



CoCo Seminar Series Spring 2026

Do Models Matter? How Parent, Offspring, and Sibling Relationships Shape the Diffusion of AI Innovations

Dr. Kaige Gao
Assistant Professor, School of Management,
Binghamton University



Wednesday April 15, 2026 12:15-1:15pm EDT
Hybrid (EB-T1 & Zoom; meeting link available on
<http://coco.binghamton.edu/>)

Previous research has studied various factors that influence the popularity of academic papers, yet the role of open-source models — the core artifacts of AI research — remains largely overlooked. In this talk, I will present research that identifies how models and their structural network positions influence paper popularity over time. With 64,059 AI papers and 98,105 associated open-source models from 2000–2023, we use Graph Neural Networks and econometric methods to examine how a model's centrality, its parent models, and its offspring models influence citation outcomes. This research identifies the role of models beyond their open availability; different models and their structural positions have various nonlinear effects on papers' popularity over time. This research shows that understanding AI innovation requires looking beyond individual papers to the ecosystem of models that surrounds them, offering new insights for researchers and developers navigating the evolving landscape of open science.

Kaige Gao is a researcher at the intersection of AI innovation, open-source community, and the science of science. She received her Ph.D. from the Department of Design & Innovation at Case Western Reserve University. She is currently an Assistant Professor of Information Systems at the School of Management, Binghamton University. Her research focuses on the evolution of AI innovations across open-source communities, academic fields, and commercial industries. She uses advanced computational tools, including dynamic multi-level networks, Graph Neural Networks, and Large Language Models, as well as econometric methods to understand the evolution of digital innovation.

For more information, contact Hiroki Sayama (sayama@binghamton.edu).
<http://coco.binghamton.edu/>