

## EDUCATIONAL QUALIFICATIONS

Year	Degree	Institution	CGPA/%
July'19 – July'24 (Expected)	Dual-BS-MS, CHM	IIT Kanpur	PG-8.20/10.0, UG-7.20/10.0
2018	CBSE – XII	LMPS, Ajmer, Raj.	71.80%
2016	JKBOSE – X	BPHS, Jammu, J&K	82.80%

## WORK EXPERIENCE

## IIT Kanpur

Under Prof. Pratik Sen

SURGE INTERN

May 2023 - July 2023

- Worked on Elucidation of the Structure and Dynamics of Synergistic Mixed Solvent Systems.
- Conducted in-depth investigations using **<sup>1</sup>H NMR** and **absorption spectroscopy** to characterize solvent interactions.
- Deployed **Vacuum Distillation** technique to purify Organic Solvents.
- Applied **emission spectroscopy** to further understand the behavior of mixed solvent systems.
- Utilized software tools like **IGOR Pro** and **Origin** for data analysis and visualization.
- Performed Hydrophobicity trend graph analysis in **python**.

## PROJECTS

## SARS-CoV-2 Fusion

Under Dr. Nagma Praveen

UG Project

Jan 2022 - May 2022

- Investigated the intricate process of **SARS-CoV-2 fusion** utilizing an opportunistic model to understand the fusion mechanism of the coronavirus membrane.
- Explored receptor binding and priming of the spike protein for membrane fusion.
- Gained in-depth understanding of viral behavior, specifically in the context of binding and fusion processes in **SARS-MERS Covid**.

## Binary Solvent Mixtures

Under Prof. Pratik Sen

UG Project

Jan 2023 - May 2023

- Worked on the Role of Hydrophobicity in Synergistic Solvation of N,N-Dimethylformamide, Formamide.
- Analysed the Characteristics to identify the behaviour of solvents using **NMR Technique**.
- Investigated the Synergistic trend using the **Absorption & Emission Spectroscopy**.
- Used **Vacuum Distillation** technique to purify the Organic Solvents.

## Numerical Methods in Fortran Programming 🌐://Fortran

Course Assignments, Prof. Mainak Sadhukhan Jan 2023 - May 2023

- Implemented Lorenz system solved by **Euler forward** and **Runge Kutta-4** methods and comparing using 3D animated plot and also X-Z graph with appropriate given points and we see variation in 3d graph.
- Implemented **Gauss Legendre Polynomial, Monte Carlo, Trapezoidal, and Simpson's Rule** to identify the integration.
- Used **Ising Model** tried Stabilizing the Energy and Temperature Dependencies where Specific heat in constant volume or also Magnetic momentum Magnetisation determination.
- Solved the Schrodinger Wave Matrix.

## RELEVANT COURSES

Fundamental of Computing	LA & ODE
Computer Programming For Chemistry	Thermodynamics

## POSITIONS OF RESPONSIBILITY

## Volunteer in Ritambhara, Antaragni IITK, March - 2019

- Assist the Senior Secretary in organizing an event while Antaragni, Pearl Academy Delhi, and other team members visit the campus.
- Volunteered for the Hospitality wing of Antaragni-IIT Kanpur's annual cultural fest.

## Secretary in Ritambhara, Antaragni IITK, July'20 - Oct'20

- Prepared a database of various fashion giants and We contacted them and convince them to sponsor our event.
- Contacted various colleges and their fashion societies and increased the participation in the event.

## Senior Secretary, Chess Club IITK, April'20 - April'21

- Organized chess tournaments for the campus community.
- Conducted various events on Lichess

## Senior Executive, Techkriti RoboGames IITK, 2020 - 2021

- Prepared a database of various colleges and contact them as well as convince them to Participate in the RoboGames —RoboCaAD— Manoeuvre using abstract calling.

## Council Secretary Exhibition, IITK, March - 2020 - 2021

- Responsibility for Exhibition Planning and Execution.

## SELF PROJECT

## Angular-Powered Personal Website

- Crafted a dynamic website utilizing Angular as the web framework.
- Employed Electron JS and comprehensive web development techniques. 🌐 Project

## A Server-Client Solution Developed Using Android Studio

- Harnessed the capabilities of Android Studio, to develop a versatile application comprising a 🌐 Server & 🌐 Client application.
- This innovative system empowers seamless data storage using the Google Firebase Framework.

## Student Academic Desktop Tool

- Designed and developed a robust desktop application using ElectronJs aimed at facilitating efficient academic data management for students.
- Incorporated a blend of HTML, CSS, and JavaScript to seamlessly integrate both the frontend and backend aspects of the application.

## SKILLS

**Languages** : Fortran Programming, C/C++, MySQL, HTML/CSS, L<sup>A</sup>T<sub>E</sub>X, Python, Markdown

**Frameworks**: Electron, React, Node.js, Angular

**Developer Tools**: Git, VS Code, Sublime Text Editor

**Android Development**: Android Studio, Flutter, Kotlin

**Operating System/ Terminal**: Knowledge of Unix/Linux or Windows environments, CMD, Power Shell

**Other**: Fusion360, PowerPoint, Adobe Photoshop, MS-Word, Adobe Illustrator, Auto CAD, Overleaf, GNU Plot, Avogadro.

**Participation**: Advances in Spectroscopy, Catalysis, and Synthesis Online Event from the Indian Institute of Technology Kanpur during the summers of 2021.