Jiwoo Bae

PhD Student, Information Systems & Management | Heinz College, Carnegie Mellon University
Pittsburgh, Pennsylvania | jiwoob@andrew.cmu.edu| 412-909-8702

Application: NBER Digital Economics and AI Tutorial (2027)

Graduate Study and Academic Preparation

I am a third-year PhD student in Information Systems and Management at Carnegie Mellon University's Heinz College (**August 2024–present**; expected completion May 2029) advised by Professor Avinash Collis, and Professor Ananya Sen. My doctoral training combines econometrics (causality), machine learning, and organizational research to study how digital technologies reshape economic activity. I previously spent time at the Bank for International Settlements as an Associate for the Innovation Hub, Swiss Centre conducting research on emerging disruptive technologies and their impact on Central Bank policies. Before this, I earned an **MSc in Economics** from the London School of Economics and Political Science (2021–2022) advised by Professor Aghion and a **BA in Economics and International Studies** from Korea University (2015–2019). This background shapes my empirical approach on understanding the digital economy and the economics of artificial intelligence and digital production.

PhD Committee: Professor Avinash Collis, Professor Ananya Sen, TBD

Research Interests

I study how institutions and information environments affect innovation and economic behavior in digital systems. In particular, I am interested in how governance measures by institutions change the direction (beyond quantity) of innovative activity, and how people's engagement alters based on perceived trust on AI generated content. I employ quasi-experimental and randomized designs to investigate causal relationships in the digital economy. An emerging extension of these interests also examines how autonomous AI (agentic) systems change the organization and production of digital goods.

Research Projects in Progress

1. Structure Doesn't Kill Creativity: Evidence from Open-Source Incubation. (Suresh Konda Memorial Best First Paper Award, Heinz College, CMU 2026) This paper examines whether entry into an open-source foundation changes the balance between exploration (novel development) and exploitation (refinement of existing work). I collect longitudinal project-level data on Apache and CNCF ecosystems, linking governance transitions to software development histories. Using both commit-based innovation measures, language agnostic measures (keyword and code differences classification), and staggered difference-in-differences, I investigate the causal effects of incubation by a foundation on the composition of innovation activity. Preliminary evidence supports a decrease in the share of exploratory activity following incubation as well as a two way divergence by origin; When examining a project based on the origin (community led "grassroots-origin" and "corporate-origin") community led projects exhibit an increase in exploration ratio. The effect is opposite for corporate-project origins. The broader question this aims to answer is how formal governance by institutions shape innovative trajectories of shared digital public goods/infrastructure.

2. AI Disclosure Labels and Engagement in Professional Networks. In ongoing collaborative work, I am conducting a randomized controlled study of how labeling content as AI-generated affects engagement in professional social feeds. The design compares responses to content with and without AI disclosure labels and investigates whether effects differ by degree of networks. The study examines engagement levels along with a competing hypotheses: familiarity may foreground trust or instantiate a stronger hostility when AI usage is disclosed. This project speaks to the economics of information disclosure, signaling, and platform design as AI-generated content becomes more widespread.

Additional research directions. I am also developing research on the structural evaluation of LLM-generated software workflows and the variation in AI-agent production processes conditional on task success. These projects extend my interest in measurement and institutions toward the economics of autonomous digital production, including coordination patterns and oversight strategies.

Emerging Dissertation Direction

My dissertation interests lie at the intersection of governance, innovation, and behavior in the digital economy. I seek to understand how technological advancements translate into the creation and valuation of digital output, and how institutions, governance mechanisms, and human decisions shape this process. The NBER tutorial would help me connect my empirical work on open-source innovation and AI disclosures to broader questions in the economics of digitization and artificial intelligence as well as help guide my dissertation agenda.