**Applicant:** Luyang Zhang
**School:** Carnegie Mellon University
**Ph.D. program:** Information Systems and Management
**Contact:** luyangz@andrew.cmu.edu

**Courses Pursued (Ph.D. level):**
***Economics*:** Microeconomics, Econometrics.
***Machine Learning*:** Advanced machine learning.
***Marketing*:** Structural model, Human algorithm bias, GenAI and economical and social aspects.
***Social science*:** Judgemental and decision making, Mechanism in social science.
***Probability*:** Probability theory (measure theory), Stochastic Process,
***Optimization*:** Convex optimization, Non-linear optimization, Linear programming.
***Statistics:*** Statistical theory, Matric computation, Statistical learning, Monte Carlo simulation, Multiple testing.
***Applied Math***: Partial Differential Equations, Applied Analysis.
***Finance***: Asset Pricing, Financial Statistics.

**Years of enrollment**: 4 years (first 2 years in another Ph.D. program, and 2 years in the current Ph.D. program)

**Research interest**:
My research lies at the intersection of AI and digital economics, with two complementary strands. First, I study AI data markets, including the supply chain of training data and the pricing and valuation of data for large language models. Second, I examine the monetization and evolution of AI-enabled products on digital platforms, focusing on the competition between ads ranking and AI overviews, user preference learning on online video platforms, and ranking mechanisms for sponsored listings in online marketplaces.

**Research project**:
AI data market: Fairshare Data Pricing via Data Valuation for Large Language Models (accepted at *NeurIPS 2025*, also submitted to *Digital Economics and AI Meeting, Spring 2026*)

Online marketplace: The Power of Linear Programming in Sponsored Listings Ranking: Evidence from a Large-Scale Field Experiment (major revision at *Operations Research*)

Online video platform: PET: Preference Evolution Tracking with LLM-Generated Explainable Distribution (submitted to *ICLR 2026*)

AI-overview: The competition between Ads ranking and AI-overview (*work in progress*)

**Committee members**:

Beibei Li, Carnegie Mellon University

Chenyan Xiong, Carnegie Mellon University

Pedro Ferreira, Carnegie Mellon University

Haihao Lu, MIT