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Application for the NBER Digital Economics and AI Tutorial

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Graduate Study

I am a fourth-year PhD candidate in Public Policy with a concentration in Economics at Northeastern University, where I have been enrolled since Fall 2023. My graduate training is primarily in applied microeconomics. I have completed the PhD sequences in Microeconomics, Econometrics, and Labor Economics, along with coursework in computational statistics and social-network analysis. I have also taken Behavioral Economics at MIT and Design and Analysis of Field Experiments in Education at Harvard. In 2025, I completed an MS in Computational Social Science at Northeastern alongside my doctoral training.

My research lies at the intersection of labor economics, economics of education, market design, and, increasingly, digital economics. I am particularly interested in how institutions governing access to education and skills shape the allocation of workers across occupations and firms, and how technological change alters both the demand for and supply of specialized human capital.

Research Interests and Current Projects

My current project, **"The Supply of AI Skills: Specialized Education and Labor-Market Sorting,"** studies the supply-side response to the rapid expansion of artificial intelligence. Much of the emerging economics literature studies AI after it reaches firms and workers. I instead ask how educational institutions produce AI-specific human capital and whether marginal access to that training changes subsequent labor-market allocation.

The setting is undergraduate admission to the Indian Institutes of Technology (IITs). Beginning in 2019, IITs introduced 13 standalone undergraduate programs in artificial intelligence and data science across 12 campuses. An audit of official curricula shows that these programs devote approximately 42–51 percent of required credits to specialized AI and data-science coursework. I combine these institutional changes with the centralized IIT admissions mechanism, in which program-specific rank cutoffs generate local variation in whether a specialized AI program is attainable. In my preferred design, 10 program-year AI thresholds are isolated from all other IIT-program cutoffs within 50 ranks. Crossing these thresholds raises the probability of allocation to an AI/data-science program by approximately 81 percentage points.

I am linking these admissions records to longitudinal professional histories to study whether marginal access to specialized AI education increases entry into AI-intensive occupations and changes sorting across employers, industries, and locations. A preliminary linkage exercise covering all 23 IITs and cohorts from 2009–2026 matches 81 percent of records to professional-history profiles. The project therefore connects a question about technological change to the endogenous supply of workers trained for the new technology: when universities create specialized AI training, who gains access to it, and does that access change where workers subsequently enter the economy?

This project builds directly on my broader dissertation research on centralized education markets. In **"Priority, Opportunity, and Allocation in Centralized Admissions,"** I reconstruct applicant-specific sets of attainable college-program alternatives in India's centralized engineering admissions system. I use these opportunity sets together with estimated choice behavior to distinguish disparities arising because students face different educational opportunities from those arising through choices over the opportunities available to them. The project studies how admissions priorities and individual decisions jointly determine college allocations and subsequent labor-market outcomes.

A second dissertation project, **"Second Chances, Progression, and Streams Sorting: Evidence from High-Stakes Board Exams in India,"** studies how progression rules following high-stakes examinations shape educational trajectories. Using a sharp grace-mark threshold in Rajasthan's Grade 10 board examinations, I estimate how marginal certification affects progression to Grade 12, eventual completion, and choice of academic specialization. Together, these projects form a broader research agenda on how educational institutions and allocation mechanisms shape the formation and distribution of human capital and, ultimately, workers' labor-market opportunities.

Dissertation Research

My dissertation examines how educational institutions and allocation mechanisms shape access to human capital and subsequent labor-market outcomes. A central theme is that educational opportunities are not simply chosen by students: institutions determine which opportunities are attainable, progression rules determine which educational paths remain open, and technological change can create entirely new forms of specialized training. My dissertation combines administrative data, centralized-allocation mechanisms, and quasi-experimental variation to study these margins in India.

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The NBER Digital Economics and AI Tutorial would be especially valuable as I develop the AI-skills project from an education and market-design setting into a study of technological change and labor-market allocation. I would particularly value exposure to current research on AI adoption, digital markets, technological diffusion, and the measurement of AI-related work, as well as the opportunity to discuss the project with researchers working at the frontier of digital economics.