Gregory Lanzalotto

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Education

University of Pennsylvania Philadelphia, PA
BA in Mathematical Economics, Minor in Statistics May 2022
GPA: 3.91

Colgate University Hamilton, NY
GPA: 3.93 September 2018 - May 2019

Research Experience

Research on Policing Reform and Accountability: Philadelphia, PA
Advisor: Dean Knox December 2020 -
`https://policingresearch.org/`

Co-author for "Reforming Police Misconduct Investigations." Joint with Ba, Bocar, Dean Knox, Rachel Mariman, Jonathan Mummolo and Marıa Aranzazu Rodrıguez Uribe.

My role on this project is working in R to pre-process and analyze survey data.

- Geocoded database of 1.2 million addresses in Philadelphia with 95% success rate with Census API.
- Used Census API to find and download demographic data for every Census Block Group in Philadelphia, creating approximate demographics for every address successfully geocoded.
- Performed manual areal interpolation using non-congruent shape files for police districts and census block groups in Philadelphia. Using this process I was able to find the rate of police complaints per-capita in every CBG in the city.
- Created stratified sampling procedure to ensure representative samples when only sampling a small number of addresses. I used entropy reweighting to create sample weights for each block group based on their demographics compared to the city as a whole which ensured balanced samples.

RA for "Making Police-Citizen Interaction Safer: Large-Scale Computational Analysis of Visual Law Enforcement Records." Authors Olga Russakovsky, Dean Knox, Jonathan Mummolo, and Brandon Stewart.

My role on this project is to oversee and assess annotation of training data for a computer vision algorithm of police body-cam footage.

- Helped to manage a team of 10 Princeton undergraduates hired to perform annotations using an online tool.
- Created a script using Python to analyze the annotation performance of different users on different videos. The script compares two different users annotations on the same video, providing comparison summary statistics such as labels used, IOU score, and number of false positives, false negatives, true positives, and true negatives. This allowed me to calculate precision and recall scores to see how well annotations agreed on each video.
- Produced script by downloading JSON output of annotations and importing into Python. Also created a tool that overlaid both annotations on the same frame by pulling images from AWS database and reproducing annotations from the output JSON.
- Identified systemic problems in the annotation process with this algorithm and used the data it created to suggest improvements in the future.

Penn Wharton Budget Model: Philadelphia, PA
Advisor: Kent Smetters May 2020 - December 2020
`https://budgetmodel.wharton.upenn.edu/`

My research entailed using Python to create a online dashboard for basic statistical analysis of time series data. I worked along with a team of 3 on this programming task, using Python Dash to create the dashboard. The goal of the project was to build a web-based interface that could complete tasks such as regression analysis and graphing without having to know a programming language or excel. I worked on many aspects of the project:

- Implemented search function to pull data series from Penn Wharton Budget Model's internal database and the FRED database. Users could also upload their own data.
- Built database to manage numerous data series imported to the dashboard at the same time with different frequencies and source.
- Added functionality for regression analysis giving a STATA-like summary table of multiple regressions, a variable's statistical significance, and other summary statistics.
- Used Plotly to build an interactive graph of data series imported, allowing user to choose a time-frame, split axes, and visualize regression results. Created a feature to allow users to perform transformations on the data-series to be graphed as well.
- Worked on both the front-end UX programming, giving some experience in HTML, CSS, and web design, and the back-end, managing the database and providing different functionality to users. Also learned how to use Git and Version Control to manage a code-base for a large project with a team.
- Personally redesigned entire dashboard to provide a better experience to users and create a more visually appealing tool.

Independent Study and Senior Thesis in Economics: Philadelphia, PA
Advisor: Margaux Luflade

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

- Took an independent study with Professor Luflade to begin work on senior thesis. Also attended weekly sessions and completed assignments in PhD field class "Topics in Education" as part of independent study.
- Developed project which uses nationwide administrative data from Tunisia to estimate the differences in high school students' college application behavior based on if the student attends an elite high school.
- Utilizes sharp discontinuity in 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 intend to estimate application behavior using an ordered logit model, testing for a statistically significant difference in parameters between the two groups.

Work Experience

Bates White Economic Consulting Washington, DC
Summer Consultant Summer 2021

- Interned in the antitrust mergers practice at Bates White, working under Nicholas Hill.
- Provided services in antitrust compliance for a large hospital system with over $5.5 billion in revenue. I provided services for separate transactions at both the exploratory stage and the second request stage with the FTC.

- Used Stata to calculate market shares pre- and post-merger, summarized findings in Excel, and communicated technical information to clients with deliverables.

Wharton Analytics Fellows Philadelphia, PA
Analyst January 2020-December 2020

- Selected to work on two projects for Wharton analytics consulting group
- Used Python to build machine learning models using real world data to provide actionable insights to clients.
- Created a novel predictive model of individual player on field performance for a MLB team's analytics department.

Relevant Coursework

Completed: Microeconomic Theory (PhD), Topics in Education (PhD), Computational Linear Algebra (Master's), Probability Theory, Statistical Learning and Causal Inference, Intermediate Computer Science
In Progress/Intended: Applied Econometrics 1 & 2 (PhD), Real Analysis 1 & 2, Intro to Linear, Nonlinear and Integer Optimization (PhD), Honors Seminar in Economics

Skills

Computer: Proficient in R, Python, STATA. Intermediate in Java and OCaml. Comfortable with CSS, HTML, Git
Language: Native in English, Limited Working Proficiency in Spanish

Athletics

Cross Country and Track, Colgate University Hamilton, NY
Division 1 Varsity Athlete

- Scoring member of team at 2019 Patriot League Indoor Championships