

Yan Dora Zhang

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ACADEMIC POSITIONS

- 2019– **Assistant Professor**
Department of Statistics and Actuarial Science
Faculty of Science
The University of Hong Kong
- 2016–2019 **Postdoctoral Fellow** (Mentor: [Dr. Nilanjan Chatterjee](#))
Department of Biostatistics
Bloomberg School of Public Health
Johns Hopkins University

EDUCATION

- 2013–2016 **Ph.D. in Statistics**, North Carolina State University, *NC, USA*
Thesis: *Bayesian Methods for High-dimensional Data*
Advisor: [Dr. Howard D. Bondell](#) & [Dr. Brian J. Reich](#)
- 2011–2013 **M.S. in Statistics**, North Carolina State University, *NC, USA*
- 2007–2011 **B.S. in Statistics**, Nankai University, *Tianjin, China*

PUBLICATIONS

(*Co-first authors. [†]Co-corresponding authors. Students/supervisees are underlined.)

Peer-Reviewed Articles (as first/corresponding author)

1. [Wang, A.*](#), [Tian, P.*](#), **Zhang, Y. D.** (2024). TWAS-GKF: a novel method for causal gene identification in transcriptome-wide association studies with knockoff inference. *Bioinformatics*, Volume 40, Issue 8, August 2024, btae502.
2. [Lai, D.](#), [Lim, D.](#), [Lu, J.](#), [Wang, H.](#), [Huang, T.](#), **Zhang, Y. D.** (2024). Risk of myocarditis after three doses of COVID-19 mRNA vaccines in the United States, 2020–2022: A self-controlled case series study. *J Evid Based Med.* 2024;17:65–77.

3. Xiong, Z., Thach, T., **Zhang, Y. D.[†]**, & Sham, P. C.[†] (2024). Improved estimation of functional enrichment in SNP heritability using feasible generalized least squares. *Human Genetics and Genomics Advances*, Volume 5, Issue 2, 2024, 100272.
4. Li, X., Sham, P. C., & **Zhang, Y. D.** (2024). A Bayesian fine-mapping model using a continuous global-local shrinkage prior with applications in prostate cancer analysis. *The American Journal of Human Genetics*, Volume 111, Issue 2, Pages 213-226.
5. Wang, X., Wang, H., Yin, G., & **Zhang, Y. D.** (2023). Network-based drug repurposing for the treatment of COVID-19 patients in different clinical stages. *Heliyon*, Volume 9, Issue 3, E14059.
6. Liu, Z.*, Qin, Y.*, Wu, T., Tubbs, J., Baum, L., Mak, T., Li, M.[†], **Zhang, Y. D.[†]**, & Sham, P.[†] (2023). Reciprocal causation mixture model for robust mendelian randomization analysis using genome-scale summary data. *Nature Communications*, 14, 1131.
7. Tian, P., Hu, Y., Liu, Z.[†], & **Zhang, Y. D.[†]** (2022). Grace-AKO: a novel and stable knockoff filter for variable selection incorporating gene network structures. *BMC Bioinformatics*, 23, 478. <https://doi.org/10.1186/s12859-022-05016-y>
8. Wang, H., Wang, X., Li, T., Lai, D., & **Zhang Y. D.** (2022). Adverse effect signature extraction and prediction for drugs treating COVID-19. *Front. Genet.* 13:1019940. doi: 10.3389/fgene.2022.1019940
9. Gan, D., Yin, G., & **Zhang, Y. D.** (2022). The GR2D2 estimator for the precision matrices, *Briefings in Bioinformatics*, bbac426, <https://doi.org/10.1093/bib/bbac426>.
10. Tian, P., Chan, T. H., Wang, Y. F., Yang, W., Yin, G., & **Zhang, Y. D.** (2022). Multi-ethnic polygenic risk prediction in diverse populations through transfer learning. *Frontiers in Genetics*, doi: 10.3389/fgene.2022.906965.
11. Lai, D., Cai, Y., Chan, T. H., Gan, D., Hurson, A. N., & **Zhang, Y. D.** (2022). How to organise travel restrictions in the new future: lessons from the COVID-19 response in Hong Kong and Singapore. *BMJ Global Health*, 7(2), e006975.
12. **Zhang, Y. D.**, Hurson, A. N., Zhang, H., Choudhury, P. P., ..., Chatterjee, N.[†], & García-Closas, M.[†]. (2020). Assessment of polygenic architecture and risk prediction based on common variants across fourteen cancers. *Nature communications*, 11(1), 1-13.
13. **Zhang, Y. D.**, Naughton, B. P., Bondell, H. D., & Reich, B. J.(2020). Bayesian regression using a prior on the model fit: The R2-D2 shrinkage prior. *Journal of the American Statistical Association*, 1-13.
14. **Zhang, Y.**, Qi, G., Park, J. H., & Chatterjee, N. (2018). Estimation of complex effect-size distributions using summary-level statistics from genome-wide association studies across 32 complex traits. *Nature genetics*, 50(9), 1318-1326.

15. **Zhang, Y.**, & Bondell, H. D. (2018). Variable selection via penalized credible regions with Dirichlet–Laplace global-local shrinkage priors. *Bayesian Analysis*, 13(3), 823-844.

Peer-Reviewed Articles (as middle author)

16. Wang, W., Jin, H., **Zhang, Y. D.**, & Yin, G. (2023). Two-dimensional calibration-free odds design for phase I drug-combination trials. *Front. Oncol.* 13:1294258. doi: 10.3389/fonc.2023.1294258
17. Su, W., He, B., **Zhang, Y. D.**, & Yin, G. (2022). C-index regression for re event data. *Contemporary Clinical Trials*, 106787.
18. Lai, D., **Zhang, Y. D.**, & Lu, J. (2022). Venous Thromboembolism following Two Doses of COVID-19 mRNA Vaccines in the US Population, 2020–2022. *Vaccines*, 10(8), 1317.
19. Meisner, A., Kundu, P., **Zhang, Y. D.**, Lan, L. V., Kim, S., Ghandwani, D., Choudhury, P. P., Berndt, S. I., Freedman, N. D., Garcia-Closas, M., & Chatterjee, N. (2020). Combined Utility of 25 Disease and Risk Factor Polygenic Risk Scores for Stratifying Risk of All-Cause Mortality. *The American Journal of Human Genetics*, 107(3), 418-431.
20. Tubbs, J. D., **Zhang, Y. D.**, & Sham, P. C. (2020). Intermediate confounding in trio relationships: The importance of complete data in effect size estimation. *Genetic Epidemiology*, 44(4), 395-399.
21. Hong, X., Zhang, B., Liang, L., **Zhang, Y.**, Ji, Y., Wang, G., ... & Wang, X. (2020). Postpartum plasma metabolomic profile among women with preeclampsia and preterm delivery: implications for long-term health. *BMC medicine*, 18(1), 1-12.
22. Ji, Y., Azuine, R. E., **Zhang, Y.**, Hou, W., Hong, X., Wang, G., ... & Wang, X. (2020). Association of cord plasma biomarkers of in utero acetaminophen exposure with risk of attention-deficit/hyperactivity disorder and autism spectrum disorder in childhood. *JAMA psychiatry*, 77(2), 180-189.
23. Pal Choudhury, P.^{*}, Wilcox, A. N.^{*}, Brook, M. N., **Zhang, Y.**, Ahearn, T., ..., Chatterjee, N.[†], & García-Closas, M.[†]. (2020). Comparative validation of breast cancer risk prediction models and projections for future risk stratification. *JNCI: Journal of the National Cancer Institute*, 112(3), 278-285.

Book Chapter

24. **Zhang, Y. D.**, Yu, W., & Bondell, H. D. (2021). Variable Selection with Shrinkage Priors via Sparse Posterior Summaries. In *Handbook of Bayesian Variable Selection* (pp. 179-198). Chapman and Hall/CRC.

RESEARCH GRANTS

- (PI) Research Grants Council (RGC) General Research Fund (GRF) 2024/25, “*Integrating heterogenous data to enhance gene discovery power in transcriptome-wide association studies*”, HK\$910,742, 2024-2027
- (PI) Research Grants Council (RGC) Early Career Scheme (ECS) 2021/22, “*Integrating external knowledge in Bayesian inference with applications in genetics and genomics*”, HK\$603,303, 2021-2024

TEACHING

- STAT3902, Statistical models, *HKU* (Fall 2023, Fall 2022)
- STAT2602, Probability and statistics II, *HKU* (Fall 2024, Fall 2023, Spring 2023, Fall 2022, Fall 2021)
- STAT3621, Statistical data analysis, *HKU* (Spring 2021, Spring 2020)
- STAT3604, Design and analysis of experiments, *HKU* (Fall 2020)

TALKS AND PRESENTATIONS

Invited Conference Talk

July 2023	2023 Joint Conference on Statistics and Data Science in China, <i>Beijing, China</i>
July 2023	12th ICOSA International Conference, <i>Hong Kong, China</i>
July 2023	2023 ICOSA China Conference, <i>Chengdu, China</i>
Apr 2023	Science Public Lecture Series, Faculty of Science, The University of Hong Kong, <i>Hong Kong, China</i>
Apr 2023	The 11th World DNA Day and Bio-pharma Industry Congress 2023, <i>Dalian, China</i>
Aug 2022	AI and Big Data Research for Health Improvement Symposium, <i>Virtual Meeting</i>
Jun 2022	NSFC/RGC Workshop on Single-Cell Data Science, <i>Virtual Meeting</i>
Jun 2022	The 5th International Conference on Econometrics and Statistics (EcoSta 2022), <i>Virtual Meeting</i>
Aug 2017	Joint Statistical Meetings (JSM), <i>Baltimore, MD</i>

MENTORSHIP

Postdoctoral Fellows

2021–2023	Xin Wang
2021–2023	Han Wang, Associate Professor at China Agricultural University (first position after leaving the lab)

Doctoral Students

2023–	Yu Yun, Department of Statistics and Actuarial Science, HKU
2022–	Anqi Wang, Department of Statistics and Actuarial Science, HKU
2021–	Xiang Li, Department of Statistics and Actuarial Science, HKU

2020–	Daoyuan Lai, Department of Statistics and Actuarial Science, HKU
2020–	Peixin Tian, Department of Statistics and Actuarial Science, HKU
2020–	Zewei Xiong, Department of Psychiatry, HKU (<i>co-supervised with Dr. Pak Sham</i>)
2019–	Guolan Chen, Department of Psychiatry, HKU (<i>co-supervised with Dr. Pak Sham</i>)

Doctoral Dissertation Committee Member

2024	Yunpeng Zhou, Department of Statistics and Actuarial Science, HKU (Supervisor: Dr. K.C. Yuen)
2023	Siqi Xu, Department of Statistics and Actuarial Science, HKU (Supervisor: Dr. Wing Kam FUNG)
2023	Siqi Xu, Department of Statistics and Actuarial Science, HKU (Supervisor: Dr. Wing Kam FUNG)
2023	Xingtian Yang, Department of Paediatrics and Adolescent Medicine, HKU (Supervisor: Dr. YL Lau and Dr. WL Yang)
2022	Yidi Qu, Department of Statistics and Actuarial Science, HKU (Supervisor: Dr. Jinfeng Xu and Dr. K.C. Yuen)
2022	Jiaqi Gu, Department of Statistics and Actuarial Science, HKU (Supervisor: Dr. Guosheng Yin)
2022	Huaqing Jin, Department of Statistics and Actuarial Science, HKU (Supervisor: Dr. Guosheng Yin)
2022	Tian Wu, Department of Psychiatry, HKU (Supervisor: Dr. Pak Sham)

Master Students

2022–2023	Wenliang Wang, Department of Statistics and Actuarial Science, HKU
2020–2022	Hanning Chen, Department of Statistics and Actuarial Science, HKU

Undergraduate Research Assistants

2021–2021	Dickson Lim, Department of Statistics and Actuarial Science, HKU
2020–2021	Dailin Gan, Department of Statistics and Actuarial Science, HKU
2020–2021	Yuxi Cai, Department of Statistics and Actuarial Science, HKU
2020–2021	Tsai Hor Chan, Department of Statistics and Actuarial Science, HKU

Visiting Scholars

2020–2020	Baihua He, School of Mathematics and Statistics, Wuhan University
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PROFESSIONAL SERVICES

Department Service

2023–	Academic Advisor, Department of Statistics and Actuarial Science, HKU
2021–	Member (Student Exchange) of the BSc(Bioinformatics) Curriculum Committee, School of Biomedical Sciences, LKS Faculty of Medicine, HKU
2022–2023	Course Selection Advisor, Department of Statistics and Actuarial Science, HKU
2017–2018	Committee Representative of Department of Biostatistics, School of Public Health, Johns Hopkins Postdoctoral Association
2013–2014	Student Seminar Representative, Department of Statistics, NCSU

2013–2014 Executive of STATCOM - NCSU Chapter, a student-run volunteer organization supported by ASA

Editorial Activities

2023– *Journal of Heart and Lung Transplantation* (Editor)

2020–2020 *PLOS Computational Biology* (Guest Editor)

Journal Referee

American Journal of Human Genetics; Bayesian Analysis; BMJ Global Health; Cancer Epidemiology, Biomarkers & Prevention; Communications in Statistics – Theory and Methods; Computational Statistics; Electronic Journal of Statistics; HGC Advances; Human Genetics and Genomics Advances; Human Heredity; International Journal of Biostatistics; Journal of Heart and Lung Transplantation; Journal of the American Statistical Association; Journal of the Royal Statistical Society: Series B; Nature Communications; Nature Genetics; Scientific Reports; Statistics in Medicine