

Ravi B. Sojitra

Curriculum Vitae

December 2023

United States citizen.

Native English speaker.

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Education

- 2020–Present PhD **Stanford University**
Management Science and Engineering
Advisors: Guido Imbens and Vasilis Syrgkanis
Research Area: Causal inference under interference (e.g. network or dynamic treatment effects)
- 2018–2020 MS **New York University**
Applied Statistics for Social Science Research
Concentration: Computational Methods
- 2010–2014 BA **Rutgers University—Newark**
Biology and Philosophy
Honors Thesis: Age Differences in Positive and Negative Probabilistic Feedback Learning

Relevant Employment: Industrial Research

- 2022–Present **Meta Platforms**, Visiting Research Scientist (1.5 years)
Central Applied Science (formerly called Core Data Science)
- 2019–2020 **Microsoft Research NYC**, Research Intern (4 full time internships, 5 months consulting)
Computational Social Science Group

Relevant Employment: Academic Research

- 2020–Present **Stanford University**, PhD Candidate
Department of Management Science and Engineering
- 2016–2020 **Rutgers University—Newark**, Research Technician
Department of Mathematics and Computer Science
- 2014–2016 **Rutgers University—Newark**, Research Assistant
Center for Molecular and Behavioral Neuroscience

Relevant Employment: Teaching

- Fall 2023, Fall 2021 **Stanford University**, Course Assistant
Winter 2023 **Stanford University**, Lead Course Assistant
Course: *Fundamentals of Data Science: Prediction, Inference, Causality*
Instructor: Professor Ramesh Johari
- Fall 2019 **New York University**, Course Assistant and Grader
Course: *Messy Data and Machine Learning*
Instructor: Professor Ravi Shroff

Awards, Honors, and Scholarships

- 2020 Steinhardt ASH Leadership Award, New York University
- 2018–2020 21st Century Scholarship, New York University
- 2014 Charles I. Biederman Award (*Department award for Philosophy*), Rutgers University—Newark
- 2013 Phi Beta Kappa (*early induction*), Rutgers University—Newark
- 2010–2014 Dean's Scholarship, Rutgers University—Newark
- 2010–2014 Rutgers Scarlet Scholarship, Rutgers University—Newark
- 2010–2014 Newark Chancellor's Scholarship, Rutgers University—Newark

Intellectual Property

- U.S. Patent 11,468,322 Method for selecting examples to explain decisions of algorithms.

Conference Talks

1. "Local Interference Adjustments for Treatment Effect Identification and Inference" (2023). Talk given at the 2023 American Causal Inference Conference.
2. "Spillover effects in conversation ranking" (2022). Talk given at the 2022 Conference On Digital Experimentation.
3. "Tradeoffs in defining experimental units and designing RCTs with multiple sources of interference" (2021). Talk given at the 2021 Conference On Digital Experimentation.
4. "Measuring the Long Term Impact of TV Ads Using Search" (2020). Talk given at the 16th Symposium on Statistical Challenges in Electronic Commerce Research.

Research Articles: Journal article in preparation

1. Hill*, Shawndra, **Ravi B. Sojitra***, David Rothschild, and K. Sudhir (n.d.). "Online Search Spillovers from TV Advertising: An Observational Study of America's Households and Largest Advertisers". In preparation.

Research Articles: Journal articles

1. Yang*, Scott Cheng-Hsin, Wai Keen Vong*, **Ravi B. Sojitra***, Tomas Folke, and Patrick Shafto (2021). "Mitigating belief projection in explainable artificial intelligence via Bayesian teaching". *Scientific Reports* 111, pp. 1–17.
2. **Sojitra***, **Ravi B.**, Itamar Lerner*, Jessica R Petok, and Mark A Gluck (2018). "Age affects reinforcement learning through dopamine-based learning imbalance and high decision noise – not through Parkinsonian mechanisms". *Neurobiology of aging* 68, pp. 102–113.

Research Articles: Conference articles

1. Folke, Tomas, ZhaoBin Li, **Ravi B. Sojitra**, Scott Cheng-Hsin Yang, and Patrick Shafto (2021). "Explainable AI for natural adversarial images". In: *ICLR (Workshop on Responsible AI)*.
2. Vong*, Wai Keen, **Ravi B. Sojitra***, Anderson Reyes, Scott Cheng-Hsin Yang, and Patrick Shafto (2018). "Bayesian teaching of image categories". In: *Proceedings of the 40th Annual Conference of the Cognitive Science Society*.

Editorial

1. Lerner, Itamar, **Ravi B. Sojitra**, and Mark A Gluck (2018). "How age affects reinforcement learning". *Aging (Albany NY)* 1012, p. 3630.

Open Source Code (127 stars, 33 clones)

- **Probabilistic Linear Discriminant Analysis:** <https://github.com/RaviSoji/plda>. My Python implementation of the model presented by Sergey Ioffe (2006). I wrote it so that you can both (1) extract the features you would ordinarily want from plain linear discriminant analysis and (2) classify new data using the underlying probabilistic model. I also wrote unit, integration, and inference tests for sanity checks.
- **Utility Functions for Google Colaboratory:** https://github.com/RaviSoji/colab_utils. If you work at an academic institution in the United States, you probably have unlimited Google Drive storage. `pull_from_gdrive()` and `push_to_gdrive()` are intended to be conceptually analogous to the pull and push commands in git.

Programming and Software Experience

Operating Systems	Unix (MacOS), Linux (CentOS and Ubuntu), Windows 10.
Software	Vim, Conda, Jupyter, RStudio, tmux, Git, Slurm Workload Manager, Microsoft Office.
Languages	Python, R, Bash, SQL (Hive, Presto, ScopeScript), Markdown (and RMarkdown), LaTeX.
Python packages	matplotlib, numpy, pandas, pytest, scipy, scikit-learn, unittest; pytorch, tensorflow.
R packages	Base R, tidyverse (e.g. dplyr, ggplot2, tidyr, readr, lubridate), models (e.g. glm, glmer, lm, lme4, lmerTest, randomForest, brms).

Service to the Community, Organization, and Profession: Examples

- 2021 — Present **Organizer** — Stanford University.
I organize biweekly (sometimes weekly) meetings about causal inference problems on platforms.
Write me an e-mail me if you would like to participate!
- 2020 — 2022 **Co-organizer** — Multi-university group.
Margarita Boyarskaya and I co-organized monthly reading group meetings on Causality and Fairness.
- 2017 — 2018 **Mentor** — Rutgers University, Newark campus.
Helped Professor Patrick Shafto supervise 1 undergraduate thesis project on Generative Adversarial Networks for image analysis and 1 MS thesis project on Dirichlet Process Mixture Models for video analysis.