

ACADEMIC QUALIFICATIONS

Year	Degree/Certificate	Institute	CPI/%
2021 - Present	BS	Indian Institute of Technology, Kanpur	7.74/10
2021	CBSE(XII)	The Shishukunj International School, Indore	97.2%
2019	CBSE(X)	The Shishukunj International School, Indore	94.4%

ACHIEVEMENTS

- Bagged **Bronze Medal in Inter-IIT Tech Meet 11.0** in 'Drona Aviation's Pluto Drone Swarm Challenge'
- Represented the Institute in the **Inter IIT Cult Meet 5.0** in the **51 Hours Film making Challenge**
- Participated in water polo and represented the institute in the **36th Inter IIT Sports in Aquatics**
- Secured **All India Rank 868** in **JEE Advanced 2021** and **All India Rank 2937** in **JEE Mains 2021**
- **All India Rank 912** - Recipient of the **Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship** in 2020
- Among the **top 30** students in the state to qualify **Regional Mathematics Olympiad (HBCSE)** in 2018 and 2021
- Qualified the **Indian Olympiad Qualifier in Astronomy**, conducted by **IAPT and HBCSE** in 2019 and 2020.
- Qualified the **Indian Olympiad Qualifier in Chemistry**, conducted by **IAPT and HBCSE** in 2020.

COMPETITIONS

Drona Aviation's Pluto Drone Swarm Challenge - Inter IIT Tech Meet 11.0

(January'23-February'23)

Objective	Design and implement a communication wrapper to facilitate drone control for Pluto 2.0 , integrating a webcam-based position detection system to develop an efficient and accurate position control system for the drone
Approach	<ul style="list-style-type: none">• Designed a wrapper that can communicate over WiFi through MSP packets, by an ESP module on-board• Utilized a single O-cam camera to design and implement a robust 3D positioning system• Developed algorithms to enable real-time 3D tracking of Aruco marker on a drone, allowing for precise tracking• The position control system effectively regulated the roll, yaw, pitch, and throttle (RYPT) of the drone• Employed the communication wrapper and position control system to guide a drone along a designated path
Result	Won the Bronze Medal in the High preparation competition amongst the 22 participating IITs

KEY PROJECTS

DataScience with R

(May' 23- July' 23)

Mentee | Stamatics Society, IITK

(Github)

- Implemented web scraping, data cleaning, dataset processing, proficient in dataset manipulation, visualization, and plotting
- Utilized **RMarkdown** to create reproducible documents and websites, and developed interactive **R Shiny applications**
- Utilized widely used libraries such as **tidyverse**, **rvest**, **dplyr**, **MASS**, **txhousing**, **iris**, and **ggplot2**
- Experienced in data profiling, and analysis, and proficient in integrating C++ functions into R workflows using **Rcpp** packages

Application of Machine Learning | Course Project

(January' 23- April' 23)

Prof. Purushottam Kar | CS771A - Introduction to Machine Learning

(Github)

- Developed a **linear machine learning model** to crack and analyse the **cryptographic algorithm XORRO**.
- Implemented a **decision tree learning algorithm** for playing the word-guessing game, on a given dictionary of words.
- Conducted a comprehensive analysis of linear machine learning models, evaluating their performance based on **MAE values**.
- Worked in a team of **5 members** with efficient distribution of work and documentation of the work.

Project Mentor, Introduction to Geometric Deep Learning | Stamatics Society, IITK

(May'23-July'23)

- Explored foundations of Geometric Deep Learning, inspired by Michael Bronstein and Petar Veličković.
- Developed a comprehensive understanding of implementing **Neural Networks for graphs and networks**.
- Designed **Convolutional Graph Neural Network** for **Music Track Recommendation** in Spotify playlists.

TECHNICAL SKILLS AND RELEVANT COURSES

(*: Ongoing)

Programming Languages	C, C++, HTML, L ^A T _E X, Python, R
Libraries	OpenCV, Numpy, Scikit-Learn, PyTorch, NetworkX.
Mathematics Courses	Probability and Statistics Introduction to Linear Algebra Abstract Algebra Set Theory and Logic Time Series and Analysis* Real Analysis Complex Analysis* DCF Modeling
Computer Science Courses	Fundamental of Computing (A) Introduction to Machine Learning (A)
Softwares	Fusion360 Arduino AutoCAD ROS Gazebo Adobe Aftereffects Adobe Premiere Pro

POSITIONS OF RESPONSIBILITY

Senior Team Member | Aerial Robotics (SNT Team)

(May'23-Present)

- Efficiently conducted written tests and shortlisting interviews to facilitate the recruitment process for new team members.
- Effectively supervised the training process of new recruits, ensuring their seamless integration into the team.
- Mentored mini projects and led workshops to inspire interest in autonomous drones

Coordinator | Photography Club (Media and Cultural Council)

(May'23-Present)

- Built and led a **3-tier** team of **30+ individuals** to conduct events and workshops for a community of **9000+**.
- Responsible for handling club's resources worth **INR 6 lakhs** to foster the photography culture in IIT Kanpur.
- Organized a **10 day long workshop** for campus community, with **renowned** artist **Mr. Prashant Godbole**.

Editor Media | Vox Populi (Journalism body, IIT Kanpur)

(May'23-Present)

- Revitalized Vox's video vertical, implementing a streamlined workflow to expedite the production of video articles.
- Interviewed Director, Professors, workers and Council heads for 10+ articles, reports and investigations.
- **Doubled** video production bandwidth, expanded team size by **two fold** to support increased output.