

Qijia HE

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RESEARCH INTERESTS

Causal inference; Data-driven decision making; Machine learning; Deep learning; Generative AI

EDUCATION

University of Washington, Department of Statistics	Seattle, WA
Ph.D. in Statistics	2026 (Expected)
M.S. in Statistics	2023
Sun Yat-sen University, School of Mathematics	Guangzhou, China
B.S. in Statistics	2021
University of California, Berkeley	Berkeley, CA
Exchange student	2019

PUBLICATIONS

1. **He, Q.**, Gao, F., Dukes, O., Delany-Moretlwe, S., & Zhang, B. (2024). Generalizing the intention-to-treat effect of an active control from historical placebo-controlled trials: A case study of the efficacy of daily oral TDF/FTC in the HPTN 084 study. *Journal of the American Statistical Association*, 1-26.
 2. **He, Q.**, Zhang, S., LeBlanc, M. L., & Zhao, Y. Q. (2024). Estimating individualized treatment rules by optimizing the adjusted probability of a longer survival. *Statistical Methods in Medical Research*, 09622802241262525.
 3. Ting, Y., **He, Q.**, Shuxiao C., Bo Z. "The role of placebo samples in observational studies.", under review by *Journal of Causal Inference*
 4. Talham, C., MacKay, E., **He, Q.**, Zhang, B. "Developing and validating a treatment recommendation score with an application to the differential impact of transesophageal echocardiography on clinical outcomes post coronary artery bypass graft surgery.", *working paper*
- Book Chapter:
1. **He, Q.**, Zhao, Y. Q. . "Statistical Learning Methods for Estimating Optimal Individualized Treatment Rules from Observational Data." In: Chakraborty, B., Moodie, E.E., Laber, E.B., Cai, T., van der Laan, M, editors. *Handbook of Precision Medicine (Under review)*
 2. *Research on the Development Trend and Social Effect of Digital Economy* (In Chinese), published by China Social Sciences Press (ISBN: 978-7-5203-7735-5), engaged in the writing of all chapters except Chapter 4

RESEARCH EXPERIENCE

University of Washington	09.2023 - Present
<i>Advised by Prof. Alex Luedtke</i>	
<u>Project 1</u> : Variable importance for heterogeneous treatment effects for two-stage sampling	
<u>Project 2</u> : longitudinal modified treatment policies (LMTPs) for boosting intervals in COVE trials	
Fred Hutchinson Cancer Research Center	08.2022 - Present
<i>Advised by Prof. Bo Zhang</i>	
<u>Project 1</u> : Generalizability and transportability in causal inference	
- Collaborated in the novel design of a causal inference framework to infer the treatment effect of the active control using relevant historical placebo-controlled trial data;	
- Developed a doubly robust estimator that allows the integration of various machine learning methods	
<u>Project 2</u> : Mediation analysis for surrogate endpoint evaluation;	
<u>Project 3</u> : Validating individualized treatment rules (ITRs) using post-randomization events for HIV prevention	
- Developed a drug recommendation score for decision-making from a classification perspective	
Fred Hutchinson Cancer Research Center	03.2022 - 11.2022
<i>Advised by Prof. Yingqi Zhao</i>	
<u>Project</u> : Individualized treatment rules (ITRs) with censored data	

- Developed an optimal ITR estimation method by maximizing a nonparametric estimator of a new criterion based on classification perspective

Sun Yat-sen University

03.2020 - 10.2020

Advised by Prof. Ying Yan

Project: Covariate balance by optimizing an entropy loss under an inequality constraint

Advised by Prof. Jia Li

Project: Semi-supervised learning with label noise

- Reformed KNN to build the regularization model with weighted quadratic loss function and gradient descent
- Designed a four-stage semi-supervised algorithm based on KNN and SVM that includes denoising, initialization, updating, and cross prediction

PRESENTATIONS

Generalizing the intention-to-treat effect of an active control from historical placebo-controlled trials to an active-controlled trial

- The Translational Data Science Integrated Research Center Retreat, Poster Presentation. Kirkland, WA, 2023.
- 20th Annual STI & HIV Research Symposium, Poster Presentation. Seattle, WA, 2023.
- Joint Statistical Meetings, Poster Presentation. Portland, OR, 2024.

TEACHING AND TUTORING EXPERIENCE

Department of Statistics, University of Washington

01.2024 - 03.2024

- TA in Elements Of Statistical Methods (STAT 311)

Academic tutoring center, School of Mathematics, Sun Yat-sen University

09.2018 - 12.2018

- Tutor in Mathematics

Think Academy, Guangzhou

01.2018 - 05.2019

- TA in primary-school Olympiad Mathematics

SKILLS

R, Python, PyTorch, SQL, MATLAB, C++, Latex