Ethan Singer

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Education

Spring 2024 (Expected)

B.A. in Statistics and Computer Science; Minor in Public Policy Analysis
Boston University, Boston, MA, *GPA – 3.9/4.0*

Selected coursework. *Statistics:* Applied Statistics; Probability[g]. *Computer Science:* Applied Machine Learning[g]; Combinatoric Structures; Computer Systems. *Public Policy:* Climate Change and Development Policy; Educational Policy[g]. ([g] denotes graduate level course.)

Experience

Aug. 2020 - Present

Founder, *UmpScorecards,* @UmpScorecards and www.UmpScorecards.com
Conceived, developed, and operate the online platform @UmpScorecards, with over 300k followers and 350 million impressions, to assess the performance of Major League Baseball umpires. Utilize statistical models including Monte Carlo simulations and geometric models of pitch location to generate proprietary metrics and fully automated graphical scorecards. Featured in The New York Times, The Boston Globe, The Athletic, and other media outlets.

Summer 2022

Data Science Intern, *Thomson Reuters Special Services,* McLean, VA
Used natural language processing tools and neural networks to investigate the efficacy of generating author embeddings for Members of Congress based on speeches in the Congressional Record.

Spring 2022

Fellow, *Civin,* Boston, MA
Worked with numerous governmental open data APIs to build out stand-alone visualizations and dashboards with the product development team. Built API to programmatically and efficiently access multiple Census datasets to allow clients to quickly obtain and analyze local demographic data. Utilized Apache Supersets and Docker in the development process.

June 2021 - Dec. 2021

Data Science Intern, *BU Spark!,* Boston, MA
Conducted projects related to affordable housing, national eviction rates, and police overtime budgets. Analyzed Census, HUD, and numerous other complex datasets constructed through web scraping and other techniques. Worked with, and created data visualizations for, organizations and institutions including the ACLU, Associated Press, and the Massachusetts Legislature's Joint Committee on Housing.

Summer 2021

Associate Quantitative Analyst, *Philadelphia Phillies,* Philadelphia, PA
Developed new metrics to evaluate historical defensive performance by employing machine learning tools (tensorflow, MLflow) and probability models. Conducted extensive validation testing and created data visualizations to share findings, which allowed the organization to improve player and contract evaluation.

Teaching

Spring 2023

Course assistant, *CDS 290/292: Civic Tech Research Design and Toolkit*
Assisted in designing course materials, will host office and grade weekly problem sets and lab reports.

Fall 2022, Spring 2022

Course assistant, *CS 111: Intro to Computer Science*
Hosted office hours to provide academic support to students in python, coordinated course assistant grading schedules, and graded weekly problem sets and final exams.

Research

Fall 2022   **Member Embeddings**

Continuing work with the Thomson Reuters Special Services team to publish our work regarding the ideological scaling of Members of Congress using speeches on the Congressional Record and machine learning based natural language processing.

Fall 2022   **Redistricting and Segregation**

Working with Prof. Maxwell Palmer to investigate the extent to which legislative district lines are drawn along and across areas of segregataion in the United States.

Fall 2021, Summer 2022   **Absentee Ballots**

Awarded research grant through the BU UROP program. Worked with Prof. Maxwell Palmer to enhance available local-level population and voting data and improve robustness of election results across the U.S. Developed algorithms to approximate precinct boundaries, match election results to precinct shape files, and disaggregate absentee votes at the precinct level. Leveraged a national voter file and large-scale data science and GIS techniques.

Projects

Nov. 2022 - Dec. 2022   **Polling Simulator**

Developed an interactive polling simulator that allows users to explore polling error distributions after specifying population behaviors and desired polling methodologies. Based on user specifications, a synthetic population is generated, sampled, and polled. Finally, an election is simulated among the population, and the results are compared to the polling results.

Jan. 2021 - Feb. 2021   **County Level Election Simulator**

Built an interactive election simulator using d3.js that allows users to explore potential election scenarios if only counties that met certain criteria were included. Leveraged county-level voting data and Census demographic and population data.

Skills

Languages:	python, R, JavaScript, Java, HTML/CSS, SQL
Frameworks:	git, Docker, Django, R Markdown/Shiny, React.js, Bootstrap, Jekyll, Apache Supersets
Analysis:	pandas, geopandas, numpy, scikit-learn, tensorflow, MLflow
Visualization:	matplotlib, seaborn, plotly, Dash, d3.js, ggplot, Tableau, Adobe Illustrator