PRINCY CHAUHAN

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Academic Qualifications

Year	Degree	Institute	CPI/%
2021 - Present	Bachelor of Technology	Indian Institute of Technology Kanpur	7.54/10.0
2020	Class XII (CBSE)	A.V.M.D Institute	92.2%
2018	Class X (CBSE)	S.M.K. English Medium School	94.6%

Scholastic Achievements

- Secured **AIR 5450** out of approximately **0.14 million** candidates in **Joint Entrance Examination(JEE)-Advanced 2021**
- Secured **AIR 8386** out of approximately **1 million** candidates in **Joint Entrance Examination(JEE)-Mains 2021**
- Selected for **SURGE'23** IITK program, given to **220** students across India for summer research at the end of second year.

Work Experience

- **Enhancing UAV Networks through Swarm Intelligence** | Research intern at **SURGE IITK** *May'23 - July'23*
  Mentor: Prof. Ketan Rajawat

Objective	• The objective of this research project was to set up and implement a **SWARM UAV systems**, with the primary goal of exploring the concept of swarm intelligence and advancing the capabilities of UAV networks.
Tasks	• Project starts by familiarising with the robotic operating system and theoretical features of **SWARM** systems. • Achieving **synchronization** of clocks among UAVs in the network is a critical objective. The aim is to devise a robust system capable of precisely synchronizing the drones' clocks for optimal coordination and operation. • Implemented **ROS multimaster** integration for seamless communication & coordination among multiple drones. • Developed Python code to calculate drone bandwidth and compared it with Wireshark results for evaluation.

- **Optical Odyssey** | *Astronomy Club, IIT Kanpur* *May'23 - July'23*

Objective	• To explore the evolution of telescopes, the rationale for space-based placement, and construct a light collector mimicking the JWST's primary mirror to study multiple-mirror optics and functioning of sunshield in space.
Tasks	• Subsequently, delve into an elaborate examination of the architecture, constituents, and sections of the James Webb Space Telescope(**JWST**), along with the components of the Integrated Science Instrument Module (**ISIM**). • Build a light collector resembling the **JWST**'s primary mirror to study multiple-mirror optics in space. Illuminate the collector using a heat lamp and measure reflected light intensity from behind a protective sunshield.

Key Projects

- **Blast OFF!** | *Astronomy Club, SnT IIT Kanpur* *May'22 - July'22*
  - A thorough investigation and study of the fundamental theories and concepts of orbital mechanics and rocket propulsion.
  - Used **MOGA** modelling approaches for optimisation, enhancing processes, systems, or designs for maximum effectiveness.
  - Using this information, 3 rocket were designed, meticulously assembled, and successfully launched from the **IITK Airstrip**
- **Image Processing** | *Association of Mechanical Engineering, IIT Kanpur* *Jan'23 - April'23*
  - Examined cutting-edge spatial domain filtering methods for noise reduction and image quality improvement, such as mean, median, and Gaussian filtering. These filters have been used to reduce various noise sources and enhance image clarity.
  - Applied **Fourier Transform and Butterworth** filtering for noise reduction, image restoration, and quality enhancement.
  - Evaluated and optimized image segmentation techniques with adaptive algorithms for accurate and versatile results.

Technical Skills

- **Programming Languages:** C , C++ , HTML , CSS , SQL
- **Software & Utilities:** AutoCAD, Git, Fusion 360, Canva , MS Excel , LaTeX, MATLAB

Positions of Responsibility

Coordinator, Astronomy Club, Science & Technology Council, IIT Kanpur atroclubiitk *April'23 - Present*

Mentoring	• Led a group of freshmen on frequent basis in carrying out astronomical observations using telescopes, coordinated with **2** other mentors in mentoring summer project **Optical Odyssey** for **10+ selected mentees**.
Leadership	• Leading the Club with **two** other Coordinator and managing **25** members with aim to manage the club effectively. • Conducted documentary screening and group discussion which witnessed the participation of **100+** freshmen.
Impact	• Handling all the social media pages of the club and planning year long activities within a budget of **1.15 lac**

Relevant Courses

Fundamentals of Computing	Introduction to Electronics	Linear Algebra, ODE
Complex Variables	Mechanics of Solids	Partial Differential Equations
Fluid Mechanics	Dynamics	Introduction to Electrical Engineering

Extra-Curricular Activities

- Organised Jupiter Observatory Session conducted by Astronomy Club at **Airstrip** which was attended by **3500+** people.
- I served as a **Senior Executive** in **TOSC** and **Show Management**, demonstrating strong leadership skills.
- Organized Observe-Analyse-Solve Event under **Mandakini'22** with participation of **200+** members.