# Rajita Chandak

ORFE, Princeton University – April 2, 2024

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## Appointments

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| **Bernoulli Instructor** | **Lausanne, Switzerland** |
| *Institute of Mathematics, École Polytechnique Fédérale de Lausanne (EPFL)* | *2024–* |

## Education

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|---|---|
| **Princeton University** | **Princeton, NJ, USA** |
| *Ph.D. in Operations Research and Financial Engineering (ORFE)* | *2019–2024* |
| **Advisor:** Matias Cattaneo | |
| **Princeton University** | **Princeton, NJ, USA** |
| *M.A. in Operations Research and Financial Engineering (ORFE)* | *2019-2021* |
| **Brown University** | **Providence, RI, USA** |
| *Sc.B. with Honors in Applied Mathematics and Economics* | *2015–2019* |
| Honors Thesis: *Energy-aware optimization of scalable load balancing strategies* | |
| **Advisor:** Kavita Ramanan. | |

## Research

### Publications

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| **Convergence rates of oblique regression trees for flexible function libraries** | **arxiv:2210.14429** |
| *Annals of Statistics, forthcoming* | |
| with Matias Cattaneo and Jason Klusowski | |
| **Boundary adaptive local polynomial conditional density estimators** | **arxiv:2204.10359** |
| *Bernoulli, forthcoming* | |
| with Matias Cattaneo, Xinwei Ma and Michael Jansson | |

### Preprints

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| `lpcde`: **Local polynomial conditional density estimation and inference** | **arxiv:2204.10375** |
| with Matias Cattaneo, Xinwei Ma and Michael Jansson | |

### Working Papers

**Consistency of the EM algorithm in high dimensions**
*with Matias Cattaneo and Jason Klusowski*

**Adaptive Mondrian random forests**
*with Matias Cattaneo, Jason Klusowski and William Underwood*

**A new variable importance metric for oblique regression trees**
*with Matias Cattaneo and Jason Klusowski*

## Teaching Experience

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| **Graduate Assistant in Instruction** | **Princeton, NJ** |
| *ORFE, Princeton University* | *2020-Present* |

ORF 499: Senior Thesis (Spring 2024),
SML 312: Research Projects in Data Science (Fall 2023),
ORF 498: Senior Independent Research Foundations (Fall 2023),
ORF 504: Financial Econometrics (Spring 2023),
ORF 524: Statistical Theory and Methods (Fall 2021, Fall 2022),
ORF 245: Fundamentals of Statistics (Fall 2020, Spring 2021).

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| **Senior Thesis Writer's Group** Co-Leader | **Princeton, NJ** |
| *ORFE Department, Princeton University* | *2020-2023* |

Mentored 4th year undergraduate students in ORFE with thesis research and writing.

**Undergraduate Teaching Assistant**                                    **Providence, RI**
*Department of Applied Mathematics, Brown University*                        *2017 – 2019*
APMA1720: Monte Carlo Simulations with Applications to Finance (Spring 2019),
MPA2065: Intro. to Data Science for the Masters of Public Affairs program (Spring 2018),
APMA1650: Statistical Inference I (Fall 2017).

## Awards

**Bernoulli Instructorship**                                                **2024**
*École Polytechnique Fédérale de Lausanne (EPFL)*

**School of Engineering and Applied Science Travel Grant**                  **2023**
*Princeton University*

**Finalist for Graduate Research Fellowship**                               **2023**
*Jane Street*

**School of Engineering and Applied Science Award for Excellence**          **2022**
*Princeton University*

## Software and Programming Skills

R packages: **lpcde**
Python packages: **lpdensity**, **rddensity**
**Additional programming experience:** Matlab, Mathematica, Julia, C++, STATA, Java, HTML, CSS

## Work Experience

**NSF Research Experience for Undergraduates (REU)**     **Worcester Polytechnic Institute (WPI), MA**
*Award DMS 1757685*                                                            *2018*

**NSF Research Experience for Undergraduates (REU)**     **California State University (CSU), Chico, CA**
*Award NSF 1559788*                                                            *2017*

## Talks and Conferences

**Joint Statistical Meeting**                                            **Toronto, CA**
*Invited speaker, Topic-contributed session on decision trees and random forests*    *August 2023*

**Statistical foundations of data science and their applications**          **Princeton, NJ**
*Princeton University*                                                        *May 2023*
Local organizing committee member

**Jane Street**                                                         **New York City, NY**
*Invited speaker, Graduate Research Fellowship Workshop*                      *April 2023*

**Symposium for Undergraduates in Mathematical Sciences (SUMS)**          **Providence, RI**
*Invited speaker, hosted at Brown University*                                *2018, 2019*

**Joint Mathematics Meeting**                                           **Baltimore, MD**
*AMS, MAA*                                                                   *2018, 2019*

**Women in Mathematics in New England (WIMIN)**                        **Northampton, MA**
*Smith College*                                                          *September 2018*

**MIST Workshop**                                                       **Worcester, MA**
*WPI, Applied and Industrial Mathematics Institute for Secondary Teaching*    *July 2018*

## Peer Review

Journal of the American Statistical Association, Econometric Theory, Operations Research, Journal of Causal Inference.

## References

**Matias Cattaneo** ORFE, Princeton University (cattaneo@princeton.edu)
**Jason Klusowski** ORFE, Princeton University (jason.klusowski@princeton.edu)
**Jianqing Fan** ORFE, Princeton University (jqfan@princeton.edu)