

Yan Dora Zhang

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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

1. 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.
2. **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.
3. **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.
4. **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.
5. **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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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 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 2017	Joint Statistical Meetings, Baltimore, MD
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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>
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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–Current	Han Wang
2021–Current	Xin Wang

Doctoral Students

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 (<i>co-supervised with Dr. Zhonghua Liu</i>)
2020–Current	Zewei Xiong, Department of Psychiatry, HKU (<i>co-supervised with Dr. Pak Sham</i>)
2019–Current	Guolan Chen, Department of Psychiatry, HKU (<i>co-supervised with Dr. Pak Sham</i>)

Undergraduate Research Assistants

2021.07–Current	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
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TEACHING

Instructor

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
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PROFESSIONAL SERVICES

2018–Current	Journal Referee: <i>American Journal of Human Genetics</i> , <i>Journal of the American Statistical Association</i> , <i>Nature Genetics</i> , <i>Nature Communications</i> , <i>Bayesian Analysis</i> , <i>International Journal of Biostatistics</i> , <i>Communications in Statistics – Theory and Methods</i> , <i>Human Heredity</i>
2020–2020	Guest Editor: <i>PLOS Computational Biology</i>

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

SOFTWARE

- [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