Application for the NBER Digital Economics and AI Tutorial 2025

I. Contact Information

Full Name: Zhiwei (Berry) Wang

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Program: Wharton's Operations, Information and Decisions Department (**4th year PhD**)

II. Coursework

In preparation for the NBER Digital Economics Tutorial, I have completed the first-year sequences in microeconomic theory and econometrics, establishing a strong foundation in theoretical and empirical analysis. To further enhance my research skills, I pursued additional coursework in numerical methods, machine learning, and applied econometrics. On top of these, I have proactively engaged in PhD-level field courses in empirical industrial organization, corporate finance theory, and innovation economics and strategy.

III. Research Interests and Ongoing Projects

My research interest is in firm competition around digital technologies, with a focus on:

1. For firms *producing* digital technologies, how may they leverage open-source strategies to improve various firm outcomes?
2. For firms *using* digital technologies, when and how may digital technology become a source of competitive advantage?

My tentative committee members are:

- Prasanna (Sonny) Tambe (Primary advisor)
- Daniel Rock
- Rahul Kapoor
- David Hsu

Below is a summary of the research projects I am currently engaged in:

- *Open source, value creation and value capture: evidence from the database management systems industry* with Rahul Kapoor
  - This research examines the classic tradeoff between value creation and value capture of open-source strategies. Although making a technology open source might increase adoption and attract external contributions, it could potentially harm profitability. We employ empirical data from the database market to explore this question.
- *Firm Openness and Talent Attraction* with David Hsu, Prasanna (Sonny) Tambe and Paul Hamilton
  - This research examines whether firms can attract technical talent through engaging in open source and open science. We use the job applications dataset from a large labor platform to study this question.
- *Owning the Tech Stack: Make vs buy and competitive advantage through IT* with Prasanna (Sonny) Tambe and Daniel rock
  - This project explores whether the make vs buy choice on the firms' IT stack may contribute to its competitive advantage. How may the vertical integration decision for digital technologies differ from traditional capital investments?

- *Deep Capital in Deep Learning* with Prasanna (Sonny) Tambe and Daniel rock
  - We show that firms' investment in AI is causally related to its investment in prior waves of digital technologies (e.g., big data, web). This mechanism may contribute to the current concentration of investments in AI.