

# Edward McFowland III

Assistant Professor



## EDUCATION

- **Ph.D. 2015**  
Information Systems and Management, Carnegie Mellon University
- **M.S. 2014**  
Machine Learning, Carnegie Mellon University
- **M.Phil. 2013**  
Public Policy, Carnegie Mellon University
- **M.S. 2009**  
Information Systems and Management, Carnegie Mellon University
- **B.S. 2009**  
Information Systems, Carnegie Mellon University

## EXPERTISE

- Data Mining & Machine Learning
- Data Science & Computational Social Science
- Heterogeneous Treatment Effects & Causal Inference
- Anomalous Pattern Detection
- Hypothesis Generation & Testing
- Scan Statistics
- Big Data Analytics

## ABOUT

His research interests—which lie at the intersection of Information Systems, Machine Learning, and Public Policy—include the development of computationally efficient algorithms for large-scale statistical machine learning and “big data” analytics. More specifically, his research seeks to demonstrate that many real-world problems faced by organizations, and society more broadly, can be reduced to the tasks of anomalous pattern detection and discovery. As a data and computational social scientist, his broad research goal is bridging the gap between machine learning and the social sciences (e.g., economics, public policy, and management) both through the application of machine learning methods to social science problems and through the integration of machine learning and econometric methodologies. His research on these topics has been published in leading Machine Learning and Statistics journals.

Prior to joining the University of Minnesota, he received a Bachelors degree, three Masters degrees, and a Doctorate degree from Carnegie Mellon University. During graduate school, he was the recipient of the Suresh Konda Research Paper Award, the William W. Cooper Doctoral Dissertation Award, an AT&T Labs fellowship, and an National Science Foundation graduate research fellowship.

## RECENT WORKS

1. S. Speakman, S. Somanchi, E. McFowland III, and D. B. Neill. Penalized fast subset scanning. *Journal of Computational and Graphical Statistics*, 2015, in press. **Selected for “Best of JCGS” invited session by the journal’s editor in chief.**

2. S. Speakman, E. McFowland III, and D. B. Neill. Scalable detection of anomalous patterns with connectivity constraints. *Journal of Computational and Graphical Statistics*, 2015, in press.
3. E. McFowland III, S. Speakman, and D. B. Neill. Fast generalized subset scan for anomalous pattern detection. *Journal of Machine Learning Research*, 14: 1533-1561, 2013.