Jason Poulos

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Postdoctoral Training

Brigham and Women's Hospital and Harvard Medical School, Boston, MA
Postdoctoral Fellow in Machine Learning, 2023 –

Harvard Medical School, Boston, MA
Postdoctoral Fellow in Data Science, Dept. of Health Care Policy, 2021 – 2023

Statistical and Applied Mathematical Sciences Institute and Duke University, Durham, NC
Postdoctoral Associate in Statistics, 2019 – 2021

Education

University of California, Berkeley
Ph.D., Political Science with a Designated Emphasis in Computational Science and Engineering, 2019 (NSF Graduate Research Fellowship)
M.A., Political Science, 2014

University of Massachusetts, Amherst
B.A., Economics (Phi Beta Kappa)

Selected Articles

Jason Poulos, Marcela Horvitz-Lennon, Katya Zelevinsky, Thomas Huijskens, Pooja Tyagi, Jiaju Yan, Jordi Diaz, Tudor Cristea-Platon, and Sharon-Lise Normand (2023+). "Targeted Learning in Observational Studies with Multi-Valued Treatments: An Evaluation of Antipsychotic Drug Treatment Safety." *Statistics in Medicine*. arXiv:2206.15367.

Jason Poulos, Sharon-Lise Normand, Katya Zelevinsky, John Newcomer, Denis Agniel, Haley Abing, and Marcela Horvitz-Lennon (2023). "Antipsychotics and the Risk of Diabetes and Death among Adults with Serious Mental Illnesses." *Psychological Medicine*.

David Rios Insua, Roi Naveiro, Víctor Gallego, and **Jason Poulos** (2023). "Adversarial Machine Learning: Bayesian Perspectives." *Journal of the American Statistical Association*, 115(543): 2195-2206. arXiv:2003.03546.

Zhenhua Wang, Olanrewaju Akande, **Jason Poulos**, and Fan Li (2022). "Are Deep Learning Models Superior for Missing Data Imputation in Surveys? Evidence from an Empirical Comparison." *Survey Methodology*, 48(2): 375-399. arXiv:2103.09316.

Jason Poulos and Shuxi Zeng (2021). "RNN-Based Counterfactual Prediction, with an Application to Homestead Policy and Public Schooling." *Journal of the Royal Statistical Society, Series C*, 70(4): 1124-1139. arXiv:1712.03553.

Jason Poulos and Rafael Valle (2021). "Character-Based Handwritten Text Transcription with Attention Networks." *Neural Computing & Applications*, 33(16):

10563-10573. arXiv:1712.04046.

Kellie Ottoboni and **Jason Poulos** (2020). "Estimating Population Average Treatment Effects from Experiments with Noncompliance." *Journal of Causal Inference*, 8(1): 108-130. arXiv:1901.02991.

Jason Poulos and Rafael Valle (2018). "Missing Data Imputation for Supervised Learning." *Applied Artificial Intelligence* 32(2): 186-196. arXiv:1610.09075.

🎓 Full list of articles on Google Scholar.

Manuscripts Under Review

"Revisiting Diabetes Risk of Olanzapine versus Aripiprazole for Serious Mental Illness Care" (with Marcela Horvitz-Lennon, Denis Agniel, Sharon-Lise Normand, John Newcomer, Katya Zelevinsky, and Jeannette Tsuei). Submitted.

"State-Building through Public Land Disposal? An Application of Matrix Completion for Counterfactual Prediction." Revise & resubmit, *Statistics and Public Policy*. arXiv:1903.08028.

Professional Service

Book Reviewer: Springer Mathematics

Conference Reviewer: Artificial Intelligence and Statistics (AISTATS; 2023, 2024); Machine Learning for Health (ML4H; 2021, 2022, 2023); Neural Information Processing Systems (NeurIPS): Ethics Review (2023), Workshop on Machine Learning and the Physical Sciences (2019, 2020); Uncertainty in Artificial Intelligence (UAI; 2021)

Journal Reviewer: (> 1 papers) *Alexandria Engineering Journal*; *Applied Artificial Intelligence* (3); *Applied Sciences* (2); *Applied Stochastic Models in Business and Industry*; *Distributed and Parallel Databases*; *Economics & Politics*; *European Journal of Operational Research*; *Frontiers in Big Data – Data Mining and Management* (2); *GigaScience*; *Journal of Applied Econometrics*; *Journal of the Royal Statistical Society: Series C*; *PLOS ONE*; *PLOS Neglected Tropical Diseases*; *Sensors*; *Statistical Methods & Applications*; *Statistical Papers*; *Statistics and Public Policy*

Invited Presentations

Summer School on Modern Techniques in Survey Sampling, University of Ottawa, July 2022

Department of Mathematics, Université du Québec à Montréal, February 2022

Statistical Methods for Computational Advertising, Banff International Research Station, October 2021

Conference Presentations

Causal Data Science Meeting (CDSM; 2021, 2022)

RAND Center for Causal Inference Symposium (2022)

Joint Statistical Meetings (JSM; 2021, 2022)

Political Institutions and Political Economy Collaborative, Bedrosian Center, University of Southern California (2021, 2022)

Society for Political Methodology (PolMeth; 2020, 2021; Europe, 2021, 2022; Asia, 2022)

Eastern North American Region International Biometric Society (ENAR; 2022)

Online Causal Inference Seminar (OCIS; 2021†)

Big Data Meets Survey Science (BigSurv20; 2020)

Data Science, Statistics & Visualization (DSSV; 2020)

American Political Science Association (APSA; 2014*, 2015, 2018‡)

Midwest Political Science Association (MPSA; 2018)

**poster*; †*discussant*; ‡*paper & discussant*

Grants and Fellowships

NSF Frontera Startup Allocation: "RNN-Based Counterfactual Prediction on High-Dimensional Longitudinal Health Data" (SES20001), 2020-2021

NSF XSEDE Startup Allocation: "RNN-Based Counterfactual Time-Series Prediction" (SES180010), 2018-2019, 2020-2021 ($2,172)

Berkeley Empirical Legal Studies Graduate Fellowship, University of California, Berkeley, School of Law, 2016-2017 ($1,000)

National Science Foundation Graduate Research Fellowship, 2013-2018

Teaching Interests

AI and Health; Causal Inference; Scientific Programming

Teaching & Mentoring

Graduate Student Instructor, Department of Political Science, University of California, Berkeley: Intro. to American Politics (undergrad), spring 2017 and spring 2018; Intro. to Empirical Analysis & Quantitative Methods (undergrad), fall 2018

Research Mentor, Undergraduate Research Apprentice Program (URAP), University of California, Berkeley, fall 2016 and spring 2017

Technical skills

Languages: R (expert); Python (moderate); bash (moderate); C/C++/UPC (novice)

VCS: git + github; SVN

Frameworks & libraries: TensorFlow; Keras; PyTorch; scikit-learn; Open MPI

Operating systems: Linux (CentOS; Ubuntu)