David Wu

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GRADUATE STUDY

I am a 3rd-year PhD Candidate in the Department of Operations and Information Management at the University of Wisconsin-Madison. Below is a selection of relevant advanced coursework I have completed in Applied Microeconomics, Econometrics, and Industrial Organization:

Selected Advanced Coursework:

Course Code	Course Title & Instructor
AAE 635	Applied Microeconomic Theory (Prof. Guanming Shi)
AAE 636	Applied Econometric Analysis I (Prof. Sarah Johnston)
AAE 637	Applied Econometric Analysis II (Prof. Dustin Frye)
ECON 761	Industrial Organization Theory (Prof. Lorenzo Magnolfi, Prof. Kenneth Hendricks)
ECON 762	Empirical Analysis - Ind. Org. & Public Policy (Prof. Panle Jia Barwick, Prof. Alan Sorensen)
ECON 880	Computational Economics (Prof. Dean Corbae, Prof. Jean-Francois Houde)

RESEARCH INTERESTS

My research focuses on the intersection of Digital Economics, Industrial Organization, and Artificial Intelligence. I use causal inference, mechanism design, and structural modeling to examine how technological innovation and policy changes in platforms shape developer innovation strategies, competition, and market structure.

CURRENT RESEARCH

Title: Foundation Models and AI Innovation: Evidence from the Hugging Face Platform
Authors: David Wu, Jinan Lin, and Zhuoxin Li
Status: Preliminary version accepted at the *International Conference on Information Systems 2025*.

Abstract: Large-scale pre-trained foundation models are transforming the open-source artificial intelligence (AI) model development ecosystem. These base models such as Llama and GPT are costly to build and train, but can be easily fine-tuned to a variety of downstream applications. While prior research has examined the impact of adopting these models on downstream users, less is known about how foundation models influence AI model developers. In this research, we theorize the release of open-source foundation models as a commoditization shock, which lowers the barrier for AI model developers to build applications on top of the foundation model. We investigate how the release of an open-sourced foundation model affects AI developers' decision in AI model creation. Using the release of Meta's Llama 2, an open-source text generation foundation model, on the Hugging Face platform as a natural experiment, we employ a difference-in-differences approach to examine how commoditization shocks affect developer strategies. We compare text generation model developers (treatment group) with computer vision model developers (control group) to identify causal effects on model upload activities. First, we find that following the release of Llama 2, developers increase

overall model upload activity by 1.2% relative to the control group, as commoditization enables developers to leverage accessible technology as infrastructure for complementary tasks. Second, commoditization devalues accumulated expertise, with high-experience developers reducing activity across natural language processing (NLP) domains relative to low-experience developers. Third, portfolio similarity to Llama critically moderates these experience effects through competition-driven repositioning. High-experience developers with greater similarity to Llama face more direct expertise devaluation but strategically reposition through increasing fine-tuning in adjacent NLP tasks to preserve the value of their transferable knowledge. These findings reveal how foundation models as general purpose technologies commoditize AI development and reshape competitive dynamics through heterogeneous expertise devaluation and strategic repositioning responses.