

Harsh Jha

Final year postgraduate, IIT Kanpur

Hydraulics and Water Resources Engineering, Department of Civil Engineering

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2024 - Present	M.Tech	Indian Institute of Technology, Kanpur	7.15/10
2023	B.Tech	Swami Vivekanand Institute of Engineering & Technology, Banur	8.16/10
2019	CBSE(XII)	St. Xaviers High School, Keonjhar	78.4%
2017	CBSE(X)	Kantabanji Lions Public School, Bolangir	10/10

M.tech Research Thesis

- **Experimental investigation of Dam-Break Wave Dynamics**

(Jul'25 - Ongoing)

Supervisor: **Dr. Gourabnanda Pahar**, Department of Civil Engineering, IIT Kanpur

- Designed and executed flume-based sluice gate experiments using calibrated pressure sensors and video tracking to analyze dam-break wave propagation, attenuation, and the influence of obstacles/vegetation on flow dynamics.
- Refined experimental setup to address challenges such as wave break and instability, ensuring high-quality hydrodynamic data for reliable model validation and flood risk assessment.

Internship/Experience

- CAD/BIM Draftsman (Remote Consultant) | Drafting49 Inc., Canada

(Oct'23 - Ongoing)

- Technical Instructor | CADD Centre, Panchkula

(Apr'23 - Sep'23)

Key Projects

- COVID-19 Analysis & Forecasting | Self Project

(Aug'25)

- Analyzed global and India-specific COVID-19 trends (confirmed, deaths, recovered) using JHU dataset.
- Built 7-day time-series forecast with Prophet, visualizing infection growth and recovery patterns.

- HR Analytics: Employee Attrition & Retention Analysis | Self Project

(Jul'25)

- Conducted exploratory data analysis on IBM HR dataset (15k records) to identify key drivers of employee attrition.
- Built visualizations (salary, tenure, department) using Python, Pandas, Seaborn, and Matplotlib to uncover actionable insights.

- Netflix Recommendation Engine | Self Project

(Jun'25)

- Processed and analyzed millions of Netflix ratings to uncover viewing patterns and user preferences.
- Built a collaborative filtering-based recommender system delivering personalized top-N movie suggestions.

- Public Brawl Detection System using AI and Computer Vision

(Jan'25 - Apr'25)

Breaking Bias(Round 2) | Organised by IITK Consulting Group

- Developed a deep learning-based system for brawl vs. peace classification in surveillance videos (2,000+ labeled clips, 1–10s duration) using 3D CNN for spatio-temporal learning and YOLOv8 for real-time crowd detection.
- Achieved high accuracy on unseen test data, demonstrating applications in public safety, smart surveillance, and crowd monitoring, leveraging PyTorch, OpenCV, NumPy, and Scikit-learn.

- Rainfall Data Analysis and Visualization | Self Project

(Feb'25)

- Processed IMD gridded daily rainfall data (0.25° resolution, 2010–2020) using Python (xarray, pandas, matplotlib) to generate time-series, statistical summaries, and spatial contour plots.
- Implemented parallel processing with multiprocessing for grid-wise computations, enabling efficient large-scale rainfall variability analysis across India.

Skills & Certifications

- Programming Languages: C, C++, Python, MATLAB

- Software and Libraries: NumPy, Matplotlib, Pandas, SciPy, SymPy, Xarray, PostgreSQL, MySQL, Seaborn, Pytorch, OpenCV, YOLOv8, Scikit-Learn, 3D CNN, TensorFlow, MS Office, Visual Studio, Jupyter Notebook, Google Colab, Spyder, LATEX, Multiprocessing, Arduino IDE, MQTT

- Certifications: AutoCAD 2D, Revit

Positions of Responsibility

- Event Coordinator | Fun Club & Technical Competitions | SVIET

(2022 - 23)

- Led and organized various cultural and technical events, ensuring smooth coordination between participants and faculty.
- Managed event logistics, registrations, and scheduling, enhancing student engagement and participation.

Achievements & Extra-Curricular

- Secured third place in the 'Breaking Bias' ML Competition — applied ML techniques (clustering, feature extraction) for image restoration, and built DL-based video classification and crowd estimation models for brawl detection, organized by IITK Consulting Group, IIT Kanpur (April, 2025).
- Successfully qualified GATE (Civil Engineering) in consecutive years – 2023 conducted by IIT Kanpur & 2024 conducted by IISc Bangalore.