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Dear NBER Economics of Digitization Selection Committee,

My name is Michael Zhao, a 3rd year PhD student advised by Professor Sinan Aral in the Information Technologies group at the MIT Sloan School of Management. I am writing to apply to participate in the Economics of Digitization Tutorial for economics graduate students.

Broadly speaking, I consider myself a computational social scientist, meaning that my research revolves around applying computational methods to study social contexts—particularly those that relate to digital information networks. More specifically, my research interests focus on identifying peer effects in networked settings and understanding the role of network structure in influencing economically-relevant outcomes.

I recently passed my qualifying exams where my major focus of study was network analysis and my minor was causal inference. Relating to my major, I've completed courses in applied network analysis and operations research methods in networks. Much of my other coursework consists of a mix of economics-related courses and computational methods. On the economics side, I've completed the introductory microeconomics sequence (which covers foundations, game theory, decision making under uncertainty, and contract theory), the introductory econometrics sequence, applied econometrics, experimental design and inference, behavioral economics, economics of ideas and innovation, and economics of digitization. On the computational side, I've completed statistical learning and data mining, machine learning, advanced natural language processing, and information theory.

I currently have 2 major research projects in the works. The first, with my advisor Sinan Aral, tries to causally estimate the value that social media sharing generates for online content consumption which I recently presented at INFORMS this year. We develop a novel panel-IV approach that uses local-level weather variation as an instrument to address the simultaneity induced by the positive feedback relationship between social media sharing and online content consumption.

My second project, with Duncan Watts and Jake Hofman at Microsoft Research NYC, aims to better understand the relationship between organizational networks and organizational outcomes. We have two main goals with this research project, first, we want to understand how variation in individual level communication networks relate to individual level outcomes such as promotions, productivity, terminations, etc. Second, we want to understand how major organizational decisions, such as employee transfers,

re-organizations, shifting to open-floor plans, etc., affect individual-level communication networks.

Currently, I'm in the process of deciding on a dissertation topic. This tutorial seems like an excellent opportunity for me to expose myself to cutting edge research on the economics of digitization and directly learn from the best researchers in the field. I'm positive that this tutorial will be extremely beneficial for me as I consider possible dissertation topics and I'd be thrilled to be able to attend.

Thank you for your time and consideration.

Sincerely,

Michael Zhao