Whitney W. Zhang

CONTACT INFORMATION	Department of Economics Massachusetts Institute of Technology 77 Massachusetts Avenue, Bldg E52-300 Cambridge, MA 02139	*Phone:* (408) 607-6867 *E-mail:* zhangww@mit.edu *Web:* whitneyzhang.com

RESEARCH INTERESTS

Labor, public, behavioral

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

    Ph.D. Student, Economics

Massachusetts Institute of Technology, Cambridge, MA

    S.B., Mathematical Economics, Minor in Computer Science, May 2021

FELLOWSHIPS AND AWARDS

National Science Foundation Graduate Research Fellowship, 2021

Undergraduate: Rhodes Finalist and Phi Beta Kappa, 2021

WORK EXPERIENCE

Research Assistant to Professor Jon Gruber, MIT	2022
Research Assistant to Professor Heather Sarsons, University of Chicago	2022
Summer Analyst, Federal Reserve Bank of New York	2020
Research Assistant to Professor Jon Gruber, MIT	2019-2020
Research Assistant to Professor David Autor, MIT	2019-2020

PUBLICATIONS

"Improving Commuting Zones Using the Louvain Community Detection Algorithm." *Economics Letters,* October 2022.

    Well-defined commuting zones are essential for accurate research on US local labor markets. To develop commuting zones, one must construct edge weights – a measure of commuting flows between counties – and then use the edge weights to partition counties into clusters. I improve upon currently used "ERS" commuting zones in two ways. First, it is unclear if ERS commuting zones use the best edge weights. Therefore, 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. I call my new delineations "TS Louvain", which uses the ERS commuting flow definition to construct edge weights, and "Sum Louvain", which uses the total number of commuters as edge weights. Compared to ERS, 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. Researchers can access these commuting zone definitions at bit.ly/LouvainCZ.

WORKING PAPERS

"Experimental Evidence on the Productivity Effects of Large Language Models" (with Shakked Noy)

    We examine the productivity effects of a generative artificial intelligence technology—the assistive chatbot ChatGPT—in the context of mid-level professional writing tasks. In a preregistered online experiment, we assign occupation-specific, incentivized writing tasks to 444 college-educated professionals, and randomly expose half of them to ChatGPT.

Our results show that ChatGPT substantially raises average productivity: time taken decreases by 0.8 SDs and output quality rises by 0.4 SDs. Inequality between workers decreases, as ChatGPT compresses the productivity distribution by benefiting low-ability workers more. ChatGPT mostly substitutes for worker effort rather than complementing worker skills, and restructures tasks towards idea-generation and editing and away from rough-drafting. Exposure to ChatGPT increases job satisfaction and self-efficacy and heightens both concern and excitement about automation technologies.

RESEARCH IN PROGRESS	**"Survey Evidence on Job Search Methods"** (with Shakked Noy)	
	"Gamification and Information to Encourage Credit Card Debt Reduction" (with Andrew Komo)	
GRANTS	George and Obie Shultz Fund for "Minority vs. Non-Minority Beliefs on Employer Discrimination."	2022
	George and Obie Shultz Fund for "Survey Evidence on Job Search Methods" (with Shakked Noy)	2022
	George and Obie Shultz Fund for "Gamification and Information to Encourage Credit Card Debt Reduction" (with Andrew Komo)	2022
PROFESSIONAL AND PUBLIC SERVICE	MIT Graduate Economics Association Social Chair	2022-2023
	Harvard/MIT Application Assistance and Mentoring Program Mentor	2022
	MIT Economics DEI Committee Undergraduate Representative	2020-2021