MICHAEL W. JOHNSON

Address: 1300 University Ave, Rm 1507, Madison, WI, 53706
Email: mwjohnson8@wisc.edu ◇ **Phone:** (806) 549-1921 ◇ **GitHub & LinkedIn:** mwjohnson13

EDUCATION

University of Wisconsin-Madison, Madison, WI   *Anticipated May 2021*
Doctor of Philosophy in Statistics, GPA: 3.65
Research Area: Causal Inference, Heterogeneous Treatment, Noncompliance, Machine Learning

Washington University School of Medicine, St. Louis, MO   *Dec. 2015*
Master of Science in Biotatistics, GPA: 3.93

Texas Tech University, Lubbock, TX   *May 2014*
Bachelor of Science, *Magna Cum Laude*, in Mathematics, GPA: 3.83

RESEARCH EXPERIENCE

Research Assistant   *Aug. 2016-Present*
Department of Statistics and Department of Biostatistics and Medical Informatics, UW-Madison

1. Estimating Individualized Treatment Rules in the Context of Noncompliance
- Expanded upon the method outcome weighted learning using instrumental variables and a propensity for compliance to determine optimal treatment rules in the presence of noncompliance.

2. Detecting Heterogeneous Treatment Effect with Instrumental Variables
- Created method using matching and instrumental variables to simultaneously discover and infer heterogeneous complier average treatment effects using classification and regression trees.
- Manuscript available on arXiv [https://arxiv.org/abs/1908.03652].

3. Graphical Diagnostics for Matching
- Developed new data visualizations to diagnose performance of matching.

WORK EXPERIENCE

Summer Internship, Merck Sharp & Dohme Co.   *Jun. 2020-Aug. 2020*
Identified sequences of promotions to focus on for the Next Best Engagement program.
- Trained deep convolutional neural networks and multilayer perceptrons to predict promotion sequences for the Market Analytics and Investment Optimization's Promotion Optimization team.

STAT 998 Statistical Consulting, UW-Madison   *Sep. 2018-Dec. 2018*
Consulted with non-statistician university researchers to define and analyze research questions;
Communicated and delivered clear and concise analyses and written reports.
- Analyzed effect of snow cover on storm trajectory and intensity using linear mixed models.
- Trained generalized linear models using Lasso regularization and random forests for variable selection to analyze the effect of using hand gestures in mathematical proofs.

SKILLS/EXPERTISE

Statistics	Experimental Design, Hypothesis Testing, Causal Inference
Modeling	Generalized Linear Models, Bayesian Models, Survival Analysis, Diagnostics
Machine Learning	Regularized Regression, Tree-based Models, Neural Networks, Ensembles
Computing	R, Matlab, Python, SAS, LaTeX, Shell, Git, SQL, Microsoft Office
Other	Consulting, Data Visualization, Technical Writing, Project Management

HONORS AND AWARDS

· T32 Bio-Data Science Training Grant, University of Wisconsin-Madison