

# Rounak Ray

## Curriculum Vitae

Office 310, Division of Applied Mathematics, Brown University  
182 George Street, Providence, RI 02906

✉ [rounak\\_ray@brown.edu](mailto:rounak_ray@brown.edu)  
🌐 [sites.google.com/view/rounakray](https://sites.google.com/view/rounakray)

### Research Interests

Random graphs, Statistical physics, Interacting particle systems, Random walks, Random interface models, Large deviation

### Work Experience

- 2025 - 2026 [Division of Applied Mathematics, Brown University](#) Post-doctoral research fellow  
Jan - May 2025 [SLMath](#) (formerly **MSRI**) Post-doctoral research fellow

### Education

- 2020–2024 **PhD**, [Eindhoven University of Technology](#).  
**Department:** Mathematics & Computer Science  
**Supervisors:** [Prof. Remco van der Hofstad](#), [Dr. Rajat Subhra Hazra](#)  
**Dissertation:** [Stochastic Processes on Preferential Attachment Models](#)  
2018–2020 **Master of Statistics (Hons.)**, [Indian Statistical Institute, Kolkata](#).  
**Specialisation:** Probability Theory  
2015–2018 **Bachelor of Statistics (Hons.)**, [Indian Statistical Institute, Kolkata](#).

### Professional Experience

- November 2023 Organizer of "[Lecture series on interacting particle systems on random graphs](#)"  
2021–2023 Teaching Assistant, Eindhoven University of Technology: Longitudinal Data Analysis  
2022–2024 Teaching Assistant, Eindhoven University of Technology: Random Graphs

### Ongoing Project

- Title **Tiny giant of subcritical preferential attachment models**  
Collaborators [Prof. Remco van der Hofstad](#), [Dr. Rajat Subhra Hazra](#), [Prof. Shankar Bhamidi](#), [Dr. Sayan Banerjee](#)  
Title **Network evolution with self-reinforcement**  
Collaborators [Prof. Shankar Bhamidi](#), [Prof. Frank den Hollander](#), [Prof. Remco van der Hofstad](#)  
Title **Bethe prediction for statistical physics models with non-pairwise interaction**  
Collaborators [Prof. Kavita Ramanan](#), [I-Hsun Chen](#), [Janaky Murthy](#), [Bodhisatta Das](#), [Aritra Majumdar](#)  
Title **Analysing CD behaviour in nano-lithography process** (Joint project with ASML)  
Collaborators [Prof. Remco van der Hofstad](#), [B. Slachter \(ASML\)](#), [Haodong Zhu](#)

### Publications

- 2025 [R. van der Hofstad](#), [R. Ray](#) **Ising model on preferential attachment models**. [ArXiv Preprint](#)  
2024 [R. van der Hofstad](#), [R. Hazra](#), [R. Ray](#). **Percolation on preferential attachment models**. [ArXiv Preprint](#).  
2023 [A. Garavaglia](#), [R. van der Hofstad](#), [R. Hazra](#), [R. Ray](#). **Universality of the local limit of preferential attachment models**. [ArXiv Preprint](#).

- 2023 **A. Cipriani**, B. Dan, **R. Hazra**, R. Ray. **Maximum of the Membrane Model on Regular Trees.**  
*Journal of Statistical Physics* 190, Article number: 25(2023).

## Selected Talks

- 2024 International Indian Statistical Association Conference, Cochin, India.  
2023 INFORMS APS-23 conference, Nancy, France  
2023 Mark-Kac Seminar, Utrecht University, The Netherlands  
2022 Spring School: Random Geometric Graph, TU Darmstadt, Germany.  
2021 NETWORKS Training Week, Asperen, The Netherlands  
2021 CNRS-IRP Bézout-Eurandom meeting, Institut Henri Poincaré, Paris, France.

## Projects

- July-Nov 2018 **Fitting a Linear Death Process to a Data set on Ants.**  
- **Supervisor:** **Prof. Anup Dewanji**, ASU, Indian Statistical Institute, Kolkata  
July-Nov 2018 **Stein Estimator in Spherically Symmetric Cases.**  
- **Supervisor:** **Abhik Ghosh**, ISRU, Indian Statistical Institute, Kolkata  
Jan-May 2018 **Bank Locker Problem (Bachelor's Final Year Project).**  
- **Supervisor:** **Prof. Bimal Kumar Ray**, R.C. Bose Centre for Cryptology and Security, ISI, Kolkata  
Summer 2017 **Mixing Time of Markov Chains.**  
- **Supervisor:** **Prof. Manjunath Krishnapur**, Department of Mathematics, IISc, Bangalore

## Scholastic Achievements

- 2019 AIR 14 in **National Eligibility Test (Dec,2019) Mathematical Sciences**, CSIR, India  
2015–2020 **Kishore Vaigyanik Protsahan Yojana** Scholarship Recipient  
2018 AIR 69 in **National Eligibility Test (Dec,2018) Mathematical Sciences**, CSIR, India

## Positions of Responsibilities

- 2021–2022 **Treasurer** of 59-th board of **Panache E.S.B.V**  
2018–2019 **Treasurer** for **Integration 2018** and **Integration 2019**, the Annual Techno-Cultural-Sports Fest  
of **Indian Statistical Institute, Kolkata**  
2017-2018 **Treasurer** of Hostel Mess run by a Students Body

## Technical Skills

- Programming Languages PYTHON, C++  
Software Packages R,  $\text{\LaTeX}$

## Extra Curriculars

- Hobbies Travelling, Nature Photography  
Activities Drama, Football, Chess, Bridge

## Languages

- Bengali Mother Tongue  
Hindi Native Language  
English 2nd Language