Hongxiang (David) 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

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 Lerous, 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:2201.06669*

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:2209.04364*

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. "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)
2. "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
3. "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

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, LaTeX, Markdown, Microsoft Office
Languages: English (fluent), Chinese Mandarin (native), Chinese Cantonese (basic)