

# Soham Jana

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Updated on: December 1, 2021  
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## Research Interests

Theoretical and methodological aspects of high-dimensional statistics, Markov decision processes, non-parametric estimation, sparse recovery, optimization methods.

## Education

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|--|----------------------|
| <b>PhD. in Statistics and Data Science</b><br>Yale University, New Haven, CT, USA<br>Thesis: Inference with dependent and independent data<br>Advisor: Yihong Wu   | 2017–2022 (expected) |
| <b>Master of Statistics (Hons.)</b> (First class with Distinction)<br>Indian Statistical Institute, Kolkata, West Bengal, India<br>Specialization: Theoretical Statistics<br>Dissertation: Characterization of single-integral non-kernel divergences<br>Advisor: Ayanendranath Basu | 2015–2017            |
| <b>Bachelor of Statistics (Hons.)</b> (First class with Distinction)<br>Indian Statistical Institute, Kolkata, West Bengal, India  | 2012–2015            |

## Publications and preprints (Authors lists that are not in alphabetical order denoted by “\*”)

1. Soham Jana, Yury Polyanskiy, and Yihong Wu. **Regret optimality of minimum distance based empirical Bayes methods for the Poisson model**. Manuscript in preparation.
2. Soham Jana, Henry Li, Yutaro Yamada, and Ofir Lindenbaum. **Support recovery with Stochastic Gates: theory and application for linear models**. arXiv preprint arXiv: 2110.15960 (2021).
3. Yanjun Han, Soham Jana, and Yihong Wu. **Optimal prediction of Markov chains with and without spectral gap**. NeurIPS 2021.
4. Soham Jana, Yury Polyanskiy, and Yihong Wu. **Extrapolating the profile of a finite population**. In Conference on Learning Theory 2020 Jul 15 (pp. 2011-2033). PMLR.
5. Soham Jana and Ayanendranath Basu.\* **A characterization of all single-integral, non-kernel divergence estimators**. IEEE Transactions on Information Theory 65.12 (2019): 7976-7984.

## Talks

- |   |      |
|---|------|
| Neural information processing systems (NeurIPS) | 2021 |
|---|------|

Conference on learning theory (COLT) 2020

## Honors and Awards

INSPIRE Scholarship, Govt. of India 2012-2017

Indian National Mathematical Olympiad (INMO) merit certificate 2012  
(For being among top 75 in the country)

## Graduate teaching assistance

**Stochastic processes** Spring 2021  
S&DS 351–551/EENG 434/ENAS 502  
Instructor: Joseph Chang

**Information Theory** Fall 2020  
S&DS 364–664/EENG 454  
Instructor: Andrew Barron

**Probability Theory** Fall 2019  
S&DS 241–541  
Instructor: Winston Lin

**Advanced Probability** Spring 2019  
S&DS 400–600/Math 600  
Instructor: Sekhar Tatikonda

**Statistical Inference** Fall 2018  
S&DS 410–610  
Instructor: Zhou Fan

## Programming Languages

R, Python, C

## Services

**Paper Reviewer**  
IEEE Transactions on Information Theory

**Yale S&DS M.A. Admisssion Committee** 2021  
Reviewer: one of the committee members handling over  
150 applications and making admission recommendations

**Yale S&DS Graduate Reading Group** 2020  
Co-organizer  
Scheduled talks and lead discussion sessions

**Yale Women in Data Science (WiDS) Workshop** 2020  
Served as a mentor for Yale undergrad students participating  
in the [WiDS Datathon Challenge 2020](#)

**Yale South Asian Graduate and Professional Association (SAGA)** 2018- 2021  
Treasurer, core committee member and cultural committee head  
Objective: organizing socio-cultural events to promote diversity and inclusion at Yale

## References

### **Yihong Wu**

Associate Professor  
Statistics and Data Science  
Yale University  
New Haven, CT, USA

### **Yury Polyanskiy**

Associate Professor  
Electrical Engineering and Computer Science  
Massachusetts Institute of Technology  
Cambridge, MA, USA

### **Andrew Barron**

Charles C. and Dorothea S. Dilley Professor  
Statistics & Data Science  
Yale University  
New Haven, CT, USA

### **Ayanendranath Basu**

Professor (Higher Academic Grade)  
Interdisciplinary Statistical Research Unit  
Indian Statistical Institute  
Kolkata, West Bengal, India