Mingyang Sun

msun43@jhu.edu 443.248.6563 Johns Hopkins University, Baltimore, MD

January 30, 2025

Committee Members
NBER Innovation Research Boot Camp
1050 Massachusetts Avenue
Cambridge, MA 02138

Dear Committee Members,

I am writing to express my strong interest in attending the NBER Innovation Research Boot Camp. As a graduate researcher specializing in technological innovation, labor market dynamics, industrial organization, and behavioral economics, I am eager to deepen my methodological expertise and engage with scholars whose work has shaped these fields.

My research explores how technological advancements influence economic outcomes through two projects. The first examines the effects of Amazon's entry into third-party merchant product spaces, modeling entry likelihood and assessing its impact on market competition and innovation. The second investigates how employee beliefs shape workforce adaptation in response to artificial intelligence (AI), integrating behavioral insights with labor market trends. Both projects employ empirical methods to address pressing questions at the intersection of innovation and economic policy.

The boot camp's intensive training in the Economics of Innovation will strengthen my empirical skills and provide valuable insights for my research. I am particularly excited to engage with NBER faculty specializing in firm strategy and AI to refine my empirical approach, such as Professor Benjamin F. Jones whose work on innovation, AI, and economic growth has influenced my approach to studying workforce adaptation and platform competition. His insights on AI-driven productivity and economic dynamism align closely with my interests, and I hope to build on these ideas using empirical methods to examine how firms and workers respond to technological disruption. Beyond methodological training, the boot camp will foster academic collaborations and expose me to fresh perspectives on innovation policy, firm strategy, and technological change, helping position my research within broader scholarly discussions.

For this application, Professor Michael Luca has kindly agreed to provide a letter of recommendation in support of my candidacy. I look forward to contributing my insights and engaging in discussions at the boot camp, applying its knowledge to my ongoing research and future projects.

Sincerely,

Mingyang Sun
Applicant

MINGYANG SUN

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RESEARCH INTERESTS

Technological Innovation, Economics of Digitization, Labor Economics, Industrial Organization.

EDUCATION

Johns Hopkins University, Baltimore, MD *2023 - Present*
Ph.D. in Economics (Expected 2029)
M.A. in Economics

University of Chicago, Chicago, IL *2020 - 2022*
M.A. in Social Sciences, Economics; GPA: 3.7/4.0

Nankai University, Tianjin, China *2016 - 2020*
B.A. in Economics, with High Distinction; GPA: 3.85/4.0

RESEARCH EXPERIENCE

Research Assistant, Johns Hopkins University, Carey Business School *2024*
With Professor Michael Luca

- Collected and analyzed data from online platforms to evaluate regulatory impacts.
- Led literature review on default settings and their effects on consumer behavior.

Research Assistant, National University of Singapore, Business School *2022 - 2023*
With Professor Tianyue Ruan

- Performed data analysis and created visualizations for research projects on racial disparities in personal loan origination.
- Applied Python-based machine learning models for predictive analysis on loan models.
- Investigated the impact of school district redrawing policy on house prices and education inequality.

Graduate Student Researcher, University of Chicago *2022*

- Authored MA thesis examining yield curve dynamics in the U.S. and China.
- Managed research design, literature review, data collection, and thesis writing.

Quantitative Analyst, Shanghai Stock Exchange, Shanghai, China *2019*
Summer Internship Program

- Developed macro risk early warning model, contributing to policy recommendations.

Research Assistant, University of California, Berkeley *2018*
Undergraduate Research Apprentice Program

- Synthesized privacy research, contributing to public knowledge through a published Wikipedia article based on peer-reviewed sources.

FELLOWSHIPS, HONORS & AWARDS

- Phoenix Research Award Scholarship ($20,880), The University of Chicago *2020*
- First Prize Scholarship (Top 5% based on academic excellence), Nankai University *2019*
- National Scholarship for Studying Abroad ($10,000) *2018*
- Academic Merit Scholarship (Top 15% based on academic excellence), Nankai University *2018*
- Honorable Mention, Mathematical Contest in Modeling *2018*

TECHNICAL STRENGTHS

IT: MATLAB, R, Stata, Python, QGIS, LaTeX
Language: English (Fluent), Mandarin (Native), Japanese (Basic)

GRADUATE COURSEWORK

- **Microeconomic Theory I & II**
- **Mathematical Thinking and Reasoning**
- **Macroeconomic Theory I & II**
- **Statistical Inference; Econometrics**
- **Labor Economics I & II**
- **Industrial Organization I & II**
- **Microeconometrics I; Macroeconometrics I**
- **Topics in Applied Microeconometrics**

REFERENCES

Professor Michael Luca

Johns Hopkins University, Carey Business School

mluca@jhu.edu

JOHNS HOPKINS
UNIVERSITY

ZANVYL KRIEGER SCHOOL OF ARTS & SCIENCES
Baltimore, MD 21218 www.jhu.edu/registrar

GRADUATE INTERNAL TRANSCRIPT

Student Name	Person ID	Date of Birth	JHU Degree and Date Conferred	Date Printed
Sun, Mingyang	42DAC7	01/26/xxxx	xxxxx	1/18/2025

Date Of Admission	Major		Page 1 of 1
August 2023	Economics		
Advisor		Year of Study	
Duffee, Gregory R		Graduate	

DIV	DEPT	CRSE #	COURSE TITLE	GRADE	CLASS HOURS	LAB HOURS	CREDITS
Fall 2023							
AS	ECON	180.601	Microeconomic Theory I	A-			3.0
AS	ECON	180.603	Macroeconomic Theory I	A			4.0
AS	ECON	180.609	Mathematical Thinking and Reasoning	A			4.0
AS	ECON	180.636	Statistical Inference	A-			3.0
AS	IDEP	360.603	Grad Orientation & Academic Ethics	P			
Spring 2024							
AS	ECON	180.602	Microeconomic Theory II	B+			3.0
AS	ECON	180.604	Macroeconomic Theory II	A-			4.0
AS	ECON	180.633	Econometrics	A			3.0
Summer 2024							
AS	ECON	180.891	Dissertation Research	P			10.0
Fall 2024							
AS	ECON	180.637	Microeconometrics I	A			3.0
AS	ECON	180.651	Labor Economics I	A			3.0
AS	ECON	180.671	Industrial Organization	A-			3.0
AS	ECON	180.697	Research Seminar	P			1.0
AS	ECON	180.896	Research Practicum	P			3.0
AS	LANG	378.115	First Year Japanese	A			5.0
Spring 2025							
AS	ECON	180.607	Macroeconometrics I	X			
AS	ECON	180.620	Causal Analysis	X			
AS	ECON	180.632	Topics in Applied Microeconometrics	X			
AS	ECON	180.652	Labor Economics II	X			
AS	ECON	180.672	Industrial Organization	X			
AS	ECON	180.697	Research Seminar	X			

UNOFFICIAL

Advisors:
Duffee, Gregory R 06/07/2023 - (Primary Advisor)

*******End Of Transcript*******

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How do technological innovations shape competition and workforce adaptation? My research explores this question by examining firm strategies and worker responses in rapidly evolving digital markets. I am currently working on two projects: one analyzes the competitive strategies of multi-sided platforms and their impact on market innovation, while the other investigates how employee beliefs influence workforce adaptation to artificial intelligence (AI). Both projects provide insights into the broader economic implications of technological change.

The first project examines Amazon's entry into third-party merchant product spaces, addressing both predictive and impact-driven questions. I model Amazon's likelihood of entering specific product categories based on demand dynamics, competition intensity, and product characteristics. Leveraging transactional data and market features, I estimate the probability of entry and its consequences for consumers and third-party merchants. Using causal inference techniques, I measure post-entry changes in prices, product availability, and merchant innovation. Understanding these dynamics is crucial for assessing Amazon's dual role as a platform operator and competitor.

Beyond firm strategy, the second project shifts the focus to individual workers, exploring how they navigate AI-driven disruptions. Existing research often emphasizes objective risks and forward-looking behavior, but this work examines the psychological and behavioral dimensions shaping workforce responses. Through surveys in industries like law and consulting, we analyze variations in AI-related beliefs, their accuracy relative to labor market trends, and their influence on career decisions, reskilling efforts, and job mobility. By comparing subjective beliefs with objective benchmarks from task-based models like O*NET, this research provides a comprehensive perspective on AI-driven labor market shifts. Future extensions will explore cross-cultural differences in AI perceptions and the effectiveness of information interventions in shaping workforce adaptation.

Looking ahead, I plan to examine how firms reallocate innovation investments in response to AI-driven labor shifts and how regulatory frameworks shape these decisions. I am also interested in the role of financial constraints and regulatory frameworks in shaping the adoption of disruptive technologies.

Attending the NBER Innovation Research Boot Camp offers an invaluable opportunity to engage with leading scholars in innovation, technological adoption, and labor economics. The program's intensive training will refine my methodological toolkit, particularly in causal inference and experimental design, strengthening my ability to address complex research questions. Discussions with faculty and peers will provide fresh perspectives that enhance my work and inspire new research directions. Beyond methodological insights, the boot camp will foster meaningful academic connections and collaborations, helping position my research within broader debates in innovation and economic policy.