

# Rajita Chandak

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## Education

### Princeton University

*Ph.D. in Operations Research and Financial Engineering*

Ph.D. Candidate in the Operations Research and Financial Engineering (ORFE) Department.

Advisor: [Matias Cattaneo](#)

Research Interests: Mathematical statistics, causal inference, econometrics.

Princeton, NJ, USA

2019–Present

### Princeton University

*M.A. in Operations Research and Financial Engineering*

Princeton, NJ, USA

2019–2021

### Brown University

*Sc.B. with Honors in Applied Mathematics-Economics*

Honors Thesis: *Energy-aware optimization of scalable load balancing strategies*

Advisor: [Kavita Ramanan](#).

Providence, RI, USA

2015–2019

## Research

### Publications

#### Boundary Adaptive Local Polynomial Conditional Density Estimators

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 and companion R package information available [here](#).

### Working Papers

#### Consistency of Oblique Regression Trees

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

Working paper on consistency of oblique regression trees and forests.

### Software

**lpcde**: Maintainer

**lpcdensity**: Python package maintainer

**rddensity**: Python package maintainer

### Manuscripts

#### Research Experience for Undergraduates (REU)

Worcester Polytechnic Institute

*Center for Industrial Mathematics and Statistics, Worcester Polytechnic Institute*

2018

8-week summer research sponsored by NSF on financial modelling under the mentorship of [Marcel Blais](#) and [Stephan Sturm](#) and 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.

#### Research Experience for Undergraduates (REU)

CSU Chico

*California State University, Chico*

2017

7-week research sponsored by NSF on stochastic processes with Ben Nolting. Developed spatial point analysis of racially segregated communities and environmental justice factors using 2010 Census and EPA data. All programming done in Mathematica. (Award NSF 1559788)

## Teaching Experience

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### 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. Ben Kunsberg's APMA 1650 (Fall 2017).

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).

Providence, RI

Fall 2017, Spring 2019

### Tutor Leader and Peer Tutor

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

Tutored for ECON1110 Intermediate Microeconomics, ECON1210 Macroeconomics and ECON1629 Research Methods courses throughout the academic year. I organized monthly check-ins with and provided support to other Economics tutors.

Providence, RI

2017-2019

## Programming Skills

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**Advanced Proficiency:** Python, R, Latex, Matlab, Mathematica

**Intermediate Proficiency:** C++, STATA, Java, HTML, CSS

## Conferences

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### Joint Mathematics Meeting

AMS, MAA

Presented results of research done during REU at WPI (Summer 2018)

Baltimore, MD

16-19 January, 2019

### Graduate Research Opportunities for Women

University of Michigan

Ann Arbor, MI

26-28 October, 2018

### 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

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**English:** Native Proficiency

**Hindi:** Native Proficiency