#### Education

#### The Wharton School

PhD Student in Operations, Information, and Decisions

Philadelphia, PA September 2022 -

# University of Pennsylvania

 ${\rm BA}$  in Mathematical Economics, Minor in Statistics

Philadelphia, PA September 2019 - May 2022

GPA: 3.92

## Colgate University

Hamilton, NY

GPA: 3.93

September 2018 - May 2019

# Research Experience

## Works in Progress

"Reforming Police Misconduct Investigations." With Bocar Ba, Dean Knox, Rachel Mariman, Jonathan Mummolo and Maria Aranzazu Rodriguez Uribe.

Using unique access to an archive of administrative records on civilian complaints
against police, this multi-wave experimental study seeks to assess how Philadelphia residents understand and perceive the current civilian complaint process,
and systematically evaluate the impact of transparency initiatives on civic engagement and public trust in police.

"Computational Analysis of Police Body-worn Camera Footage." With Olga Russakovsky, Dean Knox, Jonathan Mummolo, and Brandon Stewart.

 By developing a novel system using computational techniques for audiovisual analysis to convert body-worn camera footage into written timelines (akin to movie scripts), this project aims to provide detailed, moment-to-moment accounts of police-civilian encounters. The new system will provide an entirely new perspective on police-civilian interactions beyond traditional officer-generated reports, which will enable more effective supervision and accountability for misconduct.

"ffgrep: Scalable Approximate String Matching." With Dean Knox and Christopher Lucas.

Approximate substring searching is a common but computationally demanding
task in bioinformatics and text analysis. We present a new approach that recasts
string search as a multiple convolution problem, then exploits highly efficient
fast Fourier convolution techniques. This approach, which we call ffgrep, computes and caches the spectra of a target corpora, drastically reducing the cost of
subsequent searches.

#### Senior Thesis

Advisors: Margaux Luflade and Jere Behrman

"Do Students From Elite High Schools Apply to College Differently: Evidence from Tunisia."

• Using nationwide administrative data from Tunisia, I model high school students' college application behavior. I utilize a sharp discontinuity in the Tunisia education system to create a dataset of similar students who either attend an elite high school or attend a local high school. Using this dataset I estimate application behavior using an ordered logit model, testing for a difference in parameters between the two groups.

Work Experience Miami-Dade Police Department

Researcher in Residence

Miami, FL Summer 2022

**Bates White Economic Consulting** 

Summer Consultant

Washington, DC Summer 2021

Wharton Analytics Consultants

Analyst

Philadelphia, PA January 2020-December 2020

Penn Wharton Budget Model

Research Assistant

Philadelphia, PA Summer 2020

Relevant Coursework **Economics** Writing Seminar in Economics, Intermediate Microeconomics, Intermediate Macroeconomics, Independent Study, Honors Seminar, Microeconomic Theory\*, Experimental Economics\*

**Statistics** Statistics for Economists, Econometrics, Probability, Statistical Learning & Causal Inference, Applied Econometrics (1 & 2)\*, Applied Regression and Analysis of Variance\*, Stochastic Models\*

Math Calculus II, Calculus III, Linear Algebra & Differential Equations, Real Analysis (1 & 2), Computational Linear Algebra\*

Computing and Optimization Computer Programming, Programming Languages and Techniques, Linear, Nonlinear, and Integer Optimization\*

(\* indicates graduate level)

Skills

**Programming** Proficient in R and Python (as well as associated machine learning and data analysis packages). Intermediate in Stata, Java, and OCaml.

Computer Proficient in LATEX. Comfortable with CSS, HTML, Git

Language Native in English, Limited Working Proficiency in Spanish

Other

Cross Country and Track, Colgate University

Hamilton, NY

Division 1 Varsity Athlete

• Scoring member of team at 2019 Patriot League Indoor Championships