Justin Williams, Ph.D.

Contact

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https://williazo.github.io

github.com/williazo

Software Skills

R *Preffered*

Git *GitLab, GitHub*

Python *Research*

SQL *PostgreSQL, MySQL*

CI/CD *GitLab, GitHub*

AWS *S3, EC2, ECR*

Docker *Productization*

SAS *Coursework*

Stata *Coursework*

Language

English *Native*

Spanish *Elementary*

Biography

Graduated from the University of California, Los Angeles (UCLA) with a Ph.D. in Biostatistics. Currently I am employed with the Los Angeles Dodgers as a Senior Quantitative Analyst. I have a wide variety of experiences interning in industry along with extensive research work within the field of autism spectrum disorder

Professional Experience

Senior Quantitative Analyst — **11/2022 - Present**
Los Angeles Dodgers-Los Angeles, CA

Quantitative Analyst — **08/2020 - 10/2022**
Los Angeles Dodgers-Los Angeles, CA

- Built performance model in collaboration with amateur scouting department to quantify expected hitter performance
- Led productization efforts for prediction and re-train tasks using Airflow and dependency management solutions such as `renv` (R) and `poetry` (Python)
- Developed and deployed internal repository to host proprietary R packages

Product Development Biostatistics Intern — **Summer 2019**
Genentech-South San Francisco, CA

- Designed software to simulate longitudinal differential abundance for microbiome: microbiomeDASim
  - Flexibly specify form of the trend over time including polynomial, oscillating, or hockey stick trends
  - Define desired sample size, number of repeated measures, and signal:noise ratio
  - Multiple choices for longitudinal dependence including: AR(1), compound, or independent
- Compared multiple methods for estimating differential abundance over time

Biostatistics R&D Intern — **Summer 2018**
Alcon-Ft. Worth, TX

- Developed methodology for parameter estimation of censored data from truncated normal distribution
- Investigated available methods for estimation with left censoring using R and SAS
- Produced functions and macros to simulate data and calculate bias metrics
- Applied methods to estimate parameters for historical clinical trial data

Education

09/2016 - 12/2020

Biostatistics (Ph.D.)

University of California Los Angeles

Dissertation: "Methods for estimating causal effects for multivariate continuous exposure".
Advisor: Catherine Crespi

09/2014 - 06/2016

Biostatistics (M.S.)

University of California Los Angeles

Bachelor's thesis: "Bayesian hierarchical spatial analysis of autism spectrum disorder services in the Los Angeles Unified School District".
Advisor: Rob Weiss

09/2009 - 05/2013

Mathematics (B.A.)

Boston College

Research Interests

- Causal Inference
- Longitudinal Analysis
- Bayesian Analysis
- Machine Learning

Personal Interests

- Baseball
- Hiking
- Cooking
- Travel

Predictive Analytics Intern — **Summer 2016**
Ingram Micro-Irvine, CA

- Illustrated regional product demand for products to inform warehouse stocking decisions
- Pulled purchasing and warehouse transaction information from servers via SQL
- Engineered product similarity scores based on feature list with mixed scale variables

Research Experience

Graduate Student Researcher — **2015 - 2019**
Connie Kasari Lab, UCLA Semel Institute

- Constructed Bayesian multi-level hierarchical model incorporating spatial random effects
- Developed longitudinal data visualization tools available in GitHub R package (ggplot.spaghetti)
- Clinical trial longitudinal analysis using mixed effects and generalized estimating equations
- Adjusted for empirical trends using zero-inflated and hurdle models with count outcomes
- Automated analysis for inter rater reliability
- Data management and data cleaning for multisite clinical trial database
- Co-authored multiple papers as primary statistician

Teaching Experience

Special Reader: — **Fall Quarter 2017**
Computer Management of Health Data
UCLA, Biostatistics Department

- Taught data management tools with SAS to 23 first-year Biostatistics graduate students
- Introduced tools for creating randomization schemes and generating reproducible data

Special Reader: — **Winter Quarter 2016**
Basic Biostatistics
UCLA, Biostatistics Department

- Led weekly lab sections using Stata on topics such as linear regressions, ANOVA, logistic regres-sion, and non-parametric tests
- Designed and administered discussion sections weekly
- Graded homework and lab assignments

Awards & Honors

Dissertation Year Fellowship ($20,000)

Awarded By: UCLA Graduate Division
Received: December 2019 – December 2020

Most Outstanding Oral Presentation ($500)

Awarded By: Western North American Region of the International Biometric Society
Received: June 2019

Juneal Marie Smith Fellowship in International Nutrition ($2,500)

Awarded By: UCLA Fielding School of Public Health
Received: June 2019

Graduate Summer Research Mentorship ($6,000)

Awarded By: UCLA Graduate Division
Received: June 2017 - September 2017

Publications

- Sturm, A., **Williams, J.**, and Kasari, C. (2021). Who gains and who loses? Sociodemographic disparities in access to special education services among autistic students. Autism Research, 14:1621–1632. doi:10.1002/aur.2517.
- Melamed, K.H, **Williams, J.**, Wang, X., Hu S., Nguyen C., Cui, J., & Deng, J.C. Development of secondary bacterial pneumonia in adults presenting with influenza versus noninfluenza viral res-piratory infection. Therapeutic Advances in Respiratory Diseases, 14. doi:10.117/1753466620963026.
- **Williams, J.R.**, and Crespi, C.M. (2020). Causal inference for multiple continuous exposures via the multivariate generalized propensity score. arXiv preprint. arXiv:2008.13767
- **Williams, J.R.**, Kim, H. and Crespi, C.M. (2020). Modeling observations with a detection limit using a truncated normal distribution with censoring. BMC Med Res Methodol, 20:170. doi:10.1186/s12874-020-01032-9
- **Williams, J.**, Bravo H.C., Tom J., and Paulson J.N (2020). *microbiomeDASim*: Simulating longitudinal differential abundance for microbiome data [version 2; peer review: 2 approved]. F1000Research, 8:1769. doi:10.12688/f1000research.20660.2
- Dean, M., **Williams, J.**, Kasari, C. and Orlich, O. (2020). Adolescents with autism spectrum disorder and social skills groups at school: A randomized trial comparing intervention environment and peer composition. School Psychology Review, 49(1):60-73. doi:10.1080/2372966X.2020.1716636
- Gulsrud, A., Carr, T., **Williams, J.**, Panganiban, J., Jones, F., Kimbrough, J., Shih, W., and Kasari, C. (2019), Developmental screening and early intervention in a childcare setting for young children at risk for autism and other developmental delays: A feasibility trial. Autism Research, 12(9):1423-1433. doi:10.1002/aur.2160
- Locke, J., **Williams, J.**, Shih, W. and Kasari, C. (2017), Characteristics of socially successful elementary school-aged children with autism. J Child Psychol Psychiatr, 58(1):94-102. doi:10.1111/jcp.12636

Presentations

2019 Joint Statistical Meetings — **Denver, Colorado**
"Maximum Likelihood Estimation of a Truncated Normal Distribution with Censored Data"

2019 Western North American Region (WNAR) of the International Biometric Society — **Portland, Oregon**
"Maximum Likelihood Estimation of a Truncated Normal Distribution with Censored Data"

2018 Joint Statistical Meetings — **Vancouver, BC, Canada**
"Propensity Score Methods for Studies with Clustered Data and Continuous Exposure"

2018 Gatlinburg Conference — **San Diego, CA**
"Using Clustering to Define ASD Subgroups with Differential Play Outcomes"