Rajita Chandak

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Education

Princeton University   **Princeton, NJ, USA**
Ph.D. in Operations Research and Financial Engineering   *2019–Present*
Ph.D. Candidate in the Operations Research and Financial Engineering (ORFE) Department.
Advisor: Dr. 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   *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: Dr. Kavita Ramanan.

Research

Preprints

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

Boundary Adaptive Local Polynomial Conditional Density Estimators   **arxiv:2204.10359**
Joint work with Matias Cattaneo, Xinwei Ma and Michael Jansson, R& R at Bernoulli
Companion software article: arxiv:2204.10375

Software

R packages: **lpcde**   Python packages: **lpdensity**, **rddensity**

Manuscripts

Undergraduate Honors Thesis   **Brown University**
Department for Applied Mathematics   *2018-2019*
Title: *Energy-aware optimization of scalable load balancing strategies.*
Advisor: Dr. Kavita Ramanan.

NSF Research Experience for Undergraduates (REU)   **WPI**
Center for Industrial Mathematics and Statistics, Worcester Polytechnic Institute (WPI)   *2018*
Advisors: Dr. Marcel Blais and Dr. Stephan Sturm
Research sponsored by NSF on financial modelling with industry liaisons Doherty Advisors LLC and State Street Global Services. (*Award DMS 1757685*)

NSF Research Experience for Undergraduates (REU)   **California State University, Chico**
Math Department, CSU Chico   *2017*
Advisor: Dr. Ben Nolting.
Research sponsored by NSF on stochastic processes. (*Award NSF 1559788*)

Teaching Experience

Graduate Assistant in Instruction   **Princeton, NJ**
ORFE Department, Princeton University   *2020-Present*
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).

Senior Thesis Writer's Group Co-Leader   **Princeton, NJ**
ORFE Department, Princeton University   *2020-2023*
Host programming workshops and office hours to support 4th year undergraduate students in the ORFE department with thesis research, development and writing.

Undergraduate Teaching Assistant   **Providence, RI**
Applied Mathematics Department, Brown University   *2017 – 2019*
TA for Dr. Debankur Mukherjee's APMA1720: Monte Carlo Simulations with Applications to Finance (Spring 2019),
TA for Dr. Srikar Prasad's MPA2065:Intro. to Data Science for the Masters of Public Affairs program (Spring 2018),
TA for Dr. Ben Kunsberg's APMA 1650 (Fall 2017).

Programming Skills

Advanced Proficiency: R, Python, Latex, Matlab, Mathematica
Intermediate Proficiency: C++, STATA, Java, HTML, CSS

Awards

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

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*
Delivered a talk based on research done during REU at CSU, Chico in 2018. Delivered a talk based on undergraduate honors thesis in 2019.

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

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

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

Peer Review

Served as a reviewer for: Journal of the American Statistical Association, Econometric Theory, Operations Research, Journal of Causal Inference.

Languages

English: Native Proficiency   **Hindi:** Native Proficiency