

# 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

- 2011–2016 **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*
- 2007–2011 **B.S. in Statistics**, Nankai University, *Tianjin, China*

## PUBLICATIONS

(\*Co-first authors. †Co-corresponding authors. Former or current students/supervisees are underlined.)

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

1. 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*.
2. 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.
3. 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 randomiza-

tion analysis using genome-scale summary data. *Nature Communications*, 14, 1131.

4. 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>
5. 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
6. 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>.
7. 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.
8. 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.
9. **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.
10. **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.
11. **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.
12. **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)

13. 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
14. Su, W., He, B., **Zhang, Y. D.**, & Yin, G. (2022). C-index regression for re event data. *Contemporary Clinical Trials*, 106787.
15. 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.

16. 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.
17. 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.
18. 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.
19. 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.
20. 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**

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

### Conference Platform Talk

- Aug 2016 Joint Statistical Meetings (JSM), *Chicago, IL*  
Aug 2015 Joint Statistical Meetings (JSM), *Seattle, WA*  
Aug 2014 Joint Statistical Meetings (JSM), *Boston, MA*

### Poster Presentation

- Oct 2018 American Society of Human Genetics (ASHG) Conference, *San Diego, CA*  
Mar 2018 Eastern North American Region International Biometric Society (ENAR) Conference, *Atlanta, GA*  
Oct 2017 American Society of Human Genetics (ASHG) Conference, *Orlando, FL*

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

### 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

## **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

### **Membership**

- 2017–2020 American Society of Human Genetics (ASHG)

2016–2017 International Chinese Statistical Association (ICSA) Community  
2012–2016 American Statistical Association (ASA) Community

### **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, Communications in Statistics – Theory and Methods, Electronic Journal of Statistics, HGC Advances, Human Genetics and Genomics Advances, Human Heredity, International Journal of Biostatistics, Journal of the American Statistical Association, Nature Communications, Nature Genetics, Scientific Reports, Statistics in Medicine*