

Enakshi Saha, PhD

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August 26, 2024

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Employment

- **University of South Carolina** Columbia, SC
Assistant Professor at Arnold School of Public Health August, 2024 - present
– Department of Epidemiology and Biostatistics
- **Harvard University** Boston, MA
Research Associate at Harvard T.H. Chan School of Public Health June, 2023 - present
– Mentor: Dr. John Quackenbush

Postdoctoral Fellow at Harvard T.H. Chan School of Public Health June, 2021 - June, 2023
– Mentor: Dr. John Quackenbush
- **Argonne National Laboratory** Lemont, IL
National Science Foundation Mathematical Sciences Graduate Intern June - August, 2020
– Mentor: Dr. Carlo Graziani, Argonne National Laboratory & The University of Chicago, Department of Astronomy & Astrophysics

Education

- **The University of Chicago** Chicago, USA
PhD in Statistics September, 2016 - June, 2021
– Thesis Title: Flexible Bayesian Methods for High-dimensional Data
– Advisor: Dr. Veronika Rockova, The University of Chicago Booth School of Business
- **Indian Statistical Institute** Kolkata, India
Master of Statistics(M.Stat) 2014 - 2016
– Specialization: Mathematical Statistics and Probability
– Dissertation: Some One-sample Tests for High Dimensional Low Sample Size Data (Supervised by Dr. Anil K. Ghosh, Stat-Math Unit, ISI Kolkata)
- **Indian Statistical Institute** Kolkata, India
Bachelor of Statistics(B.Stat) (Hons.) 2011 - 2014

Publications

- 2016 **SARIMA modeling of the monthly average maximum and minimum temperatures in the eastern plateau region of India.**
Saha, Enakshi, Arnab Hazra, and Pabitra Banik.
Mausam 67, no. 4: 841-848.
- 2017 **Some high-dimensional one-sample tests based on functions of interpoint distances.**
Saha, Enakshi, Soham Sarkar, and Anil K. Ghosh.
Journal of Multivariate Analysis 161: 83-95.
- 2019 **On theory for BART.**
Rockova, Veronika, and Enakshi Saha.
22nd international conference on artificial intelligence and statistics (AISTATS), pp. 2839-2848. PMLR.
- 2021 **Dynamic sparse factor analysis.**
Saha, Enakshi, Kenichiro McAlinn and Veronika Rockova
Journal of Applied Econometrics (Revision invited) arXiv:1812.04187.
- 2021 **Impact of the COVID-19 induced lockdown measures on PM2.5 concentration in USA.**
Ghosal, Rahul, and Enakshi Saha.
Atmospheric Environment 254 (2021): 118388.
- 2023 **The Network Zoo: a multilingual package for the inference and analysis of gene regulatory networks.**
Ben Guebila M, Wang T, ... , Saha E, et al.
Genome Biology 24, no. 1: 45.
- 2023 **Gender difference in the effects of chronic diseases on daily physical activity patterns in older adults: analysis of objectively measured physical activity in NHATS 2021**
Saha, Enakshi and Rahul Ghosal
Annals of Epidemiology 86, 110-118.e4.
- 2023 **Theory of Posterior Concentration for Generalized Bayesian Additive Regression Trees**
Saha, Enakshi
Electronic Journal of Statistics (revision submitted) arxiv:2304.12505.
- 2023 **Gene regulatory Networks Reveal Sex Difference in Lung Adenocarcinoma**
Saha E, Marouen Ben Guebila, ... , Dawn DeMeo, John Quackenbush, Camila Lopes-Ramos.
Journal of the National Cancer Institute (submitted) bioRxiv 2023.09.22.559001.

- 2023 **BONOBO: Bayesian Optimized sample-specific Networks Obtained By OMICS data**
Saha E, Viola Fanfani, ... , John Quackenbush.
Genome Research (revision submitted), RECOMB 2024 (accepted) bioRxiv 2023.11.16.567119.
- 2024 **Understanding the Effect of Aging on Lung Adenocarcinoma using Gene Regulatory Networks**
Saha E, Marouen Ben Guebila, Viola Fanfani, Kate H. Shutta, Dawn L. DeMeo, John Quackenbush, Camila M. Lopes-Ramos *European Respiratory Journal (submitted).*
- 2024 **node2vec2rank: Large Scale and Stable Graph Differential Analysis via Multi-Layer Node Embeddings and Ranking**
Mandros P., Ian Gallagher, ... , Saha E, et al. *PNAS Computational Biology (submitted) bioRxiv 2024.06.16.599201.*

Working Papers

- 2024 **SEAHORSE: Serendipity Engine Assaying Heterogeneous Omics-Related Sampling Experiments**
Saha E, Derrick DeConti, ... , John Quackenbush.
<http://seahorse.tm4.org/>
- 2024 **Single-sample Multiomic Associations Using Gaussian graphical models**
Saha E, Kate Hoff-Shutta, ... , John Quackenbush.

Teaching Experience

As Instructor:

Statistical Methods and Applications, Spring 2019, The University of Chicago

As Teaching Assistant (at The University of Chicago):

- Measure Theoretic Probability III, Spring 2021
- Applied Linear Statistical Methods, Fall 2020 (Remote)
- Statistical Methods and Applications, Winter 2020, Fall 2019, Fall 2018
- Mathematical Statistics II, Spring 2018
- Mathematical Statistics I, Winter 2018
- Statistical Theory and Method II, Winter 2017 and Spring 2017

Services

As Journal Reviewer:

- **Statistics:** Bayesian Analysis, Sankhya Series A
- **Machine Learning:** ICML, AISTATS
- **Medicine:** Annals of the American Thoracic Society, Journal of Applied Pharmaceutical Science

Invited Talks

- 28th Annual International Conference on Research in Computational Molecular Biology (RECOMB 2024)
Title: BONOBO: Bayesian Optimized sample-specific Networks Obtained By OMICS data
- Global Health Week 2024 at the Harvard T. H. Chan School of Public Health
Title: Gender difference in the effects of chronic diseases on daily physical activity patterns in older adults: analysis of objectively measured physical activity in NHATS 2021
- Pulmonary and Critical Care Medicine, Work-in-Progress, 2023-2024, Brigham and Women's Hospital
Title: Gene Regulatory Networks Reveal Sex Difference in Lung Adenocarcinoma
- 2023 Joint Statistical Meetings, Toronto, Canada
Title: Bayesian Optimized sample-specific Networks Obtained By assimilating OMICS data (BONOBO)
- Harvard University Network Science Meeting, 2020
Title: Bayesian Latent Variable Models for Dynamic Data
- University of Chicago Department of Statistics Consulting Seminar 2020
Title: Bayesian Latent Variable Modeling of COVID-19 Infection Rate
- 2020 Talk at Radix Trading, Chicago, Illinois
Title: Dynamic Sparse Factor Analysis and Its Role in Dynamic Portfolio Allocation
- LANS Summer Argonne Students' Symposium, 2020
Title: Bayesian Latent Variable Modeling of COVID-19 Infection Rate
- ORISE / DOE Ignite Off! 2020
Title: Bayesian Latent Variable Modeling of COVID-19 Infection Rate
- 2019 Joint Statistical Meetings, Denver, Colorado
Title: On Theory for BART
- University of Chicago Department of Statistics Consulting Seminar 2019
Title: Role of Gene Tbx5 in Formation of Forelimb in Zebrafish
- University of Chicago Department of Statistics Consulting Seminar 2018

Title: Effect of Hunger on Moral Development in Children

- University of Chicago Department of Statistics Consulting Seminar 2017

Title: An Introduction to Bradley-Terry Model

- D.Basu Memorial Lecture (2014), ISI Kolkata

Title: Exact Distribution Free Multisample Run Tests Applicable to High Dimensional Data

Awards and Honors

- Recipient of Radix Trading Fellowship 2020-2021
- Finalist of ORISE / DOE Ignite Off Competition (2020)
Talk Title: Bayesian Latent-Variable Modeling of COVID-19 Infection Rate
- Winner of Senior Consultant Award, Department of Statistics, The University of Chicago (2018-19)
- Winner of Statistical Consulting Project, Department of Statistics, The University of Chicago (2017-18)
- Nominated for D.Basu Gold Medal for the most outstanding student in B.Stat, Indian Statistical Institute (2014)
- Recipient of Mukul Chaudhury Memorial Prize for the Highest Scoring Female Student in B.Stat, Indian Statistical Institute (2012-2013)
- Recipient of Prize Money for Academic Excellence in B.Stat and M.Stat, Indian Statistical Institute (2011-2015)

Statistical Consulting Experience

- Effect of Hunger on Moral Development in Children
with Elizabeth Huppert & Jean Decety, Department of Psychology, The University of Chicago
- Role of Gene Tbx5 in Formation of Forelimb in Zebrafish
with Erin Boyle Anderson & Robert K. Ho, Department of Organismal Biology and Anatomy, The University of Chicago
- Moderated Mediation Analysis of Moral Communication and Moral Hypocrisy
with Elizabeth Huppert, Emma Levine & Jean Decety, Department of Psychology, The University of Chicago

Programming Skills

R, Python, MATLAB

References

- Dr. John Quackenbush

Henry Pickering Walcott Professor of Computational Biology and Bioinformatics; Chair of the Department of Biostatistics at the Harvard T.H. Chan School of Public Health; Professor in the Channing Division of Network Medicine, and Professor at the Dana-Farber Cancer Institute

Contact: johnq@hsph.harvard.edu

- Dr. Carlo Graziani

Computational Scientist at Argonne National Laboratory and Research Associate Professor at the Department of Astronomy & Astrophysics, University of Chicago

Contact: cgraziani@anl.gov

- Dr. Rajarshi Mukherjee

Assistant Professor in the Department of Biostatistics at the Harvard T.H. Chan School of Public Health

Contact: ram521@mail.harvard.edu

- Dr. Dawn L. DeMeo

Associate Professor of Medicine at Harvard Medical School, and a senior respiratory genetics researcher in the Channing Division of Network Medicine.

Contact: redld@channing.harvard.edu

- Dr. Camila M. Lopes-Ramos

Instructor in Medicine, Department of Biostatistics at the Harvard T.H. Chan School of Public Health, Brigham and Women's Hospital and Harvard Medical School

Contact: camilaramos@hsph.harvard.edu