

Kentaro Hoffman

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EMPLOYMENT

University of Washington, Seattle

Postdoctoral Scholar

Seattle, WA

June 1st 2023- Present

- Advised by: Tyler McCormick

Johns Hopkins University, Baltimore

Postdoctoral Scholar

Baltimore, MD

2022-2023

- Advised by: Peter Searson and Scott Zeger

AFFILIATIONS

Center for Statistics and the Social Sciences (CSSS) at UW *Postdoctoral Scientist*
eScience Institute at UW, *UW Data Science Postdoctoral Fellow*

EDUCATION

University of North Carolina, Chapel Hill

PhD in Statistics and Operations Research

Chapel Hill, NC

2017- 2022

- Dissertation: Borrowing from Your Neighbors: Three Statistical Techniques from Nontraditional Sources
- Advised by: Kai Zhang and Cynthia Rudin

Rice University

BA in Mathematics and Statistics

Houston, TX

2013- 2017

RESEARCH INTERESTS

Inference using Synthetic Data, Domain Adaptation, Data Science, Rashomon Sets, Generative AI, Decision Theory, Global Health

PUBLICATIONS

Preprint/Under Review.....

Stephen Salerno, Jiacheng Miao, Awan Afiaz, Kentaro Hoffman, Anna Neufeld, Qiongshi Lu, Tyler H. McCormick, Jeffrey T. Leek (2024) **ipd: An R Package for Conducting Inference on Predicted Data** *Under Review at Biostatistics*

Stephen Salerno, Kentaro Hoffman, Awan Afiaz, Anna Neufeld, Tyler McCormick, and Jeffrey T. Leek **Sample Size Considerations for Post-Prediction Inference** *Under Review at AISTATS 2025*

Kentaro Hoffman, Stephen Salerno, Jeff T. Leek, Tyler McCormick (2024) **Some models are useful, but for how long?: A decision theoretic approach to choosing when to refit large-scale prediction models** *In preparation for the Journal of the American Statistical Association Special issue on AI*

Qirui Zhao, Kentaro Hoffman, Tyler McCormick (2024) **Two phase sampling with economic consid-**

erations using Post-Prediction Inference *In preparation for the Journal of the American Statistical Association Special issue on AI*

Kentaro Hoffman, Stephen Salerno, Awan Afiaz, Jeffrey T. Leek, Tyler H. McCormick (2024) **Do We Really Even Need Data?** *In preparation for Science*

Journal/Conference Publications.....

Kentaro Hoffman, Tyler McCormick (2024) **Bayesian Optimal Experimental Design of Streaming Data Incorporating Machine Learning Generated Synthetic Data** *Accepted at NeurIPS 2024 Workshop on Bayesian Decision-making and Uncertainty*

Simon Dovan Nguyen, Kentaro Hoffman, and Tyler McCormick **Using Rashomon Sets for Robust Active Learning** (2024) *Accepted at NeurIPS 2024 Workshop on Bayesian Decision-making and Uncertainty*

Adam Visokay, Trinity Fan, Kentaro Hoffman, Stephen Salerno, Jeffrey T. Leek, Li Liu, Tyler H. McCormick (2024) **From Narratives to Numbers: Valid Inference Using Language Model Predictions from Verbal Autopsy Narratives** *Accepted at the Conference on Language Models 2024*

Harsh Parikh*, Kentaro Hoffman*, Haoqi Sun*, Wendong Ge, Rajesh Amerineni, Lin Liu, Alexander Volfovsky, Sahar Zafar, Cynthia Rudin, M. Brandon Westover. (2023) **Effects of epileptiform activity on discharge outcome in critically ill patients in the USA: a retrospective cross-sectional study** *Lancet Digital Health* ,Vol. 5, Issue 8, pp. 495–e502

Hoffman, K. Lees, Johnathan, and Zhang, Kai. (2023) **Local Change Point Detection and Signal Cleaning using EEMD with applications to Acoustic Shockwaves** *Circuits Systems and Signal Processing* , Vol 42, Number 8, pp. 4669–4690

Hoffman, K. Babichev, A. and Dabaghian, Y. (2016) **A model of topological mapping of space in bat hippocampus..** *Hippocampus* 26: 1345-1353.

Peer Reviewed short comment.....

Ruobin Gong, Kentaro Hoffman, Yifan Cui, and Jan Hannig. **Technical Comment on “Policy impacts of statistical uncertainty and privacy”** *Science* DOI:10.1126/science.adf9724

Hoffman, K., Hannig, J. and Zhang, Kai. (2021) **Comments on “A Gibbs sampler for a class of random convex polytopes,** *Journal of the American Statistical Association* 116:535, 1206-1210

Technical Report

Kentaro Hoffman, Tyler McCormick, and Jan Hannig. (2024) **Dempster-Shafer P-values: Thoughts on an Alternative Approach for Multinomial Inference** <https://arxiv.org/abs/2402.17070>

Press.....

Fitzgerald, S. (2023, July 20). New study shows association between Epileptiform Activity and Poor ICU Outcomes. *Neurology Today*

HONORS AND AWARDS

eScience Institute Azure Compute Funding (\$ 6,500 Award)	2023-2024
eScience Institute Postdoctoral Fellowship (\$ 2,000 Award)	2023-2024
SAMSI Research Assistant Fellowship	2022
NIH BD2K Biomedical Graduate Fellow	2017-2022

SOFTWARE

IPD (co-owner) <https://github.com/ipd-tools>

The Inference on Predicted Data is a package to allow one to perform valid statistical inference when some of the data is generated from a black-box AI model. *Waiting approval from CRAN*

PRESENTATIONS

Valid Inference Using Language Model Predictions from Verbal Autopsy Narratives <i>eScience Institute (UW)</i>	2024
Fairness and Pitfalls in Fairness for Causality <i>Guest Lecturer for COMPSCI 198 (UC Berkley)</i>	2021
Fairness and Pitfalls in Fairness for Causality <i>Guest Lecturer for COMPSCI 198 (UC Berkley)</i>	2021
Causal Estimation of Seizure-Like Brain Activity <i>UNC BIOS/STOR Joint Seminar</i>	2021
Multi-Resolution Inference for Multinomial Tests of Uniformity using Dempster-Shafer <i>University of Liverpool Institute for Risk and Uncertainty.</i>	2021
Multi-Resolution Inference for Multinomial Tests of Uniformity using Dempster-Shafer <i>UNC STOR Graduate Seminar</i>	2021
Causal Estimation of Seizure-Like Brain Activity <i>Joint Statistical Meeting, Seattle</i>	2021

TEACHING EXPERIENCE

PhD Qualifying Exam Recitation (Instructor) <i>University of North Carolina Chapel Hill</i>	Chapel Hill, NC 2021
STOR 320: Introduction to Data Science (Instructional Assistant) <i>University of North Carolina Chapel Hill</i>	Chapel Hill, NC 2021
STOR 120: Foundations of Statistics and Data Science (Primary Instructor) <i>University of North Carolina Chapel Hill</i>	Chapel Hill, NC 2020
STOR 155: Introduction to Data Models and Inference (Primary Instructor) <i>University of North Carolina Chapel Hill</i>	Chapel Hill, NC 2019-2020
STAT 601: Neural Machine Learning (Instructional Assistant) <i>Rice University</i>	Houston, TX 2017

MENTORSHIP

Qirui Zhao, UW Statistics
Adam Visokay, UW Sociology

Currently working on MS Thesis
Currently working on PhD Thesis

Trinity Fan, UW Statistics

Awan Afiaz, UW Biostatistics

Jizhou Tian, JHU, Biostatistics Master Thesis,

Mikhal Ben-Joseph, B.A UNC STOR Undergraduate Research

Currently working on PhD Thesis

Currently working on PhD Thesis

Now at Brown Biostatistics

Now at Harvard Law

PROFESSIONAL ACTIVITIES

Programming Committee *NeurIPS workshop on Bayesian Decision Making and Uncertainty*

Student Aide to Hiring Committee *UW 2023*

Invited Chair “Recent developments in methods for digital Brain Health data” *JSM 2023*

Graduate Mentor *ASA DataFest 2020*

Referee Services *Management Science, NeurIPS Workshop, Stat*