NBER Digital Economics and AI Tutorial Application

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Course of Graduate Study

I am a fourth year PhD student in Economics at the Olin School of Business at Washington University in St. Louis. The first year course of study was typical for economics PhDs: microeconomic theory, macroeconomic theory, mathematics, and econometrics. Later electives included industrial organization courses taught by Stephen Ryan, Gaurab Aryal, Brent Hickman, and Ian Fillmore; econometrics courses taught by Ismael Mourifie (applied microeconometrics) and George Levi Gayle and Limor Golan (structural econometrics); labor economics taught by George Levi Gayle and Limor Golan; and a Matching & Assignment course taught by SangMok Lee.

Research Interests and Projects In-Progress

My primary field is labor economics, with particular interest in how technology and the organization of work influence human capital accumulation and labor supply.

My primary AI-related works in progress are joint with Greg Sun and Kiara Kim. Our projects include:

- The design of a field experiment to test how generative AI use on easy tasks affects building skills for complex tasks through either a) crowding out effort or b) taking advantage of a powerful learning tool. I presented our work at the 2025 Advances in Field Experiments (AFE) conference at the University of Chicago this past September.
- An applied theory project exploring the implications of AI availability for human capital development, and how firms will adapt.
- A large-scale survey eliciting from workers patterns of and attitudes towards AI use, in particular its effects on human capital development, as well as relevant institutional arrangements within their firms.

My own work studies the implications of the task structure of work for labor supply. The basic theory: when the tasks a worker faces at work are of greater variety and are highly complementary to each other (productivity on any one task is improved when that same worker also completed the other tasks), halving total work time more than halves the worker's output, and doubling total work time more than doubles the worker's output - multitasking and task complementarities make a worker's output more convex as a function of total work time. I draw on data on task characteristics from the National Survey of College Graduates (NSCG), the 1979 National Longitudinal Survey of Youth (NLSY79), and O*NET to study how the structure of task assignments affects how a worker's earnings depend on their hours, and in turn how the induced shape of earnings as a function of hours affects the worker's (intensive margin) labor supply. This causal chain can help explain why, over the second half of the 20th century, hours worked among the highest earners increased so significantly while hours among lower earners declined. Further, this mechanism may have important implications for the likely effects of artificial intelligence on labor supply. AI will not only alter the average per-hour wage a worker merits (through complementing or substituting for a worker's effort), but also, by altering the mix of tasks to which workers are assigned, alter how productivity scales with the hours worked, which I argue is an important determinant of labor supply.