

# Yan Dora Zhang

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## ACADEMIC POSITIONS

- 2019– **Assistant Professor**  
Department of Statistics and Actuarial Science  
School of Computing and Data 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. <sup>†</sup>Co-corresponding authors. Students/supervisees are underlined.)

### Peer-Reviewed Articles (as first/corresponding author)

1. [Wang, H.](#), [Li, X.](#), [Li, T.](#), [Li, Z.](#), [Sham, P. C.](#), & **Zhang, Y. D.** (2025). MAAT: a new nonparametric Bayesian framework for incorporating multiple functional annotations in transcriptome-wide association studies. *Genome Biology*, 26, 21.
2. [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.

3. 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.
4. Xiong, Z., Thach, T., **Zhang, Y. D.<sup>†</sup>**, & Sham, P. C.<sup>†</sup> (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.
5. 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.
6. 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.
7. Liu, Z.\*, Qin, Y.\*, Wu, T., Tubbs, J., Baum, L., Mak, T., Li, M.<sup>†</sup>, **Zhang, Y. D.<sup>†</sup>**, & Sham, P.<sup>†</sup> (2023). Reciprocal causation mixture model for robust mendelian randomization analysis using genome-scale summary data. *Nature Communications*, 14, 1131.
8. Tian, P., Hu, Y., Liu, Z.<sup>†</sup>, & **Zhang, Y. D.<sup>†</sup>** (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>
9. 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
10. 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>.
11. 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.
12. 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.
13. **Zhang, Y. D.**, Hurson, A. N., Zhang, H., Choudhury, P. P., ..., Chatterjee, N.<sup>†</sup>, & García-Closas, M.<sup>†</sup>. (2020). Assessment of polygenic architecture and risk prediction based on common variants across fourteen cancers. *Nature communications*, 11(1), 1-13.
14. **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.

15. **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.
16. **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)

17. 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
18. Su, W., He, B., **Zhang, Y. D.**, & Yin, G. (2022). C-index regression for re event data. *Contemporary Clinical Trials*, 106787.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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.
24. Pal Choudhury, P.\* , Wilcox, A. N.\* , Brook, M. N., **Zhang, Y.**, Ahearn, T., ..., Chatterjee, N.<sup>†</sup>, & García-Closas, M.<sup>†</sup>. (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

25. **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

- STAT2602, Probability and statistics II, *HKU* (Spring 2025, Fall 2024, Fall 2023, Spring 2023, Fall 2022, Fall 2021)
- STAT3902, Statistical models, *HKU* (Fall 2023, Fall 2022)
- 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 ICSA International Conference, <i>Hong Kong, China</i>
July 2023	2023 ICSA 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, Associated Professor at Northeastern University, China (First position after leaving the lab)
2021–2023	Han Wang, Associate Professor at China Agricultural University (First position)

### Doctoral Students

2023–	Yu Yun, Department of Statistics and Actuarial Science, <i>HKU</i>
2021–	Xiang Li, Department of Statistics and Actuarial Science, <i>HKU</i>
2020–	Daoyuan Lai, Department of Statistics and Actuarial Science, <i>HKU</i>

2020– Zewei Xiong, Department of Psychiatry, HKU (*co-supervised with Dr. Pak Sham*)  
2019– Guolan Chen, Department of Psychiatry, HKU (*co-supervised with Dr. Pak Sham*)

### **Graduated Doctoral Students**

2022–2024 Anqi Wang, Department of Statistics and Actuarial Science, HKU (First position:  
Postdoc at Columbia University)  
2020–2024 Peixin Tian, Department of Statistics and Actuarial Science, HKU (First position:  
Data scientist at AIVI )

### **Master Students**

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

### **Visiting Scholars**

2025–2025 Xinyue Xu, School of Statistics and Data Science, Nankai University  
2020–2020 Baihua He, School of Mathematics and Statistics, Wuhan University

## **PROFESSIONAL SERVICES**

### **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; Cell Genomics; 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*