

# 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  
Centre for PanorOmic Sciences  
LKS Faculty of Medicine  
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

(\*Junior authors with equal contribution. †Senior authors with equal contribution or served as co-corresponding authors. Former or current students/supervisees are underlined.)

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

1. Liu, Z.<sup>\*</sup>, Qin, Y.<sup>\*</sup>, 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.
2. 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 Bioin-*

*formatics*, 23, 478. <https://doi.org/10.1186/s12859-022-05016-y>

3. 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
4. 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>.
5. 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.
6. 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.
7. **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.
8. **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.
9. **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.
10. **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)

11. Su, W., He, B., **Zhang, Y. D.**, & Yin, G. (2022). C-index regression for re event data. *Contemporary Clinical Trials*, 106787.
12. 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.
13. 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.
14. 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 Epi-*

*demiology*, 44(4), 395-399.

15. 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.
16. 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.
17. Pal Choudhury, P.<sup>\*</sup>, Wilcox, A. N.<sup>\*</sup>, 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**

18. **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**

### **Instructor**

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

### **Teaching Assistant**

- Applied Bayesian Statistics, Applied Multivariate Statistical Analysis, Experimental Statistics for Biological Sciences I, Introduction to Mathematical Statistics I, Experimental Statistics for Engineers II, Experimental Statistics for Biological Sciences II, Introduction to Statistics, *NCSU* (2011-2016)

## TALKS AND PRESENTATIONS

### Invited Seminar Talk

Nov 2019	Academy of Mathematics and Systems Science, Chinese Academy of Sciences, <i>Beijing</i>
Feb 2019	Department of Biostatistics, University of Wisconsin-Madison, <i>Madison, WI</i>
Jan 2019	Center for Statistical Science, Tsinghua University, <i>Beijing</i>
Jan 2019	Department of Statistics and Actuarial Science, HKU, <i>Hong Kong</i>
Dec 2018	Department of Biostatistics, Peking University, <i>Beijing</i>
Dec 2018	School of Data Science, Fudan University, <i>Shanghai</i>
Dec 2018	Department of Mathematics, Shanghai Jiao Tong University, <i>Shanghai</i>
Dec 2018	Department of Mathematics, University of Houston, <i>Houston, TX</i>
Sep 2018	School of Public Health, Peking University, <i>Beijing</i>
Sep 2018	SJTU-YALE Joint Center of Biostatistics and Data Science, Shanghai Jiao Tong University, <i>Shanghai</i>
Sep 2018	School of Statistics and Data Science, Nankai University, <i>Tianjin</i>
Jan 2016	Institute of Statistics and Big Data, Renmin University of China, <i>Beijing</i>
Dec 2015	Institute of Statistics, Nankai University, <i>Tianjin</i>
Dec 2015	School of Statistics and Management, Shanghai University of Finance and Economics, <i>Shanghai</i>
Dec 2015	School of Management, University of Science and Technology of China, <i>Hefei</i>

### Invited Conference Talk

Aug 2022	AI and Big Data Research for Health Improvement Symposium, <i>Hong Kong</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>

### Conference Platform Talk

Aug 2016	Joint Statistical Meetings (JSM), <i>Chicago, IL</i>
Aug 2015	Joint Statistical Meetings (JSM), <i>Seattle, WA</i>
Aug 2014	Joint Statistical Meetings (JSM), <i>Boston, MA</i>

### Poster Presentation

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

## MENTORSHIP

### Postdoctoral Fellows

2021–	Han Wang
2021–	Xin Wang

### **Doctoral Students**

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**

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**

2020–2022	Hanning Chen, Department of Statistics and Actuarial Science, HKU
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### **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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### **SELECTED HONORS & AWARDS**

2017	Honorable Mention for poster “Estimating effect-size distribution from summary-level statistics for large genome-wide association studies”, Genetics Research Day, The Maryland Genetics, Epidemiology, and Medicine Training Program (MD-GEM)
2013	Nomination for the University Outstanding Teaching Assistant Award, NCSU
2013	Mu Sigma Rho Statistics Society Honor, NCSU
2011	Outstanding Graduates Honor, Nankai University, China
2010	Excellent Student Leader Honor, Nankai University, China
2010	Tianjin Municipal People’s Government Scholarship, China
2009	National Scholarship, China
2008	Hong Kong and Shang Hai Banking Corporation Scholarship, China

## PROFESSIONAL SERVICES

### Department Service

2022– 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

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, 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*