

Hongxiang Qiu

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Current position

Wharton School, University of Pennsylvania

Postdoctoral researcher, Statistics

2021–now

Supervisor: Eric Tchetgen Tchetgen, PhD and Edgar Dobriban, PhD

Research areas: machine learning, causal inference, semiparametric inference

Education

University of Washington

PhD, Biostatistics

2016–2021

Dissertation advisor: Marco Carone, PhD and Alex Luedtke, PhD

The Chinese University of Hong Kong

B.Sc., Mathematics; Minor in Statistics

2012–2016

Capstone project advisor: Raymond Honfu CHAN, PhD

Teaching Experience

University of Washington

Tutor

Spring 2019

STAT 583: Advanced Theory of Statistical Inference

Topics including: empirical processes, semiparametric efficiency

Instructors: Alex Luedtke, PhD and Marco Carone, PhD

University of Washington

Teaching Assistant

Winter 2019

BIOST 557: Applied Statistics and Experimental Design

Topics including: one/two-sample t-test, linear models, GLMs, causation versus correlation

Instructor: Brian Leros, PhD

University of Washington

Grader

Winter 2018

STAT 582: Advanced Theory of Statistical Inference

Topics including: Bayes methods, decision theory, UMPU test
Instructor: Jon A. Wellner, PhD

Publications

(† stands for equal contribution.)

Methodology

1. **Qiu H**, Luedtke A, Carone M (2021). Universal sieve-based strategies for efficient estimation using machine learning tools. *Bernoulli*, 27(4), 2300–2336.
2. **Qiu H**, Carone M, Sadikova E, Petukhova M, Kessler R, Luedtke A (2020). Optimal individualized decision rules using instrumental variable methods. *Journal of the American Statistical Association* (with discussion), 116(533), 174–191.
3. Bobb J, **Qiu H**, Matthews A, McCormack J, Bradley K (2020). Addressing identification bias in the design and analysis of cluster-randomized pragmatic trials: a case study. *Trials*, 21(1), 289.
4. **Qiu H**, Luedtke A, van der Laan M (2019). Contribution to discussion of “Entropy Learning for Dynamic Treatment Regimes” by Jiang B, Song R, Li J, Zeng D. *Statistica Sinica*, 29(4): 1666–1678.

Application

5. Fitts W, Tassiou NR, Cisse FA, Vogel A, Atakla HG, Sakadi F, **Qiu H**, Conde ML, Balde AT, Bah AK, Hamani ABD, Anand P, Patenaude B, Mateen F (2019). School Status and its Associations among Children with Epilepsy in the Republic of Guinea. *Epilepsy & Behavior*, 97, 275–281.
6. Jang M, Sakadi F, Tassiou NR, Abass CF, Grundy SJ, Woga A, Kenda BA, Lamine CM, Talibé BA, **Qiu H**, Cohen JM, Carone M, Mateen FJ (2018). Impact of Poorly Controlled Epilepsy in the Republic of Guinea. *Seizure*, 61, 71–77.
7. Zhou Y†, **Qiu H**†, Xu S (2017). Modeling continuous admixture using admixture-induced linkage disequilibrium. *Scientific Reports*, 7, 1–10.

Preprint/under review

8. **Qiu H**, Carone M, Luedtke A (2022+). Individualized treatment rules under stochastic treatment cost constraints. *arXiv preprint arXiv:2201.06669v2*
9. **Qiu H**, Cook A, Bobb J (2022+). Evaluating tests for cluster-randomized trials with few clusters under generalized linear mixed models with covariate adjustment: a simulation study. *arXiv preprint arXiv:2209.04364v1*
10. **Qiu H**, Dobriban E, Tchetgen Tchetgen E (2022). Distribution-free Prediction Sets Adaptive to Unknown Covariate Shift. *arXiv preprint: arXiv:2203.06126*
11. **Qiu H**, Luedtke A (2022+). Adversarial Meta-Learning of Gamma-Minimax Estimators That Leverage Prior Knowledge. *arXiv preprint: arXiv:2003.05465*

Presentations

1. “Optimal individualized decision rules using instrumental variable methods.” **Qiu H**, Carone M, Sadikova E, Petukhova M, Kessler R, Luedtke A.
 - 2021 Joint Statistical Meetings
 - 2020 ENAR Spring Meeting
 - Biostatistics student seminar
 - Causal working group
2. “Distribution-Free Prediction Sets Adaptive to Unknown Covariate Shift.” **Qiu H**, Dobriban E, Tchetgen Tchetgen E.
 - 2022 Joint Statistical Meeting
 - 2022 American Causal Inference Conference (poster)
3. “TMLE based on Pseudo-gradients and examples from my project.” **Qiu H**. Semiparametric Efficiency Reading Group.
4. “Constructing asymptotically normal plug-in estimators with highly adaptive Lasso and data adaptive series.” **Qiu H**, Luedtke A & Carone M.
 - 2019 WNAR/IMS/JR (Japanese Region) meeting
 - Biostatistics student seminar

Reviewer for International Journals and Conferences

- 37th Conference on Uncertainty in Artificial Intelligence (UAI 2021)
- *Journal of the American Statistical Association*
- *Biometrics*
- *Journal of Causal Inference*
- *Journal of Computational and Graphical Statistics*
- *International Journal of Biostatistics*
- *Statistical Methods in Medical Research*

Awards and Fellowships

University of Washington

Scholarship for 6th Seattle Symposium in Biostatistics

October 2020

2018 Donovan J. Thompson Award

October 2018

Software

APACpredset	Asymptotically Probably Approximately Correct prediction sets under unknown covariate shift
CAMer	Continuous Admixture Modeling based on the result of iMAAPs.

Languages and Skills

Programming:

- proficient: R
- familiar: Python, MATLAB
- basic: SAS, Stan, JAGS, C++, C

Operating systems: Windows, Unix

Other computer skills: Git, L^AT_EX, Markdown, Microsoft Office

Languages: English (fluent), Chinese Mandarin (native), Chinese Cantonese (basic)