

AYTIJHYA SAHA

Curriculum Vitae

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Education

- 2025 - 2030 **PhD in Electrical Engineering and Computer Science**, *Massachusetts Institute of Technology*, USA.
- Advisors: *Prof. Devavrat Shah* & *Prof. Stephen Bates*.
- 2023 - 2025 **Master of Statistics [M.Stat]**, *Indian Statistical Institute*, Kolkata, India.
- Dissertation Advisors: *Prof. Aaditya Ramdas* (CMU) & *Prof. Soumendu Sundar Mukherjee* (ISI)
- Dissertation Title: Sequential Changepoint Localization PC Mahalanobis Memorial Gold Medal
- 2020 - 2023 **Bachelor of Statistics [B.Stat] (Honours)**, *Indian Statistical Institute*, Kolkata, India.
Mrs. M.R. Iyer Memorial Gold Medal, Nikhilesh Bhattacharya Memorial Gold Medal, Usri Gangopadhyay Memorial Gold Medal

Internships / Research Visits

- Summer'24 Research Intern at the **Department of Statistics and Data Science**, *Carnegie Mellon University*.
Mentor: *Prof. Aaditya Ramdas*
- Summer'23 Visiting scholar at the **Big Data Summer Institute, School of Public Health**, *University of Michigan*.
- Summer'22 Summer Intern at the **Department of Mathematics**, *Indian Institute of Science, Bangalore*.
Mentor: *Prof. Manjunath Krishnapur*

Published (or accepted) papers/articles

In Journals

- 2025 **A. Saha**, A. Ramdas. *Huber-robust likelihood ratio tests for composite nulls and alternatives*. Published in the **IEEE Transactions on Information Theory**. URL: <https://ieeexplore.ieee.org/document/11283062>
- 2025 **A. Saha**, A. Ramdas. *Saha and Ramdas' discussion of "Poisson-focus" by Ward, Dilillo, Eckley and Fearnhead*. Published in the **Journal of the American Statistical Association (JASA)**, Volume 120, Issue 549, Pages 31–33. URL: <https://doi.org/10.1080/01621459.2024.2402957>
- 2024 **A. Saha**, N. R. Pal. *Group-Feature Selection Using a Neural Network With Group Lasso Regularization and Controlled Redundancy*. Published in **Neurocomputing**, Volume 610, 2024, 128596, ISSN 0925-2312. URL: <https://doi.org/10.1016/j.neucom.2024.128596>

In Conference Proceedings

- 2024 **A. Saha**, A. Ramdas. *Testing Exchangeability by Pairwise Betting*. Published at the **International Conference on Artificial Intelligence and Statistics (AISTATS), 2024**. URL: <https://proceedings.mlr.press/v238/saha24b.html> **ORAL**
- 2023 J. Ray Choudhury*, **A. Saha***, S. Roy, S. Dutta. *Robust Classification of High-Dimensional Data using Data-Adaptive Energy Distance*. Published at the **European Conference on Machine Learning and Knowledge Discovery in Databases: Research Track. (ECML PKDD), 2023**. URL: https://doi.org/10.1007/978-3-031-43424-2_6

*Equal contributions

Preprints / Working Papers

- 2025 **A. Saha**, A. Ramdas. *Density estimation with atom and functional estimation for discrete-continuous mixture.* URL: <https://arxiv.org/abs/2508.01706>.
- 2025 **A. Saha**, A. Ramdas. *Post-detection inference for sequential changepoint localization.* URL: <https://arxiv.org/abs/2502.06096>.

Academic Accolades

- 2025 Awarded **Prasanta Chandra Mahalanobis Gold Medal** as the **most outstanding** student in the M.Stat. programme (2023 - 2025) at the Indian Statistical Institute
- 2025 Awarded **Hewlett Packard Fellowship** by MIT School of Engineering
- 2025 Awarded **EDGE Doctoral Fellowship** by Stanford University [Declined]
- 2023 Received **Mrs. M.R. Iyer Memorial Gold Medal** for securing the **first position** in B.Stat (Hons.) program (2020 - 2023) at the Indian Statistical Institute
- 2023 Received **Nikhilesh Bhattacharya Memorial Gold Medal** for the **best performance in Statistics** in B.Stat (Hons.) program (2020 - 2023) at the Indian Statistical Institute
- 2023 Received **Usri Gangopadhyay Memorial Gold Medal** in B.Stat (Hons.) program (2020 - 2023) at the Indian Statistical Institute
- 2020 - 2023 Received the **prize money for outstanding performance** in all semesters in the B.Stat program (2020 - 2023) at the Indian Statistical Institute (ISI), Kolkata
- 2021 & 2022 Received **Mukul Chaudhuri Cash Award** in both 1st year and 2nd year of B.Stat program from the Indian Statistical Institute (ISI), Kolkata
- 2020 - 2025 Received the **Kishore Vaigyanik Protsahan Yojana (Young Scientist Incentive Plan) fellowship**, funded by the Department of Science and Technology, Government of India
- 2019 & 2020 Selected **twice** to participate in the **Asian Pacific Mathematical Olympiad (APMO)** from India
- 2019 & 2020 Selected **twice** to participate in the **International Mathematical Olympiad Training Camp (IMOTC)** organized by Homi Bhabha Centre for Science Education (HBCSE), TIFR
- 2019 Qualified **Indian National Mathematical Olympiad (INMO)** (among top ~75 participants all India) organized by the NBHM, Government of India.
- 2018 - 2019 Qualified aptitude test and interview rounds in SA stream of **Kishore Vaigyanik Protsahan Yojana (KVPY)** exam with an **All India Rank of 388**

Other Academic Experiences

- Jul, 2025 Participant of the 3rd Workshop on Sequential Anytime-Valid Inference at **Chennai Mathematical Institute**, India
- Jul, 2024 Participant of a summer school at **Columbia University**
- Jul, 2021 Participant of **Mathematical Summer in Paris** (online) organised by **CNRS/ Université Paris-Saclay**
- May, 2020 Participant (as a member of the senior batch) of **International Mathematical Olympiad Training Camp (IMOTC)** organized by *Homi Bhabha Centre for Science Education (HBCSE), Mumbai*

Apr - May 2019 Participant of **International Mathematical Olympiad Training Camp (IMOTC)** at *Homi Bhabha Centre for Science Education (HBCSE), Mumbai*

Dec 2018 - Jan 2019 Participant of **Indian National Mathematical Olympiad Training Camp (INMOTC)** at *Indian Statistical Institute, Kolkata*

Talks and Presentations

University/Departmental Seminar

Sep, 2025 [Invited talk] **PCM Gold Medal Presentation** at the Indian Statistical Institute, Kolkata
Title: Testing exchangeability by pairwise betting [[slides](#)]

Jul, 2024 Presentation at Carnegie Mellon University, Pittsburgh
Title: Huber-Robust Anytime-Valid Sequential Probability Ratio Test [[Link to the slides](#)]

Sep, 2023 [Invited talk] **D. Basu Memorial Award Presentation** at the Indian Statistical Institute, Kolkata
Title: Navigating the Challenges of High-dimensional Low Sample Size Data: A Two-sample Test and a Novel Classification Approach [[Link to the slides](#)]

Workshop/Conference/Seminar

July, 2025 Invited talk at the 3rd Workshop on Sequential Anytime-Valid Inference, Chennai Mathematical Institute
Title: Huber-Robust Likelihood Ratio Tests for Composite Nulls and Alternatives [[Slides](#)]

May, 2025 Invited talk (online) at International Seminar on Selective Inference
Title: Post-detection inference for sequential changepoint localization [[Talk Recording](#)]

Jul, 2023 Invited talk at the Symposium on Big Data, Human Health, and Statistics, University of Michigan
Title: Machine Learning for Healthcare

Industry

Feb, 2025 Invited talk (online) at Amazon Research (AWS)
Title: Post-detection inference for sequential changepoint localization [[Link to the slides](#)]

Additional Information

- **Hobbies:** Painting, Chess, Swimming, Traveling, Table tennis
- **Service**
 - A **reviewer** of Sankhya A, 2025.
 - **Co-chair** of the [31-th Annual Sanjoy K. Mitter LIDS Student Conference](#), 2026.
 - A **core member** of the organizing committee of the [Math Club](#) at ISI Kolkata, 2023-2025.
 - Served as a member of the question paper committee for the [Mathematics Talent Reward Programme \(MTRP, 2023\)](#), a math contest for high school students organized by ISI Kolkata students.
- **Google Scholar:** <https://scholar.google.com/citations?user=fKv7P-wAAAAJ&hl=en>
- **GitHub:** <https://github.com/Aytijhya>