

# Soham Jana

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## Research Interests

Theoretical and algorithmic aspects of Empirical Bayes, minimum distance estimation, estimation on Markov chains

## Education

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

## Publications (Author list in alphabetical order of surnames, unless mentioned otherwise)

1. Yanjun Han, Soham Jana, and Yihong Wu. “**Optimal prediction of Markov chains with and without spectral gap**”. Submitted to NeurIPS 2021. <https://arxiv.org/abs/2106.13947>
2. 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.
3. 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. (First author)

## Preprints (Author list in alphabetical order of surnames, unless mentioned otherwise)

1. Soham Jana, Yury Polyanskiy, and Yihong Wu. “**Regret optimality of minimum distance methods in certain Poisson empirical Bayes problems**”.
2. Soham Jana, Henry Li, Ofir Lindenbaum, and Yutaro Yamada. “**On consistency of stochastic gates in sparsened support recovery problems**”.

## Honors and Awards

INSPIRE Scholarship, Govt. of India 2012-2017

## 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

## Languages

R, Python

## Social activities

- **Treasurer and Board member** June 2018–March 2021  
South Asian Graduate and Professional Association (SAGA)  
Yale University, New Haven, CT, USA
- **Graphics designer** June 2018–June 2020  
South Asian Graduate and Professional Association (SAGA)  
Yale University, New Haven, CT, USA
- **Graphics designer** June 2015–June 2017  
Integration (Annual techno-cultural-sports fest)  
Indian Statistical Institute, Kolkata, West Bengal, India.

## References

### Yihong Wu

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

### Andrew Barron

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

### Yury Polynskiy

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