Rajita Chandak

ORFE, Princeton University – September 25, 2023

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Education

Princeton University — **Princeton, NJ, USA**
Ph.D. in Operations Research and Financial Engineering (ORFE) — *2019–Present*
Advisor: Matias Cattaneo
Research Interests: Mathematical statistics, theoretical machine learning, causal inference, econometrics.

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-Economics — *2015–2019*
Honors Thesis: *Energy-aware optimization of scalable load balancing strategies*
Advisor: Kavita Ramanan.

London School of Economics and Political Science — **London, England**
Summer school certificate — *2016*

Research

Preprints

Convergence Rates of Oblique Regression Trees for Flexible Function Libraries — **arxiv:2210.14429**
Annals of Statistics, revise and resubmit
Joint work with Matias Cattaneo and Jason Klusowski

Boundary Adaptive Local Polynomial Conditional Density Estimators — **arxiv:2204.10359**
Bernoulli, revise and resubmit
Joint work with Matias Cattaneo, Xinwei Ma and Michael Jansson

`lpcde`: **Local Polynomial Conditional Density Estimation and Inference** — **arxiv:2204.10375**
Joint work with Matias Cattaneo, Xinwei Ma and Michael Jansson

Working Papers

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

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

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

Software and Programming Skills

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

Teaching Experience

Graduate Assistant in Instruction — **Princeton, NJ**
ORFE, Princeton University — *2020-Present*
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).
First-year Ph.D. general exam mentoring for ORF524 (2021).

Senior Thesis Writer's Group Co-Leader **Princeton, NJ**
ORFE Department, Princeton University *2020-2023*
Mentor 4th year undergraduate students in the ORFE department with thesis research and writing.

Undergraduate Teaching Assistant **Providence, RI**
Applied Mathematics Department, 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

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

Work Experience

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

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

Conferences

Joint Statistical Meeting **Toronto, CA**
Topic-contributed session on decision trees and random forests *August 2023*
Convergence Rates of Oblique Regression Trees for Flexible Function Libraries

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

Jane Street **New York City, NY**
Graduate Research Fellowship Workshop *April 2023*
Convergence Rates of Oblique Regression Trees for Flexible Function Libraries

Symposium for Undergraduates in Mathematical Sciences (SUMS) **Providence, RI**
Brown University *2018, 2019*
Talk based on research done during REU in 2018. Talk based on undergraduate honors thesis in 2019.

Joint Mathematics Meeting **Baltimore, MD**
AMS, MAA *2018, 2019*
Presented research work done at WPI REU in 2018. Presented results of research done at CSU REU in 2019.

Women in Mathematics in New England (WIMIN) **Northampton, MA**
Smith College *September 2018*
Talk based on research done during REU at WPI.

MIST Workshop **Worcester, MA**
WPI, Applied and Industrial Mathematics Institute for Secondary Teaching *July 2018*
Talk based on research done during REU at WPI.

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)