Diag D. Davenport, M.S.

PERSONAL INFORMATION
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EDUCATION

PhD, Behavioral Science, The University of Chicago Booth School of Business 2023
Support Area: Economics
Advisors: Devin Pope, Sendhil Mullainathan
MS, Mathematics & Statistics, Georgetown University 2017
BS, Economics, The Pennsylvania State University 2014
BS, Management, The Pennsylvania State University 2013

RESEARCH INTERESTS

Behavioral economics, applied machine learning

RELEVANT COURSEWORK

Price Theory I & III (Murphy, Stole)
Information Economics (Kamenica)
Behavioral Economics (Pope)
Applications of Machine Learning to the Empirical Sciences (Mullainathan)
Household Decisions and Labor Markets (Voena)
Applied Econometrics (Hansen)
Wage Determination and Job Mobility (Neal)

TEACHING EXPERIENCE

2019 Business Statistics (MBA), Booth, TA for T. Kaji
Behavioral Economics & Public Policy (Undergraduate), UChicago, TA for J. Leitzel
Applications of ML to the Empirical Sciences (PhD), Booth, TA for S. Mullainathan

COMPUTATIONAL PACKAGES

Zhu L, Sellers K, Morris D, Shmueli G, **Davenport D** (2017) cmpprocess: Flexible Modeling of Count Process, https://cran.r-project.org/web/packages/cmpprocess/index.html

Sellers KF, Morris D, Balakrishnan N, **Davenport D** (2017) multicmp: Flexible Modeling of Multivariate Count Data via the Multivariate Conway-Maxwell-Poisson Distribution, https://cran.r-project.org/web/packages/multicmp/index.html

NBER Statement of Interest

Economics is a discipline that has extended a common framework to address questions historically answered by disparate fields, such as sociology, law, and psychology. Another way to extend a discipline is to infuse new methods. From this perspective, the emergence of ML provides a rich opportunity for the future of the field. My research aims to blend economics, psychology, and ML to uncover insights in important settings. Ongoing work includes:

- ML is a science of prediction. Therefore, we can use it to understand why people mispredict states of the world. For example, venture capitalists receive various cues about a startup, and then predict the eventual success of the company. By using ML to identify predictors of what companies investors choose and those of what companies end up being successful, we can begin to understand what cues are being misweighted.
- We might also want to help people make better predictions and decisions. In bail decisions in NYC, judges are armed with a predictive algorithm, but observe many things in the courtroom that are unobservable to the algorithm (e.g., does the defendant's family show up). I am currently exploring whether the judge can efficiently use this private information and *override* the algorithmic recommendation to make even better decisions than the algorithm could achieve by itself.
- Finally, what are some implications of firms using algorithms? For example, Facebook algorithmically recommends people you may know. Given evidence of algorithmic bias in other settings, it seems plausible that Facebook's algorithms run the risk of narrowing the breadth of those with whom we interact online, and reinforcing or exacerbating the high levels of segregation that characterize real-life interactions. My current research seeks to document this bias and propose resolutions that reduce the in-group insulation on the platform.