Northwestern | Kellogg

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I am a returning student who participated in the 2020 Digitization Tutorial. I am a fifth-year Ph.D. student in Quantitative Marketing at the Kellogg School of Management, Northwestern University. I am writing to apply for the NBER Digitization Tutorial 2021. My primary interest lies in empirical research in quantitative marketing and industrial organization around the topic of consumer protection and platform design. As digitization and its economic consequences is a key theme of my research agenda, I am excited to interact with fellow researchers with common interests. The rest of my application is structured as follows: (1) course of study, (2) summary of two relevant research projects. Contact information and a list of committee members are attached at the end the document.

Course of study

I have completed all core requirements of my department and have been admitted to candidacy. I passed preliminary exams for both Economics and Marketing Departments, which covered *Microeconomic Theory* (taught by Eddie Dekel, Marciano Siniscalchi and Alessandro Pavan), *Econometrics* (taught by Charles Manski, Joel Horowitz and Ivan Canay) and *Quantitative Marketing* (taught by Eric Anderson, Brett Gordon, Anna Tuchman, and Blake McShane). In addition to the core courses, I took a three-quarter sequence course for *Industrial Organization* (taught by Robert Porter, William Rogerson, Gaston Illanes and Vivek Bhattacharya), a sequence for *Economics of Innovation* (taught by Benjamin Jones, Bryony Reich and Daniel Spulber), and a seminar on recent innovations in statistical methods such as Causal Forest and Deep IV.

Relevant research projects

I briefly discuss two of my ongoing projects below.

In one of my projects, I study empirically the implications of between-firm data sharing on firm profitability and consumer welfare. There, I consider a counterfactual situation in which a bank not only has access to data on consumers' financial activities, but also observes what and how they buy at grocery stores. Specifically, I examine (a) whether grocery scanner data has incremental value in consumer risk prediction and management above and beyond the standard metrics used by the finance industry, and (b) how the incrementality translates into firm profits and which consumers benefit or lose from the data integration. To this end, I use proprietary data from a conglomerate

that operates both as a retailer (i.e., supermarket chain) and a lender (i.e., bank). Because data from each business unit can be matched based on a consumer identifier, I can link a consumer's financial activities to a portfolio of retail items purchased by the consumer.

In another project of mine, I focus an empirical setting in which some sellers at a sales platform artificially inflate sales figures of their own products to climb up sales rankings by buying their own items from platforms, which I call *ranking manipulation*. Using proprietary data on consumer transactions at a large-scale book retailer, I study whether and if so, to what extent ranking manipulation, a type of seller cheating, is profitable. In specific, I measure the returns on cheating at the seller-product level and explore heterogeneity in the returns across sellers and across products. I also examine how sellers' uncertainty about own and competing sales affects the extensive margin of cheating decisions.

I believe that the NBER Digitization Tutorial 2021 will provide me a unique opportunity to interact with researchers with whom I share research interests most, as well as to widen my understanding of the literature on the economics of digitization. Thank you for your consideration.

Sincerely,
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