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NBER Digital Economics and AI Tutorial

Dear Members of the Selection Committee,

I am writing to apply for the NBER Digital Economics and AI Tutorial. I completed my PhD in 2023 at Georgia Institute of Technology and am now a postdoctoral researcher working at the intersection of innovation, entrepreneurship, and digital platforms. Although the tutorial is formally designed for PhD students who have completed at least two years of coursework, I hope you will consider my application as a postdoc who is still in a formative stage of building a long-run research agenda. My postdoctoral period has opened up new empirical directions for me, but it has also made clear that I need deeper, structured exposure to the economics of AI in order to orient the next phase of my work. In that sense, I am much closer to the tutorial's intended audience than a more senior researcher: still actively training, still redirecting my trajectory, and still developing the methodological and conceptual foundation for my future projects.

During my PhD at Georgia Tech, I completed a rigorous set of courses that gave me a strong foundation in applied microeconomics and empirical research. My training included three graduate-level econometrics courses, the full microeconomics sequence, and a set of field seminars on markets for technology, entrepreneurship, and strategic management. My dissertation, Resources and Innovation, examined how different types of resources shape firms' creative knowledge output and innovative performance, combining theory with large-sample empirical analysis. I was fortunate to be advised by a committee consisting of Peter Thompson, Alex Oettl, Marco Ceccagnoli, and DK Lee (Boston University), whose guidance shaped both

my empirical discipline and my interest in technology-driven firm behavior. Building on this training, I now work in Europe alongside José Mata and Pedro Oliveira, which has further expanded my perspectives on innovation and entrepreneurship.

My recent research focuses on digital platforms and innovation, using large-scale datasets to study how firms respond to competition, user feedback, and technological change. Across these projects, AI methods have become central to how I work. In my most recent working paper (under revision at *Management Science*), I examine how entry and competition in digital platform contexts influence innovation and firm growth, using a large panel of firms operating in heterogeneous digital markets. I am also working on a second project exploring how online user reviews on a major digital platform (Steam) influence producer behaviour and new product development — and how the application of AI/algorithms by the platform mediates these dynamics. In both works, I use large language models to identify competitors from firms' market descriptions, extract product attributes and sentiment from user reviews, classify game updates and development stages, and structure unstructured digital trace data. These AI-driven tools are no longer peripheral—they have become deeply embedded in the empirical backbone of multiple papers, including my work on how entry shapes firms' innovation investment and my ongoing project on producer learning in the Steam ecosystem.

Although I have focused broadly on digital entrepreneurship, platform strategy and innovation, I now wish to sharpen my research agenda explicitly around the economics of artificial intelligence. What I now want to do is pivot from using AI primarily as a method to studying AI itself as an economic topic. I am increasingly interested in how firms adopt AI in production and innovation processes, how platforms deploy algorithmic curation and governance systems, how AI capabilities reshape competitive dynamics, and how these transformations

influence long-term strategy and market structure. These questions are a natural extension of my work on digital platforms, but answering them requires a firmer grounding in the economics of AI—both in terms of theory and state-of-the-art empirical approaches. For example, I am interested in how AI adoption among firms alters innovation incentives and efficiency especially in creative industries, how digital platforms deploy algorithmic tools and how these affect market structure and productivity, and how governance and policy of AI intersect with firm strategy and economic outcomes.

The Digital Economics and AI Tutorial offers exactly the environment I need at this juncture. The concentrated exposure to frontier research, combined with the opportunity to interact with leading scholars and peers, would have a meaningful impact on how I shape my research agenda for the coming years. At the same time, I believe I can contribute productively to the group through my empirical experience with platform data, my interdisciplinary foundation in innovation and strategy, and my ongoing projects that examine how firms learn from and respond to digital signals.

Thank you very much for considering my application. I would be grateful for the opportunity to participate and to engage with the community advancing research in digital economics and AI.

Sincerely,

Shibo Zhou

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