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

2019–2023 **Assistant Professor**
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. 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.

2. 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.

3. 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

4. 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

5. 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.

6. 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.

7. 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.

8. **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.

9. **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.

10. **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.

11. **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)

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

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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

19. **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 2022)
- STAT2602, Probability and statistics II, *HKU* (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–   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 *(co-supervised with Dr. Pak Sham)*

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

Doctoral Dissertation Committee Member

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

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

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, 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