

Emma Wiles (née van Inwegen)

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Academic Position & Affiliations

Assistant Professor, Boston University 2024-
Information Systems, Questrom School of Business
Digital Fellow, Initiative on the Digital Economy, Massachusetts Institute of Technology 2024-

Education

PhD Management Science, Massachusetts Institute of Technology 2019-2024
Dissertation title: *Artificial Intelligence in Labor Market Matching*
Committee members: *John Horton, Catherine Tucker, Dean Eckles*
MS Management Research, Massachusetts Institute of Technology 2019-2022
BA Mathematics, Economics, University of Washington 2011-2015

Teaching Experience

15.818 MBA Level Pricing (TA) Fall 2023
15.567 MBA Level Economics of Information: Strategy, Structure and Pricing (TA) Spring 2023
15.575 PhD Level Economics of Information and Information Technology (TA) Spring 2022
15.572 Analytics Lab: Action Learning Seminar on Analytics, Machine Learning and the Digital Economy (Mentor) Fall 2021

Professional Service

Conference on Digital Experimentation, Technical Committee 2020, 2021
Served as referee for:
Management Science, International Conference on Information Systems, Journal of Public Economics,
Economics of Education Review, Journal of Human Resources

Fellowships, Honors, and Awards

Microsoft Research Grant for *AI and the Future of Work* (\$50,000) 2023
Zenon S. Zannetos Memorial Fellowship (MIT) 2020-2023
MIT Graduate Student Fellowship 2019-2020

Publications

[Minimum Wage Increases and Low-Wage Employment: Evidence from Seattle](#) (with Ekaterina Jardim, Mark Long, Robert Plotnick, Jacob Vigdor, Hilary Wething) 2022. *Published in American Economic Journal: Economic Policy*

- Media coverage: The Economist, FiveThirtyEight, Los Angeles Times, New York Times, New York Times (The Upshot), Seattle Times, Washington Post

[Boundary Discontinuity Methods in the Presence of Policy Spillovers](#) (with Ekaterina Jardim, Mark Long, Robert Plotnick, Jacob Vigdor) 2022. *Published in the Journal of Public Economics*

Research in Progress

Job Market Paper: [Algorithmic Writing Assistance on Jobseekers' Resumes Increases Hires](#) (with Zanele Munyikwa and John Horton) 2023. NBER Working Paper 30886.
Minor Revision at Management Science

- Media coverage: MarketWatch, Business Insider, Yahoo News

There is a strong association between the quality of the writing in a resume for new labor market entrants and whether those entrants are ultimately hired. We show that this relationship is, at least partially, causal: a field experiment in an online labor market was conducted with nearly half a million jobseekers in which a treated group received algorithmic writing assistance. Treated jobseekers experienced an 8% increase in the probability of getting hired. Contrary to concerns that the assistance is taking away a valuable signal, we find no evidence that employers were less satisfied. We present a model in which better writing is not a signal of ability but helps employers ascertain ability, which rationalizes our findings.

[More, but Worse: The Impact of AI Writing Assistance on the Supply and Quality of Job Posts](#) (with John Horton) 2023.

We study a randomized experiment conducted on a large online labor market that prompted employers to use a Large Language Model to generate a first draft of their job post. Treated employers decrease time spent writing their job post by 40% and are 20% more likely to post the job. Among the posted jobs, treated employers receive 5% more applications but are 18% less likely to hire. We find no evidence that this is driven by treated employers receiving lower quality applicants. Moreover, despite the large increase in the number of jobs posted, there is no difference in the overall number of hires between treatment and control. We rationalize these results with a model in which employers with heterogeneous values of hiring can attract better matches by exerting effort to precisely detail required skills. We show how a technology that lowers the cost of writing and imperfectly substitutes for effort causes more posts, but lowers the average hiring probability through both marginal posts (as these are less valuable) and inframarginal posts (as the technology crowds out effort). Nonetheless, the technology increases employer welfare.

[Using AI to Upskill Non-Technical Workers into Data Science](#) (with Lisa Krayer, Mohamed Abbadi, Urvi Awasthi, Ryan Kennedy, Cristian Arnolds, Pamela Mishkin, Francois Candelon, Daniel Sack) 2024.

As firms integrate Large Language Models (LLMs) into their operations, concerns arise about their potential to automate tasks traditionally performed by workers. To remain employable, workers must adapt their skills to meet the changing demands of the labor market. While LLMs pose a risk to certain jobs, they also offer a means to “upskill” workers, by training workers in whatever new skills the market demands. In this study we investigate how LLMs can be used to help non technical knowledge workers “upskill” into data science roles. We run a randomized control trial on BCG consultants to test whether they can use LLMs to perform data science tasks at the level of a data scientist. We give these workers science problems, representative of what the data scientist role at the company demands, but which GPT-4 cannot solve on its own. We find that treated non-technical workers given access to and training in using ChatGPT are more likely to correctly solve all three tasks, and can perform at the level of real data scientists without GPT-4 on the coding task. These results suggest that LLMs can be used to help workers gain new skills to meet the evolving, more technical demands of the labor market, but that the work of non-technical workers is not interchangeable with data scientists’.

[Workers Responses to Price Uncompetitiveness: Evidence from a Field Experiment](#) (with Apostolos Filippas and John Horton)

If and how to regulate online marketplaces is an open question important to both platform designers and policy makers. Using a large field experiment in an online labor market, we analyze the effects of a platform minimum wage. Workers were randomly assigned individual price floors which prevented treated workers from bidding hourly rates below their floor. Workers for whom the floor was likely binding—those historically bidding below the floor—suffered a decline in job-finding probability(30%), but higher wages conditional upon being hired(9%). Treated workers made lower earnings overall, but higher earnings conditional on working at least one hour on the platform. Despite a job being “worth more” if hired, affected workers lowered their search intensity. They did not move to the “uncovered sector”—jobs with a fixed price rather than an hourly wage, nor did they direct

their search to better fitting jobs. They were also more likely to exit the platform. After the conclusion of the experiment, the platform rolled out the \$3 per hour minimum wage platform wide, allowing us to observe the the employment outcomes and job search behavior in equilibrium.

Make-or-buy for recruiting?: Experimental Evidence on Helping Firms Hire, *Masters Thesis*

In a randomized control trial, a large online labor market randomly provided hiring assistance to employers. This hiring assistance could take the form of (a) expanding the firm's choice set by attracting more applicants or (b) helping them choose among that choice set, based on the determination of the helper. Broadly speaking, job openings with few applicants were given recruiting help, while openings with many applicants were given selection help. All were given general advice on the hiring process. We find that while treated employers increased their search efforts and received more applications, they were no more likely to make a hire than job posts in the control group. We find evidence that treated employers demand less labor from their hires—suggesting that employers know their own preferences better than third party assistance.

[Payroll, revenue, and labor demand effects of the minimum wage](#) (with Ekaterina Jardim) 2019. *Upjohn Institute of Employment Research Working Paper*. 19-298

We study the effects of a large increase in Seattle's minimum wage on business churn, hours, and revenue using Washington State administrative data. We find the minimum wage affected businesses both at the intensive and extensive margins. At the intensive margin, surviving businesses increased labor costs without decreasing hours and saw no reductions in revenue. At the extensive margin, businesses experienced higher rates of exit and newly opened businesses became less labor-intensive. We find the total effect of the minimum wage to low-wage employment, defined as jobs paying 130% of the minimum wage or less, came from changes to the composition of businesses.

Understanding the Effects of AI-coders on Skill Evolution & Job Trajectories in an Online Labor Market (with Apostolos Filippas and John Horton) Funded by Microsoft Research Grant for *AI and the Future of Work*

Invited presentations

Columbia's Management, Analytics, and Data Conference	2024
National Association for Business Economics Tech Economic Conference Lightning Talk	2023
Wharton, Conference on Business & AI Presentation	2023
NBER Summer Institute Digital Economics and AI Lighting Round Talk	2023
Conference on the Economics of Information & Communication Technologies Presentation	2023
ASSA/AEA, Labor and Employment Relations Association Presentation	2023
NBER Digitization Tutorial	2022
NBER Economics of Privacy Conference	2022
INFORMS, Platforms Presentation	2022
Workshop on Information Systems (WISE) & Economics, Platforms Presentation	2022
Conference on Digital Experimentation, Presentation	2020

Personal Details

Language: English (Native)
Citizenship: USA