




Academic Qualification			
Year	Qualification	Institute	Performance
2021 - Present	BS - Mathematics & Scientific Computing	Indian Institute of Technology Kanpur	6.03/10
2021	CBSE(XII)	Jawahar Navodaya Vidyalaya, Bundi	90.2%
2019	CBSE(X)	Jawahar Navodaya Vidyalaya, Pune	92.8%

- Scholastic Achievements
- Problem-solving skills with the maximum **Leetcode** rating of **2175**, ranked as a knight in the top **3%** of all users worldwid
 - Recipient of the **Ram Nagrani Scholarship 2022**, awarded by the **Navprakashan Foundation** to **IIT Kanpur** students
 - Awardee of the **MPSFER Scholarship 2022**, awarded by **Mahabir Prasad Sing Foundation** for Education and Research

Work Experience	
Visual GPS Localization <i>ML Intern - Invictron</i> Jun'25 - Jul'25	
Objective	- Built an offline image-based geolocalization pipeline to estimate a drone's location from onboard images
Approach	- Built a grid-based satellite gallery , extracted features from grid & stored with lat/lon in structured metadata - Integrated a ConvNeXt-based encoder with TorchScript tracing for optional feature normalization (L2) - Used prior pose to find the nearest grid cell, then limited matching to a 5x5 neighborhood to accelerate retrieval
Outcome	- Achieved average latency of 10s per query on Raspberry Pi-class hardware and 0.5s per query on GPU systems

Personalized Feedback System <i>Data Science Intern - My Analytics School</i> Jun'24 - Jul'24	
Objective	- Engineered an AI feedback system to enhance student learning with personalized, auto-generated videos
Approach	- Developed a RAG engine using LangChain and OpenAI to generate highly accurate, context-aware scripts - Worked with a 5-member team to research and validate knowledge base , ensuring accuracy and reliability of data - Built an automated pipeline with MoviePy , OpenCV , and Pydub to transform text into dynamic video content
Outcome	- Delivered personalized video feedback to 300+ students , significantly enhancing their learning engagement - The automated pipeline significantly reduced the manual effort & time required to provide individualized feedback

- Key Projects
- Football Match Analysis  | *Self Project* Jul'25 - Aug'25
- Constructed a football analysis system with **Python**, **OpenCV**, **PyTorch**, & **YOLOv5** to track movements and classify players
 - Used **YOLOv5** and **SORT** for tracking, calculated speed, ball control, & integrated optical flow and perspective transformation
 - Applied **K-means Clustering** for precise team classification by the t-shirt colors, improving the accuracy of player identification
 - Achieved mAP score of **0.63** for ball detection, **91%** accuracy for player detection and **98%** accuracy in classifying players in teams
- Security Analysis and ML Model for CAR-PUFs  | *Prof. Purushottam Kar | Course Project* Feb'24 - Apr'24
- Demonstrated how a **Companion Arbiter PUF** can be compromised using a single linear model through mathematical analysis
 - Implemented feature mapping & training methods like **polynomial** features and **one-hot** encoding to learn linear model parameters
 - Analyzed and compared **LinearSVC** and **Logistic Regression** from sklearn, evaluating hyperparameter impact on training time
 - Achieved **99.85%** training accuracy and **99.19%** test accuracy with optimized training processes and low misclassification rate

- IIT Kanpur Campus: Shortest Path Finder  | *Self Project* Aug'25 - Sep'25
- Developed an optimal pathfinding solution for the IIT Kanpur campus by applying and implementing **Dijkstra** using **C++**
 - Engineered a custom **graph** data structure and leveraged **STL** containers like **vector**, **unordered_map**, and **priority_queue**
 - Optimized graph representation using **adjacency lists**, reducing memory usage by **30%** compared to **adjacency matrix**

Programming Languages: C, C++, Python, SQL	Tools: Jupyter, Tableau, Excel, Power BI, L ^A T _E X
Libraries: OpenCV, PyTorch, NLTK, MoviePy, Pydub	Proficient in: OOPS, Machine Learning, Low-Level Design

Relevant Courses		
Fundamentals of Computing	Probability And Statistics	Linear Algebra
Data Structures & Algorithms	PDE & ODE	Introduction to Machine Learning
Integral Equations	Number Theory	Scientific Computing I & II

- Position of Responsibility
- Secretary | *Music Club, IIT Kanpur* Apr'22 - Jul'23
- Coordinated event logistics, overseeing stage setup and sound systems to deliver smooth, engaging performances for attendees
 - Trained and mentored **30+** first-year students for Freshers' event and conducted **percussion workshops** for campus community
 - Performed as the lead percussionist in Musical Extravaganza, IITK's annual music fest, entertaining **1,000+** enthusiastic attendees

- Social Impact
- Dakshana Exam Coordinator | *The Dakshana Foundation, India* Mar'24 - Apr'24
- Conducted JDST/NCST operations at JNV Ayodhya, managing hall readiness, invigilation flow, and on-time online exam window
 - Led a team to manage **150+** candidates, managing identity verification and app-based check-ins via Dakshana Felicitation app
 - Acted as center coordinator, Working with staff and **Dakshana POCs**, resolving issues, upholding test integrity for fair selection

- Extra-Curricular Activities
- Participated in **Amazon ML Summer School** selection 2025, completing application and assessment in machine learning concepts
 - Participated in the E-Commerce and Tech Quiz of **Flipkart GRiD 5.0 - Health+Track** organized by **Flipkart** in 2023
 - Mentored **three JEE aspirants** as a **Dakshana Foundation representative** in 2023, providing guidance and academic support
 - Secured **1st** place in solo instrumental music competition at **Kala Utsav (cluster level)** and 3rd at **regional level** in 2018