

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

Publications

Boundary Adaptive Local Polynomial Conditional Density Estimators

[Arxiv Preprint](#)

Joint work with [Matias Cattaneo](#), [Xinwei Ma](#) and [Michael Jansson](#)

Developed a new local polynomial kernel density estimation method. Proved uniform consistency and inference procedures using strong approximation methods. Paper, companion R package, and software article information available [here](#).

Convergence Rates of Oblique Regression Trees for Flexible Function Libraries

[Arxiv Preprint](#)

Joint work with [Matias Cattaneo](#) and [Jason Klusowski](#)

Working paper on consistency of oblique regression trees.

Software

lpcde: R package Maintainer

lpdensity: Python package maintainer

rddensity: Python package maintainer

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](#).

Thesis on understanding stationary behaviour of TABS scheme under general service time distribution and identifying parameters to achieve greater efficiency and lower energy costs. Analysed long term stationary behaviour of the system under the TABS scheme through limit theorems. Simulations programmed in Matlab.

NSF Research Experience for Undergraduates (REU)

Worcester Polytechnic Institute

Center for Industrial Mathematics and Statistics, Worcester Polytechnic Institute

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)

Doherty Advisors LLC Project: Created options pricing model for VIX and TYVIX with real-time data scraping from Bloomberg Terminal for investment strategies. Programming in Python and R.

State Street Project: Worked on methodology to automate trade exception processing with the use of machine learning tools. All programming done in Python.

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. Developed spatial point analysis of racially segregated communities and environmental justice factors using 2010 Census and EPA data. (*Award NSF 1559788*)

Teaching Experience

Graduate Assistant in Instruction

ORFE Department, Princeton University

ORF 524: Statistical Theory and Methods (Fall 2021, Fall 2022),

ORF 245: Fundamentals of Statistics (Fall 2020, Spring 2021).

Princeton, NJ

2020-Present

Senior Thesis Writer's Group Co-Leader

ORFE Department, Princeton University

Host programming workshops and office hours to support 4th year undergraduate students in the ORFE department with Thesis research, development and writing.

Princeton, NJ

2020-Present

Undergraduate Teaching Assistant

Applied Mathematics Department, Brown University

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).

Providence, RI

2017 – 2019

Tutor Leader and Peer Tutor

Member of Tutor Advisory Board, Dean of the College, Brown University

Providence, RI

2017–2019

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

Princeton University

2022

Conferences

Symposium for Undergraduates in Mathematical Sciences (SUMS)

Brown University

Delivered a talk based on undergraduate honors thesis.

Providence, RI

20 March, 2019

Joint Mathematics Meeting

AMS, MAA

Presented results of research done during REU at WPI.

Baltimore, MD

16-19 January, 2019

Women in Mathematics in New England (WIMIN)

Smith College

Delivered a talk based on research done during REU at WPI.

Northampton, MA

22 September, 2018

MIST Workshop

WPI, Applied and Industrial Mathematics Institute for Secondary Teaching

Delivered a talk based on research done during REU at WPI.

Worcester, MA

16 July, 2018

Symposium for Undergraduates in Mathematical Sciences (SUMS)

Brown University

Delivered a talk based on research done during REU at CSU, Chico.

Providence, RI

17 March, 2018

Joint Mathematics Meeting

AMS, MAA

Presented research work done during REU at CSU, Chico.

San Diego, CA

9-13 January, 2018

Languages

English: Native Proficiency

Hindi: Native Proficiency