

Benjamin Henly Wittenbrink

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EDUCATION

Stanford University

- **M.S. in Computer Science**, concentration in Artificial Intelligence and Machine Learning, GPA: **4.00/4.00** **2023**
- **B.A.H in Economics with Honors** and **B.S. in Mathematics**, GPA: **3.99/4.00** **2022**
- Coursework: **Econ**: Micro, Macro, Econometrics, Graduate Econometrics, Honors Market Design, Graduate ML and Causal Inference, Graduate Political Economy, Graduate Mechanism Design, Financial Markets, Game Theory; **Math**: Honors Real Analysis, Linear Algebra, Probability, Stochastic Processes, ODEs, PDEs, Multivariate Calculus, Graph Theory, Combinatorics, Time Series; **CS**: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Reinforcement Learning, Graph ML, Foundation Models, Optimization, Algorithms, Systems, Blockchain, Computation Theory, Software Engineering.

University of Chicago Laboratory High School,

Unweighted GPA: **3.96/4.00** **2017**

RESEARCH & WORK EXPERIENCE

Quantitative Researcher & Data Scientist, QuantCo

Sept. 2023 – present

- Quantify uncertainty of large e-commerce pricing model, construct conditionally valid prediction intervals using conformalized quantile regression with gradient-boosted decision trees; estimate price elasticities from randomized experiment we designed.

Research Assistant, Prof. Matthew Gentzkow, Stanford Dept. of Economics

July 2022 – June 2023

- Lead co-author on paper analyzing large-scale social media deactivation experiment on emotional wellbeing; non-lead author on papers on effects of social media on political outcomes, effectiveness of digital advertising; worked on all aspects of projects.

Quantitative Research & Data Science Intern, QuantCo

Oct. 2020 – Aug. 2021

- Design choice model, statistical algorithm to optimize claims network steering, balance global cost with local volume objectives; oversee project from initial development to deployment; estimate cost, treatment effect models; assist in data migration to GCP.

Research Assistant, Profs. Mark Duggan & Gopi Goda, National Bureau of Economic Research

June – Oct. 2020

- Co-author paper on minimum wage effects on SSI/OASDI enrollment, applications: write up results, prepare for submission.

Summer Analyst, New York Federal Reserve Research & Statistics

June – Aug. 2020

- Conduct geospatial analysis on whether banks, mortgage lending accurately price in systematic climate disaster risk.

Research Assistant, Prof. Mark Duggan, Stanford Dept. of Economics

Sept. 2018 – June 2020

- Conduct analysis of minimum wage increases on SSI/OASDI enrollment, applications using border-county variation (co-author); evaluate spatial allocation of DoD contracts during budget sequester.

Data Science Intern, QuantCo

June – Sept. 2019

- Estimate heterogeneous treatment effects using machine learning methods; build data, model monitoring dashboard in Flask.

Research Assistant, Prof. Howard Nusbaum, University of Chicago Dept. of Psychology

June – Sept. 2018

- Co-author EEG study testing whether individual neural activity can forecast market-level crowdfunding outcomes.

Research Assistant

2018 – 2019

- Prof. Rebecca Diamond (Sept. 2018 – Feb. 2019); Prof. John List (June – Sept. 2018); Prof. Jonathan Rodden (Jan. – June 2018).

PAPERS & PUBLICATIONS

The Effects of Social Media Deactivation on Emotional State, lead author with Allcott & Gentzkow et al., *in progress*.

The Effects of Political Advertising on Facebook and Instagram, non-lead author with Allcott & Gentzkow et al., *in preparation*, 2023.

The Effects of Facebook and Instagram on the 2020 Election, non-lead author with Allcott & Gentzkow et al., *in preparation*, 2023.

Single-Trial Visually Evoked Potentials Predict Both Individual Choice and Market Outcomes, with Veillette et al., *Scientific Reports*, 2023.

Analyzing Candidates' Ideological Messaging Throughout the Electoral Cycle, *Stanford Department of Economics Honors Theses*, 2022.

The Minimum Wage and Social Security Disability Insurance, with Duggan and Goda, *Working Paper*, 2021.

SELECTED COURSE PROJECTS

Redistribution with Prices, Rationing, and Queuing, 2023.

Spotify Graph Neural Recommender Systems, 2023.

Minesweeper: A Reinforcement Learning Approach, 2023.

Predicting Maternal and Infant Health Outcomes in Western Africa using Satellite Images, 2022.

An NLP Approach to Understanding Patent Acceptance Criteria, 2022.

On the Convergence and Clustering Dynamics of the Hegselmann-Krause System, 2022.

Using Images to Predict Work-from-Home Shocks, 2022.

Predicting Kickstarter Project Success with Machine Learning, 2021.

HONORS

Anna Laura Myers Prize for Outstanding Honors Thesis, 2022.

Best Project Poster, Audience Selection, *CS 224N: NLP with Deep Learning*, 2022.

CS 224W & PyG Featured Project, *CS 224W: Machine Learning with Graphs*, 2023.

Best Data Visualization Article, *Stanford Daily Volume 257*, 2020.

First Place, SIEPR Hackathon, 2019 (Second Place, 2018).

ACTIVITIES

Student Collaborator, Mercedes Research & Development, 2023.

Peer Advisor, Stanford Economics Department, 2019 – 2022.

Staff Writer, Stanford Daily Data Team, 2020 – 2021.

Director of Analytics; Fellowships and Public Policy Forum Member, Stanford in Government, 2018 – 2020.

Senior Class Vice President, High School, 2016 – 2017.

Editor in Chief, High School Yearbook Journalism, 2016 – 2017.

SKILLS

Programming Languages: Python, R, SQL, C++, C, Julia, Stata, JavaScript, Java

Computer (Other): Git, LaTeX, AWS, GCP, Azure, PyTorch, TensorFlow, Excel, PowerPoint

Languages: English (native), German (full professional proficiency)