Application to the NBER Digital Economics and AI Tutorial

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Dear Selection Committee:

I am writing to apply for the NBER Digital Economics and AI Tutorial. My research focuses on labor markets and education, examining human capital investment decisions and returns to different forms of education. I study how individuals decide whether and where to invest in education, and how labor markets reward these investments over time.

Graduate Study

I am a 4th-year PhD candidate at UCLA Anderson in the Global Economics and Management area, having completed my coursework, including the core first-year PhD Economics classes - Microeconomics, Macroeconomics, and Econometrics - as well as second-year PhD classes in Applied Microeconomics and Labor Economics (taught by Professors Adriana Lleras-Muney, Maurizio Mazzocco, Daniel Haanwinckel, Martha Bailey, Felipe Gonçalves, Michaela Giorcelli, Natalie Bau) and Applied Industrial Organization (Prof. Martin Hackmann). My doctoral committee consists of Professors Melanie Wasserman (chair), Romain Wacziarg, Ricardo Perez-Truglia, and Clémence Tricaud.

Research Interests and Projects

My research examines labor markets and education, with particular attention to how new modalities of work affect skill formation and economic mobility. Digital platforms and automation increasingly reshape employment opportunities and skill demands, raising critical questions about optimal education policy.

Platform Labor Markets and Human Capital Formation

One of my dissertation projects investigates how delivery platforms affect educational choices and skill accumulation among young workers in Brazil. Using the staggered entry of platforms across municipalities, I examine whether immediate access to gig work discourages educational investment or alternatively helps finance continued schooling. Beyond the immediate labor market effects, this research addresses fundamental questions about human capital formation when digital labor markets reduce search and matching frictions, creating new trade-offs for workers deciding between immediate earnings and longer-term skill investment. Understanding these dynamics is particularly

important for vulnerable populations who may be most affected by new employment options that bypass traditional skill requirements.

Decomposing Skill Returns Amid Technological Change

In "**Why is the College Premium Falling? The Role of Composition**" (with Ariadna Jou and Tomás Guanziroli), we examine whether declining college premia mask compositional changes in who attends college. Using a modified Katz and Murphy framework, we show that returns to skill actually increase when following graduates from a fixed set of universities, despite aggregate premium declines. Behind the divergence between fixed universities and the overall college graduate pool lies a key difference in education quality. This decomposition has important implications for understanding skill demand amid technological change: if automation and AI reshape which cognitive skills command premiums, composition changes from college expansion may obscure whether technology reduces *all* college returns or changes *which* specific college skills matter. Distinguishing these effects is essential for designing education policy that promotes mobility, particularly as concerns grow about whether college remains a reliable pathway to economic opportunity.

Future Research Directions

Looking ahead, I plan to expand this research agenda to examine educational responses to evolving labor market demands. One preliminary project aims to analyze the effect of Computer Science Advanced Placement classes in high schools. Understanding whether and how CS education affects career trajectories - and for whom - is crucial for designing equitable education policy. Additionally, understanding whether early CS exposure is effective even outside technological urban centers, and whether recent cohorts show tapering returns due to slowing CS hiring, would provide important insights into vocational education in technological fields.

More broadly, I am interested in how labor markets characterized by automation and platform work may require more flexible educational pathways that facilitate lifelong learning. This includes investigating vocational and technical education, and understanding how education quality - not just access -shapes economic mobility amid technological transformation.

Beyond my primary focus on education and labor markets, I have previously worked on health economics. In "**Economic Distress and Children's Mental Health: Evidence from the Brazilian High-Risk Cohort Study for Mental Conditions**" (with Luiz Fontes, Matias Mrejen, and Rudi Rocha, *Economic Journal*, 2024), we analyzed how parental job loss affects children's mental health outcomes.

Why This Tutorial

Attending the NBER Digital Economics and AI Tutorial represents a valuable opportunity to deepen my understanding of how digital technologies and AI affect labor markets and skill formation. While my primary research focus remains labor economics and education, these technological forces are increasingly central to the questions I study - from how platforms reshape employment options, to how automation affects returns to different skill types and education quality levels. I am particularly interested in learning rigorous approaches to identifying AI's impact on skill premiums and inequality, understanding how digital platforms transform market structure and access, and incorporating these insights into policy-relevant research on education systems. The tutorial will enhance my ability to analyze the mechanisms through which technological change affects skill formation, labor market transitions, and economic opportunity.