

DHEERAJ KUMAR GEHLOT

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Education

Indian Institute of Science Education and Research, Pune

Aug 2025 - Present

Ph.D. Student in Data Science

Indian Institute of Technology Jodhpur

Sep 2020 - May 2022

M.Sc. in Mathematics

Sri Venkateswara College, University of Delhi

July 2017 - May 2020

B.Sc. (Hons.) Mathematics

Research Interests

Topic: Uncertainty Quantification, Distribution-Free Inference, Conformal Prediction, Machine Learning for Weather Prediction.

Research & Professional Experience

Research Scholar

Aug 2025 - Present

Data Science, IISER Pune

- Advisor: Dr. Bedartha Goswami
- Developing distribution-free uncertainty quantification methods using conformal prediction to calibrate machine-learning weather prediction models, with an emphasis on reliable prediction intervals for extreme weather events.
- The aim is to build confidence intervals for extreme weather events to produce reliable prediction sets.

Quality Analyst & Project Reviewer

July 2024 - Dec 2025

Turing

- Evaluated preference optimization (DPO), retrieval-augmented generation (RAG), and multimodal datasets for factual consistency, mathematical correctness, and benchmark alignment (MMMU, CharXiv).
- Coordinated a team of 7 reviewers to develop mathematical evaluation criteria and improve the quality of reasoning in LLM training datasets.

Junior Research Fellow

April 2024 - July 2024

IIT Jodhpur

Associate Faculty

July 2022 - Sept 2023

Physics Wallah Coaching Institute

- Designed and delivered lectures on advanced JEE mathematics, mentoring students through problem-solving sessions and individualized doubt resolution.

Projects

Demographic Data Dashboard for India

April 2026

- Developed an interactive demographic dashboard for India by building a data processing and visualization pipeline using Pandas, NumPy, and Streamlit, enabling exploratory analysis of demographic indicators through dynamic visualizations.



Dynamical Analysis on Prey-Predator and Epidemiological Models

April 2022

- Developed and analyzed nonlinear ordinary differential equation (ODE) models for predator-prey and epidemiological systems, employing phase plane analysis, equilibrium characterization, Jacobian linearization, eigenvalue analysis, and numerical simulations to investigate stability and asymptotic behavior.

Implicit Social Networks as Bipartite Graphs

January 2022

- Constructed bipartite social networks and performed graph-theoretic analyses using bipartite projections, degree centrality, and connected component analysis to infer implicit social structures.

Scholarships and Fellowships

• IndiaAI Fellowship	November 2025
• CSIR NET-JRF (Mathematics, AIR 30)	July 2024
• GATE (Mathematics AIR 167 and Data Science AIR 1213)	Feb 2024
• CSIR-NET (Lectureship AIR 75)	December 2023
• IIT-JAM (Mathematics)	Feb 2020

Key Coursework

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|---|---------------------------------------|
| • Deep Learning & Data Science Practice | • Computational & Numerical Methods |
| • Computing for Data Science | • ODE/PDE & Dynamical Systems |
| • Probability & Statistics | • Abstract & Linear Algebra |
| • Optimization & Operations Research | • Graph Theory & Discrete Mathematics |

Technical Skills

Languages/Libraries: Python (Pandas, Torch, TensorFlow, NumPy, SciKit-Learn, Matplotlib), Generative models, LaTeX

Methodologies: Conformal Prediction, Uncertainty Quantification, Machine Learning, Deep Learning, Statistical Modeling