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Application to the NBER Digital Economics and AI Tutorial

January 20 and 21, 2027 | Stanford University

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Graduate Study

I am a third-year Ph.D. student in Quantitative Marketing at the University of Chicago Booth School of Business, with a minor in Econometrics and Statistics. I entered the Ph.D. program in September 2024. My advisors are Professors Jean-Pierre Dubé and Sanjog Misra. I have completed two years of doctoral coursework. My coursework includes Microeconomics I–III, Econometrics I–III, Statistical Inference, Bayesian Inference, Industrial Organization, Causal Machine Learning, Deep Learning, and Generative Models.

Research Interests and Current Focus

My research focuses on large language models (LLMs) and their applications in marketing and economics. Combining machine learning, econometrics, and experiments, I study how these tools can support economic modeling, shape consumer behavior, and reduce the cost of marketing research.

My current priority is an ongoing project with Jean-Pierre Dubé and Sanjog Misra, *Human-Aligned LLM Beliefs for Dynamic Demand Estimation*. This project evaluates whether LLMs can reduce the cost of measuring consumers' joint beliefs about future product attributes and prices while preserving agreement with human judgments and usefulness for demand prediction. Using the decision to buy an iPhone 18 or wait for the iPhone 19 as a case study, I will compare human-elicited, LLM-elicited, and human-aligned LLM belief distributions over the same hypothetical product profiles within a two-period replacement model estimated using human purchase choices. By varying the amount of human belief data, I will compare belief-measurement accuracy at common costs and costs at common accuracy levels, accounting for human elicitation, alignment, and inference expenses. The goal is to identify when limited human data and LLMs can reduce belief-measurement costs while supporting demand prediction.

We have also completed a manuscript of a related paper, *Can Large Language Models Predict Firms' New Product Launches?*, with the same coauthors. In that paper, we use choice-based conjoint experiments to recover LLM-implied beliefs about upcoming iPhone configurations, compare them with realized product introductions, and examine the decision rules behind the predictions. Together, these projects motivate my interest in how to evaluate LLM-generated beliefs and establish their usefulness for modeling economic decisions.

My interest in human–AI decision-making also extends to how consumers choose when to use AI. In an early-stage project with Jieyi Chen and Abigail Sussman, *Social Expectations and the Miscalibrated Adoption of Generative AI*, we investigate whether the perception that others are benefiting from generative AI encourages adoption even for poorly suited tasks. We propose that social expectations can make non-adoption feel like falling behind, shifting how consumers evaluate the

decision to use AI. This work examines how people form expectations about the benefits of AI and how those expectations affect their reliance on it.

My other research uses experiments and econometric methods to study consumer perceptions and purchasing behavior. I have completed a manuscript of *Designing Brand Personality Using Audio*, with Hortense Fong and Ankit Sisodia. We assembled a novel dataset of about 700 audio logos and identified relationships between audio properties and perceived brand personality. Using a field experiment, we found that these data-driven insights can complement professional sound designers' intuitions. I am also writing *More Than an Income Transfer: How SNAP Reshapes Household Consumption*, with Shirsho Biswas, Pradeep K. Chintagunta, and Sanjay K. Dhar. Using household transaction data and quasi-experimental variation in Supplemental Nutrition Assistance Program (SNAP) Emergency Allotments, we study changes in purchasing behavior and whether they persist after benefits are reduced.

Interest in the Tutorial

My main motivation for attending the tutorial is to place my research on LLMs within the broader agenda of digital economics and AI. I hope to better understand how changes in the cost and availability of information affect consumers, firms, and markets. My work on consumer beliefs and marketing research provides a starting point for exploring how AI changes the way firms learn about demand and make decisions. I would like to connect these questions with broader research on technology adoption, competition, and innovation, and to understand how insights from different fields can inform one another.

The tutorial would be especially valuable as I develop my future research. I want to learn how researchers identify economically important questions about AI, connect them to established economic mechanisms, and design credible empirical tests. Discussions with faculty and fellow students would help me examine assumptions about when better information and predictions improve decisions, and when beliefs, incentives, or patterns of adoption limit those benefits. I would also welcome perspectives on how AI can expand the scope of economic research by making measurement and experimentation more accessible. Attending the associated meetings would help me see how these ideas are developed in ongoing work and identify questions to pursue in my own research.

I would bring a quantitative marketing perspective on consumer expectations and demand, along with experience combining machine learning, econometrics, and experiments. My ongoing projects raise practical questions about validating AI-generated measures and understanding when consumers choose to rely on AI. I would be eager to share these questions, contribute to discussions of others' research, and think jointly about ways to test common expectations about AI's economic effects. I also hope to build lasting connections with peers across fields by exchanging early ideas and exploring opportunities for future collaboration.