

Rounak Ray

Curriculum Vitae

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Research Interests

Random graphs, Random walks, Random interface models, Statistical physics, Large deviation

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](#).

Work Experience

Jan - May 2025 [SLMath](#) (formerly **MSRI**) Post-doctoral research fellow

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](#), [Dr. Manish Pandey](#), [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
- 2013 Qualified for **National Talent Search Examination** in the State-level

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, \LaTeX

Extra Curriculars

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

Languages

- Bengali Mother Tongue
- Hindi Native Language
- English 2nd Language