# Application for Tutorial Meeting

Baiyun Jing

**Contact Information**

Email: bjing@fas.harvard.edu
Phone: (+1) 617-401-5214
Program: Ph.D. Program in Business Economics, Harvard Business School

**Course of Graduate Study**

I am a third-year Ph.D. student in Business Economics. I began the program with interests in behavioral economics and macroeconomics, and over time I found myself increasingly drawn to the methodological questions that arise in these areas. This led me toward econometrics as my primary field.

My current research focuses on the intersection of economic and statistical theory. I develop methods in experimental and survey design, model selection, high-dimensional statistics, and reinforcement learning, and use these tools to study both individual decision making and broader macroeconomic questions.

I am fascinated by recent advances in LLMs and agentic AI. I have a strong technical understanding of LLM training, especially post-training and test-time reinforcement learning techniques, as well as the data architectures used to build specialized agents. I think that although current models perform well on low-stake tasks (coding, math, etc.), their performance remains constrained in high-stake applications due to (1) data availability barriers and (2) methodological challenges in uncertainty quantification. I am eager to apply economic theory to the study and development of emerging agentic AI technologies.

**Current Projects**

*Experiment design and model selection in behavioral economics (with Cassidy Shubatt).*
In behavioral economics, a good lab experiment should be both *distinctive*, providing clear evidence that distinguishes between competing economic models, and *relevant*, meaning that its insights generalize to empirical settings beyond the lab. This project formalizes these notions of distinctiveness and relevance and develops a framework that algorithmically generates "optimal" experimental designs for a given choice environment – designs that are simultaneously distinctive and relevant. (Work in progress)

*Estimation in linear models with clustered data (with Anna Mikusheva and Mikkel Sølvsten).*
This is an econometric theory paper that studies linear regression models with clustered data, high-dimensional controls, and complex exclusion-restriction structures – settings commonly found in panel, spatial, or network data. In these environments, the conventional OLS estimator is biased. The paper develops an internal IV estimator that improves upon OLS, establishes its asymptotic properties, and proposes its corresponding Jackknife-based variance estimator. (Draft available)

*The economics of currency redemption (with Michael Wong, Yang You, and Yulin Zhong).*
This paper studies currencies backed by promises of redemption – examples include modern platform currencies, historical goldbacked currencies, free bank notes, and emerging stablecoins. This paper develops a search-theoretic model of currency redemption and show that redeemability can coordinate agents on a monetary equilibrium with zero steady-state redemption costs. However, *too much* redeemability can crowd out the medium-of-exchange role of the currency and induce large redemption costs. Model predictions are empirically supported using unique transaction data from a digital trading platform. A key implication is that optimal policy may impose some degree of redemption friction. (Draft available)

*The pricing of property tax revenues (with Erica Jiang and Anthony Lee Zhang).*
This paper shows that a property tax can be thought of as a capital structure, which divides a stream of rents into components accruing to the homeowner and to the government. Near-term rents mainly accrue to homeowners, and far-term rents mainly accrue to governments. This characterization implies that the value of property tax revenues is very sensitive to interest rates, that governments funded by tax revenues have future-biased incentives to invest in public goods, and that taxed homeowners have present-biased incentives for investment. (Draft available)

**Dissertation Direction**

I have not yet determined a dissertation title, though my work will continue to be at the intersection of economic and statistical theory, with a likely focus on reinforcement learning. My current advisors are Jesse Shapiro, Anna Mikusheva, and Elie Tamer.