ARYAN ARORA

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EDUCATION

Carleton College 2020 – 2024
B.A. in Mathematics & Economics *Northfield, MN*

Magna Cum Laude, Phi Beta Kappa
Honors in Economics
GPA: **3.89/4.00**, Major GPA: **3.90/4.00**

RELEVANT COURSES

Carleton College:
Real Analysis, Complex Analysis, Abstract Algebra, Ordinary Differential Equations, Linear Algebra, Probability, Statistical Inference, Applied Regression Analysis, Intermediate Price Theory, Intermediate Macroeconomics, Econometrics, Mathematical Topics in Graduate Level Economics, Numerical Methods in Economics, Optimization Methods

Yale University (Audited):
Topics in Empirical Economics and Public Policy (Yusuke Narita, Max Cytrynbaum, and Charles Hodgson), Applied Empirical Methods (Paul Goldsmith-Pinkham)

WORK EXPERIENCE

Predoctoral Research Fellow July 2024 – present
Supervised by Profs. Winnie van Dijk and Scott Nelson *New Haven, CT*

Tobin Center for Economic Policy, Yale University

- Investigated the effects of eviction moratoria and rent-stabilization policies
  - Cleaned a transaction-level dataset, developed algorithms to identify rent payments, nonpayment, and residential location from raw financial records.
  - Designed validation tests and proposed empirical strategies to identify the causal effects of rent-stabilization and moratorium policies on rental nonpayment.
- Studied the equilibrium impacts of Right-to-Counsel programs
  - Rebuilt the Infutor analysis pipeline including implementing a "doughnut" difference-in-differences design.
  - Implemented a Bayesian Improved Surname Geocoding–based reweighting framework to match ACS population benchmarks.
- Examined drivers of eviction and nonpayment across local housing markets
  - Updated a handwritten bootstrap procedure to estimate standard errors for models linking application acceptance probabilities to subsequent payment and default outcomes.

Teaching Assistant September 2023 - March 2024
Assisted Prof. Jenny Bourne with Intermediate Price Theory *Northfield, MN*

Economics Department, Carleton College

- Top 2 out of 50 students in previous year's Price Theory course selected as TAs
- Led students through course material, designed practice questions, and consulted on pedagogy

Summer Research Assistant June 2023 – August 2023
Supervised by Dr. David Wiczer *Atlanta, GA*

Federal Reserve Bank of Atlanta

- Studied the effects of unemployment insurance and sources of inflation alongside Dr. David Wiczer
- Evaluated the effect of unemployment insurance on future earnings of recipients
  - Constructed a regression discontinuity plot to depict the impact of unemployment insurance on future earnings
  - Reduced processing time for a parameter search by parallelizing code in MATLAB
  - Proved, using real analysis knowledge, that as workers' bargaining power falls to 0, changes in wages come from changes to the outside option.
- Examined the sources of inflation in the labor and goods markets
  - Read *What caused the US pandemic-era inflation* by Blanchard and Bernanke (2023)
  - Wrote a research summary and identified research extensions
  - Followed up with a report explaining the underlying macroeconomic first principles
  - Generated correlograms in Python to find the optimal lag between model parameters

Research Intern November 2022 - December 2022
Externship with Eli Inkelas, RA for Dr. Bo Zhao *Boston, MA*

Federal Reserve Bank of Boston

- Used BLS, CPS, FRED, and IPUMS datasets while assisting with data cleaning in Stata

Research Assistant November 2022 - December 2022
Supervised by Prof. Nathan Grawe *Remote*

Carleton College

- Studied the effects of changes to the FAFSA financial aid formula on secondary wage earners' labor decisions under Prof. Nathan Grawe
- Ran least squares and logistic regressions in Stata on 10,000+ longitudinal data points

Research Assistant November 2021 - December 2021; June 2022 - August 2022
Supervised by Prof. Don Moore *Berkeley, CA*

Haas School of Business, University of California, Berkeley

- Investigated the predictability of job performance and overconfidence in LLMs under Prof. Don Moore
- Assessed the predictability of job performance among academics
  - Programmed infrastructure to manage over a billion observations from the OpenAlex database using SQL
  - Cleaned a subsample of 100,000 data points using Python (Pandas) and R
  - Worked with engineering faculty to understand server design and translated code from Python to R (and back)
- Examined whether large language learning models like GPT-3 are overconfident?

  - Collected data from the GPT-3 model and authored a report on my findings
- Studied whether there is a correlation between overconfidence & belief in conspiracy theories
  - Ran t-tests and co-authored a replication report that successfully refuted the original authors' results
  - Designed a Qualtrics survey and manually constructed a mean absolute deviation test in R
- Programmed a web scraper in Python (Beautiful Soup) to collect 1000 journalist emails for survey administration

Research Assistant June 2019 - July 2019
Supervised by Prof. Emma Seppälä *New Haven, CT*

Center for Emotional Intelligence, Yale University

- Coded over 2000 data points for a study examining the effectiveness of well-being interventions

WORKING PAPERS

Accelerated Science: Evidence from Pandemic-Era Economics Research

This paper examines how the COVID-19 pandemic reshaped the production and diffusion of economic research. Using a novel linked dataset that connects NBER working papers to OpenAlex bibliometrics and Altmetric attention traces, I track how pandemic-focused scholarship moved through academic, media, and policy channels. COVID-related papers accumulated citations nearly twice as rapidly in their first two years, moved through publication about six months faster, and received substantially more policy and media attention. These advantages, however, were front-loaded: citation rates converged within five years, and COVID papers were less likely to appear in top journals. Papers released earliest in the crisis captured a pronounced first-mover advantage. Pandemic papers were also shorter, cited fewer references, and scored markedly lower on indices I construct that summarize research documentation, empirical thoroughness, and differentiation within the literature. Those effects are particularly pronounced for the papers released earliest in the pandemic. Together, the results reveal a distinct mode of scholarship defined by speed, salience, and abbreviated execution—an accelerated science that expanded visibility but altered how research was produced and where it was shared.

A Date With Destiny: Relative Age Effects in High School and Beyond (Undergraduate Economics Thesis)

This paper examines the persistence of relative age effects. Using data on academic performance in high school, I investigate whether the well-documented benefits that students born earlier in the academic calendar receive in kindergarten and primary school persist into adolescence and adulthood. I conclude that relative age has a negligible effect on academic performance in high school and beyond, and potentially turns into an age penalty for older students. Notably, my results suggest that age has a sizable effect on decisions to drop out or go to college.

Beyond Arrow: Revealing True Preferences (Undergraduate Math Thesis)

In this paper, I examine the existence of strict strategy-proof voting mechanisms. Using Arrow's Impossibility Theorem I prove any rational social choice function that respects Pareto optimality, independence of irrelevant alternatives, and monotonicity must be dictatorial. Next, I use the Gibbard-Satterthwaite theorem to show that strategy-proof voting mechanisms are necessarily dictatorial. Then, I use the Gibbard-Satterthwaite correspondence theorem to establish a one-to-one correspondence between social choice functions under Arrow's construction and voting mechanisms under Gibbard and Satterthwaite's construction. Finally, I extend these results by considering other voting mechanisms and discussing Vickrey-Clarke-Groves mechanisms.

WORKS IN PROGRESS

Overconfidence and Reliance on LLMs (with Don Moore)

Large language models present a novel challenge for human judgment: they provide confident-sounding answers across domains while offering little signal about the reliability of their output. Unlike traditional decision aids that demarcate their competence, LLMs rarely acknowledge uncertainty. This creates a distinct environment for studying overconfidence as users must calibrate their reliance on AI assistance without the usual cues about when that assistance is trustworthy. This study examines whether interacting with LLMs systematically affects users' confidence in their own judgments, and whether users can appropriately discount LLM input when it is unreliable.

Cost-Effectiveness Analysis of SKY (with Jagpreet Chhatwal, H. Mert Sahinkoc, and William Meyerson)

Evidence abounds that our healthcare system faces a healthcare worker mental health crisis. This has prompted hospitals to pursue wellness interventions, but few have gained widespread traction because the well-studied medical benefits of these programs have not been translated into cost-effectiveness assessments. Hospitals wish to understand not just whether interventions improve well-being, but whether they justify their investment. In this paper, we develop a model that translates RCT evidence on well-being interventions into cost-effectiveness assessments for healthcare workers. We then apply this model to a recent RCT evaluating a particular modality of breathwork called the SKY breathing technique.

AWARDS

2024 Robert E. Will Prize in Economics — Northfield, MN
Awarded to the senior economics majors who demonstrate excellent academic achievement and breadth of intellectual interests in the best tradition of the liberal arts education.

2023 Dean's List — Northfield, MN
Awarded to students with an academic year GPA in the top 10% of their class.

2021 Mortar Board Prize — Northfield, MN
Awarded to a member of the previous first-year class who has achieved a distinguished grade point average.

TECHNICAL STRENGTHS

Programming	Julia, Python, R, Stata
Software	LaTeX
Languages	English (native), Hindi (fluent), Spanish (fluent)