

Andy Shen

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Relevant Links: GitHub / Google Scholar / Personal Website

EDUCATION

University of California, Berkeley

August 2021 - Present

Doctor of Philosophy (PhD), Statistics

Advisors: **Haiyan Huang, Samuel Pimentel**

University of California, Los Angeles (UCLA)

September 2017 - June 2021

Bachelor of Science (BS), Statistics

GPA: 3.90

Magna Cum Laude

TECHNICAL SKILLS

Advanced: R (including tidyverse, RMarkdown/Quarto, and Shiny), GitHub, L^AT_EX

Proficient: Python (including Pytorch for deep learning)

SELECTED PUBLICATIONS

McLoughlin, A.*, **Shen, A.***, Lin, J., Song, Z., Bickel, P.J., & Huang, H. (2024). Assessing the Role of Volumetric Brain Information in Multiple Sclerosis Progression. Working paper.

Shen, A., Visoki, E., Barzilay, R., & Pimentel, S. D. (2024). A Calibrated Sensitivity Analysis for Weighted Causal Decompositions. *arXiv preprint arXiv:2407.00139*.

Rumsey, K., Francom, D., & **Shen, A.** (2023). Generalized bayesian mars: Tools for emulating stochastic computer models. *SIAM/ASA Journal on Uncertainty Quantification*, 12 (2), 646-666.

Lee, S., **Shen, A.**, Park, J., Harrigan, R., Hoff, N., Rimoin, A., & Paik Schoenberg, F. (2021). Comparison of prospective Hawkes and recursive point process models for Ebola in DRC. *Journal of Forecasting*. 41(1): 201-210.

**denotes equal contribution*

TALKS AND PRESENTATIONS

A Calibrated Sensitivity Analysis for Weighted Causal Decompositions

- Joint Statistical Meetings, August 2024
- American Causal Inference Conference, June 2024

Assessing the Role of Volumetric Brain Information in Multiple Sclerosis Progression

- Berkeley Statistics Annual Research Symposium, April 2024

AWARDS AND HONORS

- **NSF Graduate Research Fellowship:** September 2022 - present
- **Genentech Fellowship:** January 2022 - September 2022

EXPERIENCE

Biostatistics Intern

Jun 2023 - Aug 2023

Denali Therapeutics

- Used machine learning models to identify biomarkers as surrogate endpoints in clinical trials.
- Utilized causal inference techniques (covariate adjustment) to perform sample size estimation for Phase I clinical trial enrollment.
- Developed end-to-end machine learning and estimation pipeline (R package) for clinicians to utilize our method for sample size estimation.

Graduate Student Researcher

Jan 2022 - Present

UC Berkeley Department of Statistics

- Developed statistical and machine learning methods to identify brain biomarkers of multiple sclerosis progression (collaboration with Genentech).
- Developed sensitivity analysis framework for causal disparity estimation (collaboration with Children's Hospital of Philadelphia).
- Performed matched cohort analysis for analyzing adverse outcomes of babies with neonatal opioid withdrawal syndrome (collaboration with Kaiser Permanente).

Statistical Sciences Intern

Jun 2016 - Aug 2021

Los Alamos National Laboratory - Statistical Sciences Group (CCS-6)

- Utilized Bayesian Multivariate Adaptive Regression Splines (BMARS) and Reversible-Jump MCMC to develop robust model with t-distributed likelihood.
- Developed R package (TBASS) that uses Robust BMARS to fit nonlinear data with outliers.
- Analyzed data on water use in cooling towers and created statistical models to determine relationships between season and availability of water.
- Surveyed and interviewed laboratory workforce to determine future hiring needs for more than 40 divisions.
- Developed and implemented a Microsoft Outlook add-on that warns users when an email is being sent to an external address.

Lead Resident Assistant (RA)

March 2019 - June 2021

UCLA Residential Life

- Rated as exceeding expectations in every job category by both peers and supervisors in performance review.
- Promoted to Lead RA for University Apartments within 3 months of employment.
- Collaborated with Resident Directors, Assistant Directors, and other professional staff to create methods to improve RA duty protocols, resulting in organization-wide protocol improvements affecting over 300 staff members and 13,000 residents.
- Fostered the development of relationships and community among undergraduate students of various years and backgrounds in a residential community, resulting in 95% of residents agreeing that I maintained a strong sense of community.
- Counseled and advised residents with personal and academic-related matters, including roommate conflicts, academic difficulties, and crisis intervention, resulting in the highest total response rate for residential experience survey.
- Implemented programs and events to assist residents in academic success, personal/career development, and social justice awareness. Consistently hosted events with 100-150% higher attendance rates than typical event averages.
- Engaged in active, on-call duty coverage of residential community, consisting of enforcing housing conduct policies, documenting policy violations, writing incident reports, and emergency response.