

Arijit Dey | Curriculum Vitae

Second Year Graduate Student in Statistics – Duke University

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Education

Duke University

Ph.D. in Statistics, GPA: 3.837/4

Durham, USA

2024–Present

Indian Institute of Technology Kanpur (IITK)

M.Sc. in Statistics, CPI: 9.55/10

Kanpur, India

2022–2024

Ramakrishna Mission Residential College (Autonomous), Narendrapur

B.Sc. in Statistics, CGPA: 9.58/10

Kolkata, India

2019–2022

Current Research Projects

Q-Learning for SMART Designs with Censored Survival Outcomes

Mentor: Dr. Bibhas Chakraborty and Dr. Xiaoxi Yan, Duke-NUS Medical School

Jan'26–Present

- Developing a semiparametric Q-learning framework for multi-stage clinical decision making under right-censored survival data, including custom R implementations with inverse-probability censoring weights and large-scale simulation studies to evaluate optimal treatment regimes.

Sensitivity and Regularity of Optimizer Maps in Bayesian Optimization

Mentor: Dr. Simon Mak, Dept. of Statistical Sciences, Duke University

Jan'26–Present

- Developing theoretical guarantees for stability of optimal decisions in parametric black-box optimization problems of the form $f(x, \theta)$. The work characterizes continuity and smooth dependence of the optimizer on noise parameters and motivates curvature-aware robust acquisition strategies.

Publications

Peer-reviewed

- **A. Dey**, and A. Hazra, (2025). A Semiparametric Generalized Exponential Regression Model with a Principled Distance-based Prior. *Statistical Papers*. [Link](#)

Submitted

- **A. Dey**, X. Yan, and B. Chakraborty (2025+). Sample size calculation of SMART design with a skewed outcome: Application to the SMART+ study. *Statistical Methods in Medical Research*.
- D. Munson, **A. Dey**, and S. Mak (2026+). Environmental policy in the context of complex systems: Statistical sensitivity testing and policy optimization using agent-based models. *Environmental Modelling and Software*.

Experiences

Teaching Assistant, Duke University

- STA199: Grading, Holding Office Hours, Lab Leader
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Spring 25

Fall 25

Spring 26

Research Assistant, IIT Kanpur

Spring 24

Teaching Assistant, Online Degree Program, IIT Madras

Summer 23

Academic Achievements

- *N. Balakrishnan Award in Statistics* for the best final-year M.Sc. (2-year) statistics student, IIT Kanpur.

- *Academic Excellence Award* in Statistics for 2022 and 2023, IIT Kanpur.
- All India Rank 15 in Joint Admission Test for Masters (JAM) 2022 among 2912 candidates.
- *Swami Lokeshwarananda award* for best all-around performances in U.G. courses 2021-22.
- *DST-inspire scholarship* for being in the top 1 percentile of higher secondary board exams.

Relevant Coursework

- **PhD Level Course (Duke University)**

Bayesian Statistical Modelling, Probability and Measure Theory, Linear Models, Statistical Inference, Probability and Statistical Models, High-dimensional Statistics.

- **Masters Level Course (IIT Kanpur)**

Linear Algebra, Real Analysis, Complex Analysis, Probability and Measure Theory, Statistical Inference, Regression Analysis, Time Series Analysis, Multivariate Analysis, Stochastic Process, Statistical Computing, Non-parametric Inference, Game Theory, Data Science Lab I, II & III, Intro to Machine Learning.

Skills

Programming Expertise: *R* (Proficient), *Python*

System software: \LaTeX , GitHub, Microsoft Office

Languages: English (Professional), Bengali (Native), Hindi (Limited), Spanish (Beginner)

Extra Curricular

Positions of Responsibility:

- Secretary of *Raktarpan*, a club under *IITK* with the responsibility of organizing blood donation camps.
- General Secretary of the *Student's Council*, RKMRC Narendrapur, 2021-22.
- Convenor of the *Sports Subcommittee*, RKMRC Narendrapur, 2021-22.
- Junior Under Officer (JUO), *NCC wing* of RKMRC Narendrapur, 2021-22.

Sports: Active participation in games including Cricket, Football, and Volleyball.