BRIDGING THE GAP FROM ACADEMIC RESEARCH TO INDUSTRY IMPACT

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ABSTRACT

Academic methodological research is often done with the hope of creating mathematical methods that will be used in practice. At the same time, there is a significant gap between publishing papers and having the methods described actually be used in industry. In this talk, we offer advice for bridging this gap. We discuss challenges arising from a difference in focus between academic and industry research, and also an incomplete awareness within academia of the full context in which methods are deployed in industry. We then discuss strategies for overcoming these challenges, describing them using examples from the presenter's experiences as a data science manager at Uber working on Uber's carpooling product, UberPOOL, and as an academic developing Bayesian optimization algorithms for use at Yelp and the Bayesian optimization startup company SigOpt. This talk is aimed at academics who want their re-search to be used in industry, soon-to-graduate PhD students who are making a leap into an industry ca-reer, and practitioners interested in exploring ways to be more effective.

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PETER I. FRAZIER is an Associate Professor in the School of Operations Research and Information Engineering at Cornell University, and a Staff Data Scientist at Uber. He received a Ph.D. in Operations Research and Financial Engineering from Princeton University in 2009. His academic research is in optimal learning, including Bayesian optimization and optimization via simulation, focusing on applications in e-commerce, materials design, and transportation. At Uber, he managed data science for UberPOOL, Uber's carpooling product, from 2015 to 2016 while on sabbatical leave from Cornell, and now advises a number of driver-focused data science teams. He is an associate editor for Operations Research, ACM TOMACS, and IISE Transactions, and is the recipient of an AFOSR Young Investigator Award and an NSF CAREER Award. His email address is pf98@cornell.edu.