

# DISSERTATION PROPOSAL

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## “The Economics of AI Adoption: Production, Labor, and Financial Markets”

Friday, December 5, 2025  
2:00pm  
Tepper 4219

This dissertation studies how the diffusion of Artificial Intelligence (AI) reshapes firm behavior, labor markets, and asset prices, and how these micro-level adjustments connect to broader macroeconomic forces. Across the first three chapters, I construct firm-level measures of AI and Generative AI adoption from large-scale corporate transcripts and link them to production decisions, wage structures, and financial market responses. The final chapter develops a structural macroeconomic model with incomplete labor markets and rational expectations, providing a theoretical environment to interpret the distributional and asset-pricing implications of shocks to intangible capital such as AI.

### **Chapter 1 – Who Gains from AI?**

This chapter examines how AI adoption reorganizes firm production. Using transcript-based adoption measures combined with detailed accounting data, I estimate dynamic effects on scale, cost structures, intangibles, productivity, and factor shares. The results characterize AI as an intangible-intensive reorganization of production that expands scale, shifts income toward capital, and generates heterogeneous gains across early and late adopters. The chapter highlights the role of diffusion and timing in shaping the distribution of efficiency gains and valuation responses.

### **Chapter 2 – AI and the Restructuring of Work**

The second chapter turns to internal labor markets. Linking AI adoption to rich firm-occupation-level data on wages, job composition, education, and skills, I study how firms reorganize their workforce during and after adoption. AI adoption is associated with shifts in occupational structure, changes in wage distributions, and a reallocation of work toward AI-complementary tasks. The chapter provides a micro-based view of how contemporary AI diffusion interacts with inequality, hierarchy, and organizational design inside firms.

### **Chapter 3 – The Price of Saying “AI”**

The third chapter investigates how financial markets interpret and price corporate AI activity. Combining adoption and intensity measures with CRSP data, I analyze market reactions to different types of AI disclosures and the longer-run pricing of persistent AI involvement. The chapter documents how investors differentiate across AI technologies, sourcing strategies, and business applications, and how diffusion, news content, and intangible capital formation shape both announcement returns and cross-sectional premia.

### **Chapter 4 – Determinate Indeterminacy: Keynesian Search in a Stochastic OLG**

This chapter, based on joint work, develops a stochastic overlapping-generations model with incomplete labor markets and Keynesian search for young workers, where expectations must be consistent with the endogenously evolving wealth distribution. The model is solved using an economics-informed neural-network method that approximates equilibrium policy functions. The resulting rational expectations equilibrium produces volatile employment and income for the young, more stable outcomes for seasoned workers, and lifecycle profiles of consumption, capital, bonds, and portfolio risk that align with several key

empirical regularities. The framework provides a macro-finance laboratory for studying shocks to intangible capital, including AI.

Proposed Committee: Ali Shourideh, Stephen Spear, Maryam Saeedi, Burton Hollifield, Brent Glover