Yan Dora Zhang

Address:	Room 304, 3/F, Run Run Shaw Building
	Department of Statistics and Actuarial Science
	The University of Hong Kong, Pokfulam Road, Hong Kong
Tel:	(852) 3917-2473
Email:	doraz@hku.hk
Website:	https://yandorazhang.github.io/

ACADEMIC POSITIONS

2019–Current **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*
2007–2011 **B.S. in Mathematics and Statistics**, Nankai University, *Tianjin, China*

RESEARCH INTERESTS

Biostatistics, Statistical genetics, Bioinformatics, Public health, Cancer data analytics, Biomedical/Health data analytics

PUBLICATIONS

(*Junior authors with equal contribution. †Senior authors with equal contribution or served as co-corresponding authors.)

Peer-Reviewed Articles (as first/corresponding author)

1. Liu, Z., Qin, Y., Wu, T., Tubbs, J., Baum, L., Mak, T., Li, M.[†], **Zhang, Y. D.**[†], & Sham, P.[†] (2022). Reciprocal causation mixture model for robust mendelian randomization analysis using genome-scale summary data. *Nature Communications*, accepted.

2. Gan, D., Yin, G., & **Zhang, Y. D.** (2022). The Graphical R2D2 Estimator for the Precision Matrices. *Briefings in Bioinformatics*, accepted.

3. 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.

4. 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.

5. **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.

6. **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.

7. **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.

8. **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)

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

10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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

1. **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

TALKS AND PRESENTATIONS

Invited Conference Talk

Aug 2022	AI and Big Data Research for Health Improvement Symposium, *Hong Kong*
Jun 2022	The 5th International Conference on Econometrics and Statistics (EcoSta 2022), *Kyoto, Japan*
Aug 2017	Joint Statistical Meetings (JSM), *Baltimore, MD*

Invited Seminar Talk

Nov 2019	Academy of Mathematics and Systems Science, Chinese Academy of Sciences, *Beijing*
Feb 2019	Department of Biostatistics, University of Wisconsin-Madison, *Madison, WI*
Jan 2019	Center for Statistical Science, Tsinghua University, *Beijing*
Jan 2019	Department of Statistics and Actuarial Science, HKU, *Hong Kong*
Dec 2018	Department of Biostatistics, Peking University, *Beijing*
Dec 2018	School of Data Science, Fudan Univerity, *Shanghai*
Dec 2018	Department of Mathematics, Shanghai Jiao Tong University, *Shanghai*
Dec 2018	Department of Mathematics, University of Houston, *Houston, TX*

Sep 2018	School of Public Health, Peking University, *Beijing*
Sep 2018	SJTU-YALE Joint Center of Biostatistics and Data Science, Shanghai Jiao Tong University, *Shanghai*
Sep 2018	School of Statistics and Data Science, Nankai University, *Tianjin*
Jan 2016	Institute of Statistics and Big Data, Renmin University of China, *Beijing*
Dec 2015	Institute of Statistics, Nankai University, *Tianjin*
Dec 2015	School of Statistics and Management, Shanghai University of Finance and Economics, *Shanghai*
Dec 2015	School of Management, University of Science and Technology of China, *Hefei*

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–Current	Han Wang
2021–Current	Xin Wang

Doctoral Students

2022–Current	Anqi Wang, Department of Statistics and Actuarial Science, HKU
2022–Current	Yunshan Guo, Department of Statistics and Actuarial Science, HKU
2021–Current	Xiang Li, Department of Statistics and Actuarial Science, HKU
2020–Current	Daoyuan Lai, Department of Statistics and Actuarial Science, HKU
2020–Current	Hanning Chen, Department of Statistics and Actuarial Science, HKU
2020–Current	Peixin Tian, Department of Statistics and Actuarial Science, HKU
2020–Current	Zewei Xiong, Department of Psychiatry, HKU *(co-supervised with Dr. Pak Sham)*
2019–Current	Guolan Chen, Department of Psychiatry, HKU *(co-supervised with Dr. Pak Sham)*

Undergraduate Research Assistants

2021.07–2021.10	Dickson Lim, Department of Statistics and Actuarial Science, HKU
2020.12–2021.05	Dailin Gan, Department of Statistics and Actuarial Science, HKU
2020.06–2021.04	Yuxi Cai, Department of Statistics and Actuarial Science, HKU
2020.06–2021.02	Tsai Hor Chan, Department of Statistics and Actuarial Science, HKU

Visiting Scholars

2020.01–2020.08   Baihua He, School of Mathematics and Statistics, Wuhan University

TEACHING

Instructor

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

Teaching Assistant

2011–2016   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

PROFESSIONAL SERVICES

2018–Current   **Journal Referee:** *American Journal of Human Genetics, Bayesian Analysis, BMJ Global Health, Communications in Statistics – Theory and Methods, Electronic Journal of Statistics, Human Heredity, International Journal of Biostatistics, Journal of the American Statistical Association, Nature Genetics, Nature Communications, Scientific Reports, Statistics in Medicine*

2020–2020   **Guest Editor:** *PLOS Computational Biology*

SOFTWARE

- GR2D2: The GR2D2 Estimator for the Precision Matrices
- TLMulti: Multiethnic polygenic risk prediction in diverse populations through Transfer Learning
- Grace-AKO: Variable Selection via Grace-AKO
- GENESIS: GENetic Effect-Size distribution Inference from Summary-level data
- CancerEffectSize: Assessment of Polygenic Architecture and Risk Prediction based on Common Variants for Cancers
- R2D2: Bayesian Regression Using a Prior on the Model Fit: The R2-D2 Shrinkage Prior