MIT Economics

WHITNEY ZHANG

OFFICE CONTACT INFORMATION
MIT Department of Economics
77 Massachusetts Avenue, E52-470
Cambridge, MA 02139
zhangww@mit.edu
https://economics.mit.edu/people/phd-students/whitney-zhang

HOME CONTACT INFORMATION
143 Albany Street
Cambridge, MA 02139
Mobile: 408-607-6867

MIT PLACEMENT OFFICER
Professor Stephen Morris
semorris@mit.edu
617-253-5193

MIT PLACEMENT ADMINISTRATOR
Mrs. Shannon Robinson
shmay@mit.edu
617-324-5857

DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2027
DISSERTATION: "Essays in Labor Economics"

DISSERTATION COMMITTEE AND REFERENCES

Professor David Autor
MIT Department of Economics
77 Massachusetts Avenue, E52-438
Cambridge, MA 02139
dautor@mit.edu

Professor Daron Acemoglu
MIT Department of Economics
77 Massachusetts Avenue, E52-446
Cambridge, MA 02139
daron@mit.edu

Professor Sendhil Mullainathan
MIT Department of Economics
77 Massachusetts Avenue, E52-558
Cambridge, MA 02139
sendhil@mit.edu

Professor Danielle Li
MIT Sloan School of Management
77 Massachusetts Avenue, E62-484
Cambridge, MA 02139
d_li@mit.edu

Professor Frank Schilbach
MIT Department of Economics
77 Massachusetts Avenue, E52-560
Cambridge, MA 02139
fschilb@mit.edu

PRIOR EDUCATION

Massachusetts Institute of Technology 2021
S.B. Mathematical Economics, Minor in Computer Science

CITIZENSHIP USA **GENDER** Female

FIELDS Labor

TEACHING EXPERIENCE

Competitive Strategy Bootcamp (MBA, MIT course 15.906) 2025
Teaching assistant to Professor Danielle Li

Psychology and Economics (Undergraduate, MIT course 14.13) 2025
Teaching assistant to Professor Frank Schilbach

RELEVANT POSITIONS

Research advisor (short term contract), Mercor economics team	2026
Research assistant to Professor Nina Rousille	2023
Research assistant to Professor Jon Gruber	2022
Research assistant to Professor Heather Sarsons	2022
Summer analyst, Federal Reserve Bank of New York	2020

FELLOWSHIPS, HONORS, AND AWARDS

Schmidt Sciences AI at Work Program Grant ($30,000)	2026
Hausman Dissertation Fellowship, MIT	2025
Washington Center for Equitable Growth Early Career Grant ($15,000)	2025
George and Obie Shultz Fund Grant, MIT	2022-26
National Science Foundation Graduate Research Fellowship	2021

PROFESSIONAL ACTIVITIES

Referee: *Review of Economics and Statistics, AER: Insights, Journal of Labor Economics, Journal of the European Economic Association, Organization Science, Science Advances*

Service:
Organizer, MIT Labor Lunch
Organizer, MIT Labor Coffee
MIT-Harvard PhD Application Assistance & Mentoring Program

Seminars and Conferences:
OpenAI AGI Economy Conference (2026)
NBER SI Digital Economics and Artificial Intelligence, Zurich AI + Economics Workshop, Microsoft AI Cognition and the Economy (2023)

PUBLICATIONS

Interpreting TSLS Estimators in Information Provision Experiments (with Vod Vilfort), *AER:Insights,* 2025.

In information provision experiments, researchers often estimate the causal effects of beliefs on actions using two-stage least squares (TSLS). This paper formalizes exclusion and monotonicity conditions that ensure that TSLS recovers a positive-weighted average of causal effects. We assess common TSLS estimators for both passive and active control designs from the literature; we find that two commonly used passive control estimators generally allow for negative weights. The choice of passive control estimator affects the magnitude and significance of estimates in simulations and in an empirical application. We give practical recommendations for addressing these issues.

Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence (with Shakked Noy), *Science,* 2023.

We examined the productivity effects of a generative artificial intelligence (AI) technology, the assistive chatbot ChatGPT, in the context of midlevel professional writing tasks. In a preregistered online experiment, we assigned occupation-specific, incentivized writing tasks to 453 college-educated

professionals and randomly exposed half of them to ChatGPT. Our results show that ChatGPT substantially raised productivity: The average time taken decreased by 40% and output quality rose by 18%. Inequality between workers decreased, and concern and excitement about AI temporarily rose. Workers exposed to ChatGPT during the experiment were 2 times as likely to report using it in their real job 2 weeks after the experiment and 1.6 times as likely 2 months after the experiment.

Improving Commuting Zones Using the Louvain Community Detection Algorithm, *Economics Letters,* 2022. (Undergraduate thesis)

Well-defined commuting zones are essential for accurate research on US local labor markets. I improve upon currently used "ERS" commuting zones in two ways. First, I test multiple edge weights. Second, the algorithm to produce ERS commuting zones requires specifying a theoretically-unguided cutoff parameter; results may be sensitive to the parameter choice. Instead, I use the Louvain algorithm, which optimizes for "modularity", a graph-intrinsic parameter that is greater when there is higher intra-commuting zone flow and lower inter-commuting zone flow. Compared to ERS, my new delineations TS Louvain and Sum Louvain have 0.05 to 0.15 greater modularity, Sum Louvain has a 0.01 to 0.02 higher share of people who work and live in the same commuting zone, and in a case study, TS Louvain produces greater estimates and t-statistics. These metrics suggest that these new commuting zones improve upon the existing delineations.

RESEARCH PAPERS

Adversarial Hiring (Job Market Paper) (with Arjun Ramani)

Worker and firm technology choices increasingly intermediate the hiring process, yet little is known about their equilibrium consequences. We model screening as a game in which technology choices alter the information environment and firms endogenously set screening policies. The model distinguishes technologies that enhance the informativeness of applicant signals from those that erode them. We study two such technologies, applicant adoption of generative AI and firm adoption of automated assessments. We construct a new panel of interview processes tied to hiring outcomes covering nearly 10,000 firms comprising 12% of US employment. Tracking changes in workers' resumes over time, we find that AI-induced text homogenization erodes signal. In occupations with fewer AI-proof signals, firms respond by relying more on experience and credentials, sourcing candidates more through referrals and recruiters, intensifying interviews, and ultimately reducing the quantity and diversity of entry-level hires. Conversely, earlier firm adoption of automated assessments enhanced signals, facilitating increased hiring and improving diversity on some dimensions. Our results offer a unified account of how technology has changed hiring across two eras—including explaining one-quarter of the relative slowdown in entry-level hiring since 2022—and show that technology can reduce welfare in adversarial settings.

RESEARCH IN PROGRESS

Tacit Objectives: Human-AI Complementarity in Hiring
(with Arjun Ramani)

While algorithms play a critical role in initial screening, firms nevertheless still conduct human evaluations in hiring, especially for knowledge work roles. We hypothesize that this is because humans have private, tacit hiring objectives (e.g. culture fit) that are difficult to specify and therefore cannot be algorithmically replaced. In a partnership with a large technology firm, we study their rollout of an AI interview bot. The bot provides an additional early screening signal that the firm uses to determine who to select for human evaluations. By combining data on AI interview bot transcripts, human interview transcripts, human hiring decisions, and on-the-job performance, we analyze how humans and algorithms can serve complementary functions in the hiring process. We then generate counterfactuals to understand what the optimal design is for human interviews, conditional on algorithmic capabilities.

Unobservability and Underprovision of Amenities
(with Nathan Lazarus and Lucy Li)

We hypothesize that many important amenities are not known to workers ex-ante, and are only learned on-the-job. We theoretically show this distorts workers' job search and leads firms to underprovide amenities relative to wages. We test this hypothesis in three sources of data. First, in payroll data, we find that the quality of workers' schedules is correlated with worker retention, but not firms' ability to recruit workers. Second, using Brazilian administrative data, we build on the revealed preference approach of Sorkin (2018), and rank firms on both their ex-ante and ex-post valuations. We test whether amenities impact ex-post but not ex-ante valuations. Third, we use data from a gig work platform, where we observe worker ratings of jobs, but workers cannot see each other's ratings. We test whether workers are likely to accept low-rated jobs, but unlikely to return, indicating mistakes in job selection. Finally, we estimate the extent to which job quality is underprovided due to ex-ante amenity unobservability.