

Contact Information

Department of Statistics, University of Florida
Griffin-Floyd Hall, Gainesville, FL 32611

Email: matt.woojung@gmail.com

Work Experience

Mathematical Statistician, US Food and Drug Administration

Sep 2024 – Present

Center for Biologics Evaluation and Research

Ph.D. Research Intern, Regeneron Pharmaceuticals Inc.

May 2022 – Aug 2022

Mentor: Dr. Chenguang Wang

Education

Ph.D., Statistics, University of Florida

Aug 2024

Dissertation: Bayesian approaches to causal inference and missing data

Advisor: Dr. Michael J. Daniels

◇ Research Assistant, Department of Statistics

May 2020 – Aug 2024

◇ Teaching Assistant, Department of Statistics

Aug 2018 – May 2020

M.A., Statistics, Yonsei University

Feb 2018

Thesis: R package afttest for checking semiparametric accelerated failure time models

Advisor: Dr. Sangwook Kang

◇ Research Assistant, Department of Applied Statistics

Sep 2016 – Feb 2018

◇ Teaching Assistant, Department of Applied Statistics

Sep 2016 – Feb 2018

B.S., Mathematics and B.E., Economics, Kyung Hee University

Feb 2016

Research Interests

Bayesian method, non/semiparametric method, casual inference, mediation analysis, survival analysis, methods for incomplete data (intercurrent event & missing data), hierarchical model, software development

Skills

Software: High performance computing, R, Rcpp, RcppArmadillo, Stan, SAS, MATLAB, L^AT_EX, GitHub

Papers

† : Co-first author

Working Papers

5. **Bae, W.**, Daniels, M., and Wang, CG. (2025+) Missing data introduced by applying hypothetical strategies: are they really missing?
4. **Bae, W.**, Daniels, M., Hogan, J., and Chrysanthopoulou, S. (2025+) Semiparametric Bayesian inference for causal mediation in cluster randomized trials.
3. **Bae, W.**, Choi, D., Yan, J., and Kang, S. (2025+) **afttest**: model diagnostics for semiparametric accelerated failure time models in R

Published & Preprint

2. **Bae, W.**, Daniels, M., and Perri, M. (2024) A Bayesian nonparametric approach for causal mediation with a post-treatment confounder, *Biometrics*, accepted. [preprint](#)
1. Choi, D.[†], **Bae, W.**[†], Yan, J., and Kang, S. (2024) A general model-checking procedure for semiparametric accelerated failure time models, *Statistics and Computing*, 34 (3), 117, [link](#)

Software

R package & source code

afttest Model diagnostics for accelerated failure time models ([CRAN](#), [GitHub](#))
EDPmediationPOST Causal mediation with a post-treatment confounder ([GitHub](#))
ICEmissing Missing data introduced by applying hypothetical strategies ([GitHub](#))
rBARTmediation Mediation analysis using BART models with correlated random effects ([GitHub](#))
TSBBmediation Mediation analysis using two-stage Bayesian bootstrapping ([GitHub](#))

Presentation

† : Virtually

Invited Talk

Missing data introduced by applying hypothetical strategies: are they really missing?, *Regeneron*, Tarrytown, NY.[†] Oct 2023
A Bayesian nonparametric approach for causal mediation with a post-treatment confounder, *International Chinese Statistical Association China Conference*, Chengdu, Sichuan, China.[†] Jun 2023
Missing data introduced by applying hypothetical strategies: are they really missing?, *Society for Clinical Trials*, Baltimore, MD. May 2023
A Bayesian nonparametric approach for causal mediation with a post-treatment confounder, *Yonsei University*, Seoul, Korea. Dec 2022
Missing data introduced by applying hypothetical strategies: are they really missing?, *ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop*, Washington, D.C. Sep 2022

Topic Contributed Talk

Missing data introduced by applying hypothetical strategies: are they really missing?, *Joint Statistical Meeting*, Toronto, Canada. Aug 2023

Contributed Talk

Semiparametric Bayesian inference for causal mediation in cluster randomized trials, *Joint Statistical Meeting*, Portland, OR. Aug 2024
A Bayesian nonparametric approach for causal mediation with a post-treatment confounder, *Eastern North American Region*, Baltimore, MD. Mar 2024
Semiparametric Bayesian inference for causal mediation in cluster randomized trials, *Eastern North American Region*, Nashville, TN. Mar 2023
Causal mediation in weight management trials using Bayesian nonparametrics, *Joint Statistical Meeting*, Washington, D.C. Aug 2022
A more flexible Bayesian nonparametric approach to causal mediation, *Eastern North American Region*, Houston, TX. Mar 2022
A more flexible Bayesian nonparametric approach to causal mediation, *US-KOREA Conference*, Los Angeles, CA. Dec 2021
A more flexible Bayesian nonparametric approach to causal mediation, *Joint Statistical Meeting*, Seattle, WA.[†] Aug 2021

A more flexible Bayesian nonparametric approach to causal mediation, <i>International Society for Bayesian Analysis</i> , University of Connecticut, Storrs, CT. [†]	Jul 2021
R package afttest for checking semiparametric accelerated failure time models afttest, <i>Korean Statistical Society Fall Meeting</i> , Seoul, Korea.	Nov 2017

Contributed Poster

Missing data introduced by applying hypothetical strategies: are they really missing?, <i>Southern Regional Council on Statistics</i> , Jekyll Island, GA.	Oct 2022
Missing data introduced by applying hypothetical strategies: are they really missing?, <i>Statistics in Pharmaceuticals conference</i> , University of Connecticut, Storrs, CT. [†]	Aug 2022
Causal mediation in weight management trials using Bayesian nonparametrics, <i>International Society for Bayesian Analysis</i> , Montreal, Canada.	Jun 2022
A more flexible Bayesian nonparametric approach to causal mediation, <i>Southern Regional Council on Statistics</i> , Jekyll Island, GA.	Oct 2021
R package afttest for checking semiparametric accelerated failure time models afttest with an Induced Smoothing Approach, <i>Joint Statistical Meeting</i> , Philadelphia, PA. [†]	Aug 2020

Honors and Awards

Fellows

FDA-OCE-ASA Oncology Educational Fellows <i>Food and Drug Administration's Oncology Center of Excellence (FDA-OCE), the American Statistical Association (ASA), and the ASA's Biopharmaceutical Statistics Section (BIOP)</i>	Jan 2024
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Travel Award

College of Liberal Arts and Sciences at the University of Florida <i>Joint Statistical Meeting, Portland, OR.</i>	Aug 2024
College of Liberal Arts and Sciences at the University of Florida <i>Eastern North American Region, Baltimore, MD.</i>	Mar 2024
College of Liberal Arts and Sciences at the University of Florida <i>Joint Statistical Meeting, Toronto, Canada.</i>	Aug 2023
College of Liberal Arts and Sciences at the University of Florida <i>Eastern North American Region, Nashville, TN.</i>	Mar 2023
Boyd Harshbarger Travel Award (granted by NSF) <i>Southern Regional Council on Statistics</i>	Oct 2022
College of Liberal Arts and Sciences at the University of Florida <i>ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, D.C.</i>	Sep 2022
College of Liberal Arts and Sciences at the University of Florida <i>Joint Statistical Meeting, Washington, D.C.</i>	Aug 2022
International Society for Bayesian Analysis (granted by NSF) <i>International Society for Bayesian Analysis, Montreal, Canada.</i>	Jun 2022
College of Liberal Arts and Sciences at the University of Florida <i>Eastern North American Region, Houston, TX.</i>	Mar 2022
UKC Fellow Award (Korean-American Scientists and Engineers Association) <i>US-KOREA Conference, Los Angeles, CA</i>	Dec 2021
Boyd Harshbarger Travel Award (granted by NSF) <i>Southern Regional Council on Statistics</i>	Oct 2021

Scholarship

Internal Scholarship (Merit-based Scholarship), Yonsei University	2017S – 2017F
Superiority Scholarship (Merit-based Scholarship), Kyung Hee University	2013F – 2015S

Assistantship

Research Assistantship, **University of Florida**

May 2020 – Aug 2024

Teaching Assistantship, **University of Florida**

Aug 2018 – Apr 2020

Research Assistantship, **Yonsei University**

Sep 2016 – Feb 2018

Teaching Assistantship, **Yonsei University**

Sep 2016 – Feb 2018

Services

Journal Referee

Journal of the Korean Statistical Society

Military Service

Capital Mechanized Infantry Division, the Republic of Korea Army

Oct 2010 – July 2012

Served and honorably discharged from the Republic of Korea Army

Professional Memberships

Member, **Institute of Mathematical Statistics**

2023 – Present

Member, **International Society for Bayesian Analysis**

2021 – Present

Member, **Eastern North American Region**

2021 – Present

Member, **American Statistical Association**

2020 – Present

Member, **International Biometrics Society**

2017 – Present