Digital Economics and AI Tutorial Application

1. Contact Information

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2. Course of Graduate Study and Years of Enrollment

I am a third-year Ph.D. student in Economics at the University of California, Davis, where I enrolled in Fall 2023 and expect to complete the degree in 2028. My core graduate training has emphasized advanced microeconomics, macroeconomics, and econometrics, all of which I completed with top grades. I have also passed the Ph.D. qualifying examinations in economics. In addition, I have audited advanced quantitative courses outside the economics department, including *Topics in Theoretical Neuroscience* and *Machine Learning with Python*, which have strengthened my background in computational modeling and modern data methods.

3. Research Interests and Current Projects

My research agenda lies at the intersection of **digital economy, labor and public economics, and computational social science**. I am broadly interested in how digital platforms and emerging AI technologies reshape labor markets, program take-up, and welfare, and in how tools from machine learning and computer science can be integrated with credible econometric designs to answer these questions.

(a) E-commerce, digital platforms, and rural inequality

In related work, our paper "Bringing E-commerce to the Countryside: Impacts on Rural Household Welfare and Economic Inequality" (co-authored with graduate cohorts) evaluates China's nationwide "E-commerce into Countryside" (ECC) program, which bundles platform access with logistics, training, and promotion to overcome the rural "last mile" problem. Using a difference-in-differences design and a nationwide rural household panel, we estimate the causal effects of this digital-market intervention on

incomes, production decisions, and distributional outcomes. We find that ECC substantially raises net household income by increasing earnings from self-employment, wage work, and transfer payments. It also shifts production toward more commercial, market-oriented agriculture, characterized by higher farm investment and sales. Additionally, household consumption rises, largely through improved access to a wider variety of goods. A distributional analysis based on inequality measures and quantile treatment effects reveals that poorer households benefit disproportionately, thereby narrowing both the rural–urban income gap and within-rural inequality. To gauge policy relevance, we conduct a cost–benefit analysis comparing discounted program costs with induced income gains and find sizeable net social returns. Finally, we are developing a structural model of household production and consumption with endogenous e-commerce participation, which we plan to estimate to recover key parameters governing trade-cost reductions, adoption responses, and heterogeneous welfare gains. Together, these results provide micro-level evidence that well-designed digital-platform policies, when combined with offline infrastructure and capacity building, can promote structural transformation and inclusive growth in developing rural economies.

(b) Migration, poverty reduction, and mobility

In *"From Isolation to Integration: Evidence from the World's Largest Coordinated Resettlement,"* I evaluate China's Poverty Alleviation Resettlement (PAR) program, which relocated nearly ten million rural poor into newly constructed communities between 2016 and 2020. Using a household panel merged with village-level implementation records, I employ a triple-difference strategy that compares eligible and ineligible households across treated and untreated counties before and after relocation. Preliminary evidence suggests that relocation significantly raises per-capita income only when paired with complementary measures, such as skills training and job-placement services, consistent with the idea that big-push spatial interventions must be integrated with human capital and labor market policies to be effective. I increasingly view it through a digital economy lens: relocation changes access to digital infrastructure, platforms, and information, and my future work will explore how these changes mediate long-run labor market outcomes.

(c) Computational and AI-adjacent work

Beyond these economics projects, I am actively building a complementary research portfolio at the boundary of AI and empirical social science. I am a co-first author of *"TV-RAG: A Temporal-Aware and Semantic Entropy-Weighted Framework for Long Video Retrieval and Understanding,"* which has been accepted for publication by the Association for Computing Machinery (ACM). This work develops a temporal-path-based retrieval-augmented generation framework for long-horizon video, combining graph-structured representations with entropy-weighted evidence selection. While TV-RAG is primarily a computer science contribution, it also has applications in digital economics: the same techniques can be used to analyze user behavior on video platforms, study algorithmic exposure to content, or track how workers interact with training materials and microtasks in rich media environments. My goal is to leverage these methodological advances in future projects on labor platforms and generative AI tools.

4. Dissertation Plans and Mentoring

I am in my third year and have not yet formally constituted a dissertation committee or filed a dissertation proposal. My current expectation is to focus more directly on the labor-market impacts of AI adoption or platform design. At UC Davis, I currently receive advising and guidance from Professor Giovanni Peri, who specializes in labor, urban, and public economics. I anticipate formally assembling my committee in 2026, after further progress on these projects.

5. Motivation for Attending the Tutorial

Attending the NBER Digital Economics and AI Tutorial would be extremely valuable for my development as a researcher at the intersection of digital platforms, AI, and labor markets. Methodologically, I hope to deepen my understanding of how to integrate modern machine-learning tools (such as large language models, representation learning, and reinforcement learning) with identification strategies that meet the standards of the economics profession. Substantively, I aim to situate my work on the digital economy and migration within a broader research agenda on how AI changes the production, distribution, and governance of information.

The opportunity to interact with leading researchers in both digital economics and AI would help me refine my ongoing projects, develop new collaborations, and better align my future dissertation chapters with the frontier of the field. I also hope to apply what I learn to contribute to the growing digital economy research community and to future collaborations between economists and computer scientists working on AI and policy.