Hongxiang (David) Qiu

Postdoctoral Researcher
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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 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:2201.06669v2*

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