

Benjamin Scott Manning

2040 Market Street
Apt. 910
Philadelphia, PA 19103
Tel: +1 (603) 667 – 1213

Personal Website: manning.page
Github: [benjamin-manning](https://github.com/benjamin-manning)
Linkedin: [benjamin-manning](https://www.linkedin.com/in/benjamin-manning)
E-mail: beman@sas.upenn.edu

EDUCATION

Harvard University

Aug 2019 – May 2021

- Master in Public Policy at the Harvard Kennedy School, GPA: **3.87/4.00**
- Thesis: [Interactive Voice Response Systems for Low-Literate Farmers](#) – *High Pass Honors*

Washington University in St. Louis

Aug 2013 – May 2017

- Bachelor of Arts in Applied Mathematics, GPA: **3.79/4.00**
- Minor in Writing, *College Honors*

RESEARCH EXPERIENCE

University of Pennsylvania & California Institute of Technology – Researcher

Apr 2021 – Present

- Coded reinforcement learning algorithm to model teacher effort and student learning as a four-armed bandit problem in R and STAN – *with Colin Camerer & Marcos Gallo*
- Created hypotheses and developed surveys using Javascript and Qualtrics to investigate how people make different choices and predictions depending on how the elicitation is framed – *with Daniel Kahneman, Angela Duckworth, & Linnea Gandhi*
- Scraped online news platforms and library archives using Python to create a representative corpora to analyze changes in the formality of English over the past 100 years – *with Angela Duckworth, Lyle Ungar, & Jordan Ellenberg*
- Analyzed relationship between certain personality traits in the U.S. workforce and wages to examine how the rise of AI and automation over the past 15 years is displacing the need for certain interpersonal skills – *with Angela Duckworth, Christos Makridis, & Louis Hickman*
- Developed hypotheses and performed statistical analysis for a 17-condition mega study on the effect on student learning of email nudges sent to 400,000 elementary school teachers – *with Angela Duckworth, Colin Camerer & Others*

Harvard University & University of Chicago – Research Associate

May 2020 - Present

- Performed exploratory analysis of 19th and 20th century U.S. government records; scraped, cleaned, visualized, and analyzed data for millions of employees – *with Jon Rogowski*
- Identified trends in salary, demography, department size, and hiring bias through text analysis and statistical tests

Dartmouth College – Research Associate & Producer

Oct 2018 – Sep 2019

- Contributed to research through qualitative interviews of notable societal figures focused on leadership that developed into a podcast (The Sydcast) with over 20,000 downloads to date – *with Sydney Finkelstein*

TEACHING EXPERIENCE

University of Pennsylvania – Course Lead

Aug 2021 – Present

- Undergraduate Honors Research Seminar in Psychology with Prof. Angela Duckworth – *8 Students* – (Fall 2021)
- Taught weekly sessions on the philosophy of science, research methods, and statistics to support students' theses writing

Harvard University – Graduate Tutor

Jan 2020 – May 2021

- Tutored masters and doctoral students across multiple graduate schools in statistics and microeconomics

Harvard Kennedy School – Teaching Assistant

Jan 2020 – May 2021

- Applied Intensive Policy Seminar with Profs. Joe Aldy & Jack Donahue – *50 Students* – (Spring 2021)
- Econometrics II with Prof. Teddy Svoronos – *50 Students* – (Spring 2021)
- Markets and Market Failure with Prof. Christopher Avery – *40 Students* – (Fall 2020)
- Big Data for Politics with Prof. Benjamin Schneer – *35 Students* – (Spring 2020)

- Taught mathematics courses from pre-algebra to trigonometry in classes of up to 50 students (over 500 total) at a public school in rural Thailand
- Redeveloped curriculum in conjunction with Thai teachers that upheld the provincial standards of mathematical education, which were updated during my tenure, while maximizing exposure to English and mathematical concepts
- Coached varsity basketball team for high school traveling to tournaments around Thailand

- Tutored peers in Multivariable Calculus, Linear Algebra, Probability & Statistics, Differential Equations, and Biostatistics

ARTICLES IN PREPARATION

1. Makridis, C., Hickman, L., **Manning, B.**, & Duckworth, A. L. Earnings Are Greater and Increasing in Occupations that Require Intellectual Tenacity. Target: *Proceedings of the National Academy of Sciences*.
2. Gallo, M., **Manning, B.**, & Camerer, B. Applications in Reinforcement Learning: Teacher Effort and Student Learning As a Multi-Armed Bandit Problem. Target: *Proceedings of the National Academy of Sciences*.
3. Gandhi, L., **Manning, B.**, Duckworth, A. L., & Kahneman, D. Systematic Overconfidence in Psychological Hypothesis Development. Target: *Psychological Science*.
4. Duckworth, A. L., & **Manning, B.** et al. The Effects of Email Nudges Sent to Elementary School Math Teachers on Student Achievement. Target: *Proceedings of the National Academy of Sciences*.
5. **Manning, B.**, Duckworth, A. L., Ungar, L., Ellenberg, J. Changes in the Formality of English through the 20th and 21st Centuries. Target: *Computational Linguistics*.
6. Rogowski, J., **Manning, B.** Historical Employment Changes in the Composition of the United States' Government. Target: *American Journal of Political Science*.

PERSONAL SOFTWARE & CODING SAMPLES

1. [Research Methods in R Course Materials](#) - Cleaning, visualization, regression, factor analysis, mediation, and group testing
2. [Automatic Differentiation Package](#) - Computes exact derivatives with machine precision for any function with n-variables
3. [Linear & Ridge Regression Implementation](#) - Regression classes built from scratch with [visualization](#) and [scoring](#)
4. [Microbiome Analysis](#) - Predicting the relative abundances of bacteria in microbiomes from Ulcerative Colitis patients

HONORS & AWARDS

- High Pass Honors – Master's Thesis (2021)
- Kosciuszko Foundation Tuition Scholarship – Supports American students of Polish descent for graduate studies (2019)
- College Honors – Cumulative undergraduate GPA award (2017)
- Order of Omega – Honor society recognizing high standards of undergraduate leadership (2016)
- Dean's List – Semester undergraduate GPA award (Multiple Years)
- United Valley Micah Hero Award – For projects helping to "heal the world" in Uganda over the course of 10 years (2015)

SERVICE & ADDITIONAL WORK

- Pennsylvania Department of Transportation – Volunteer data scientist analyzing the efficacy of speed cameras put on streets in Philadelphia in order to lower rates of death and injury from vehicle crashes (2021 – Present)
- COVID Response Team – Volunteer helping Vermont residents get COVID vaccines and other necessities (2020 – Present)
- Big Brothers Big Sisters – Volunteer mentor for underprivileged students who aspire to attend college (2019 – 2021)
- VIPKID – Tutor teaching over 300 Chinese children English through online platform (2017 – 2020)
- Village2Village Project – Sponsor & Volunteer for program supporting orphans in rural Uganda (2009 – Present)

SKILLS

Programming:

Python; R; SQL; LaTeX; Version Control – Git; STAN; Command Line/Bash; Javascript; CSS; Qualtrics; C; Matlab

Languages:

Spanish – Limited Working Proficiency; Thai – Elementary Proficiency

Extracurricular:

Travel: 41 countries on 6 continents; soccer; guitar; saxophone; basketball; yoga; hiking; science fiction; Settlers of Catan