selected for **Kishore Vaigyanik Protsahan Yojana (KVPY)** fellowship in 2017-18
- Received an **Excellence award** for scoring **100%** in Chemistry in CBSE 12th Board

## Work Experience

**Qualcomm** | Software Development Internship | Team: NR 5G (May'21-Jul'21)

- Objective:** Automate the **MAC profiling parser** program and improve the readability of **F3 Error Messages**
- Implemented the **auto downloading feature** of multiple log packets at the same time in **Python** and stored them in **MongoDB**
- Successfully collaborated with other teammates to parse the logs using **Omega Parser** and made a dynamic plot using **Bokeh**
- Created an **user-friendly interface** for structured view of error messages generated by running **clang on the LTE logs**
- Brainstormed with the team to reduce the errors in **Python** code from **50% to 33%** by manually changing **C** source code

**Demux Academy** | Full Stack Developer Internship | Supervisor: Eng. Varun Garg (Apr'20-Jun'20)

- Objective:** Set up **AWS EC2** web server and configure different services through Virtual Hosting and Mysql as DB Host setup
- Created a short Application using a tech stack including **CSS, JS, React, Node.js** and used it as a primary project
- Tech involved include AWS EC2 Ubuntu image, Elastic IP load balancer, Virtual Hosting through ApacheV2, Confd Configuration, Version Control, DNS Config and full stack for our microservice and hosted the service on a live domain

## Key Projects

**C to x86 Compiler** | Supervisor: Prof Amey Karkare (Jan'21-Apr'21)

- Implemented a mini C compiler having source code **C**, Implementation language **C++**, and Target language **x86** Assembly
- Performed **Lexical, syntax & symantic analysis** and produced abstract syntax tree in dot script and generated assembly code
- Used 3 Address Code as intermediate language to act as a bridge between high-level source & low-level assembly language

**Analysing Databases** | Supervisor: Prof Arnab Bhattacharya (Mar'21-April'21)

- Analysed relational databases and non-relational databases of different sizes by running them over **4 different queries**
- Compared effects of varying sizes, relations, indexing, database management systems by plotting a line graph
- Databases involved **Sqlite3, MariaDB (SQL)** and **MongoDB(NoSQL)** and implemented it in **Python**

**GemOS** | Supervisor: Prof Debadatta Mishra (Aug'20-Nov'20)

- Implemented system calls like **open, read, write, close** and functionalities like **Paging, File System and Message Queues**
- Executed memory management operations with provisions for **mmap, munmap and huge page creation**
- Developed a debugger in OS with functionalities like setting/removing breakpoints, wait/continue, disabling/enabling breakpoints

**Authentication Portal** | Self Project (Apr'20)

- Created a portal to authenticate a user via **REST-endpoint API-Google OAuth** with email and password
- Developed a user-friendly web application with Node.js, Express, Passport, and MongoDB for demo purposes

**Tic Tac Toe against Computer** | Self Project (Dec'19)

- Developed a software for Tic Tac Toe game by implementing an intelligent bot which is based on **Minimax Algorithm**
- Created a user-friendly interface using HTML5, CSS, Javascript to play it online

## Technical Skills

**Languages:** C, C++, Python, Bash, Node.JS, React, Express, Javascript, CSS, HTML5

**Tools:** Git, Vim, L<sup>A</sup>T<sub>E</sub>X, Docker, AWS, MongoDB, MySQL, Msc-Generator

## Relevant Courses

\*Ongoing

Introduction to Computing	Compiler Design	Database Management	Operating Systems
Theory of Computation	Software Development	Advanced Algorithm	Data Structure and Algorithms
Machine Learning*	Probability	Linear Algebra and ODE's	Discrete Mathematics

## Positions of Responsibility

**Mentor - Mentor-Mentee Programme** | ANC Council (Jan'21-Present)

- Conducted regular sessions for guiding **9** students on interview preparation and counselled them during the period

**Manager - Technocruise** | Techkriti (Jul'19-Apr'20)

- Built and coordinated team of **20** volunteers for smooth conduction of workshops
- Successfully collaborated with various MNCs including Adobe, Cisco for organising workshops in 28 cities with **4000+** participants