# Ruijian Han

Department of Da Faculty of Compu- The Hong Kong I Hung Hom, Kowl	ata Science and Artificial Intelligence ater and Mathematical Sciences Polytechnic University oon, Hong Kong SAR	Email: Office:	ruijian.han@pol TU 827	yu.edu.hk
Education				
2016 - 2020	The Hong Kong University of Scie Ph.D. in Mathematics	ENCE AND	TECHNOLOGY	Hong Kong
2012 - 2016	SICHUAN UNIVERSITY B.S. in Pure Mathematics and Applied	Mathema	Chen	ıgdu, Sichuan
Research Expe	erience			
2022 - Present	Assistant Professor The Hong Kong Polytechnic University			Hong Kong
2020 - 2022	<b>Research Assistant Professor</b> The Chinese University of Hong Kong			Hong Kong

## **Research Interests**

- High-dimensional statistics; Business statistics;
- Ranking data analysis; Network analysis;
- Preference alignment; Reinforcement learning; Large language model.

## Publications

In the author list, \* represents co-first author; and  $\dagger$  represents the corresponding author.

- 1. **Han, R.**<sup>†\*</sup> and Xu, Y.<sup>\*</sup> (2025). A Unified Analysis of Likelihood-based Estimators in the Plackett-Luce Model. *The Annals of Statistics*, accepted.
- Han, R., Kramer, B., Lee, D., Narayan A. and Xu, Y. (2024). An Approximate Control Variates Approach to Multifidelity Distribution Estimation. SIAM/ASA Journal on Uncertainty Quantification, 12(4).
- 3. Han, R.\*, Luo, L.\*, Lin, Y. and Huang, J. (2024). Online Inference with Debiased Stochastic Gradient Descent. *Biometrika*, **111**(1).
- Han, R.<sup>†</sup>\*, Xu, Y.\* and Chen, K. (2023). A General Pairwise Comparison Model for Extremely Sparse Networks. *Journal of the American Statistical Association*, 118(544).
- Lin, Y.\*, Xie, J.\*, Han, R.\* and Tang, N. (2023). Post-selection Inference of Highdimensional Logistic Regression under Case-control Design. *Journal of Business and Economic Statistics*, 41(2).
- Luo, L.\*, Han, R.\*, Lin, Y. and Huang, J. (2023). Online Inference in High-Dimensional Generalized Linear Models with Streaming Data. *Electronic Journal of Statistics*, 17(2).

- 7. Han, R., Osting. B., Wang, D. and Xu, Y. (2023). Probabilistic Methods for Approximate Archetypal Analysis. *Information and Inference-A Journal of the IMA*, **12**(1).
- 8. Han, R., Ye, R., Tan, C. and Chen, K. (2020). Asymptotic Theory of Sparse Bradley-Terry Model. *The Annals of Applied Probability*, **30**(5).
- Han, R., Chen, K. and Tan, C. (2020). Curiosity-Driven Recommendation Strategy for Adaptive Learning via Deep Reinforcement Learning. *British Journal of Mathematical and Statistical Psychology*, 73(3).
- Han, R., Chen, K. and Tan, C. (2020). Bivariate Gamma Model. Journal of Multivariate Analysis, 180, 104666.
- 11. Tan, C., **Han, R.**, Ye, R., and Chen, K. (2020). Adaptive Learning Recommendation Strategy Based on Deep Q-learning. *Applied Psychological Measurements*, **44**(4).

#### **External Grant Support**

2025.1–2027.12 **PI**, NSFC Young Scientists Fund - Statistical Analysis of Ordinal Comparison Data.

- 2023.10–2026.9 **PI**, Hong Kong RGC ECS Statistical Analysis of Comparison Data with an Informative Comparison Graph Structure.
- 2022.1–2024.12 **PI**, Hong Kong RGC GRF Statistical Analysis of Ranking Data in Large-scale Networks.

### **Teaching Experience**

2022–Present	Course Instructor, The Hong Kong Polytechnic University.	
	AMA 1606: Basic Statistics. Fall 2024.	
	AMA 2691: Probability and its Distributions. Spring 2023; Spring 2024.	
	AMA 546: Statistical Data Mining. Fall 2023; Spring 2025.	
	BSE 2610: Data Science and Programming for Buildings. Spring 2024.	
2020 - 2022	Course Instructor, The Chinese University of Hong Kong.	
	STAT 1011: Introduction to Statistics. Spring 2021, Spring 2022.	
	STAT 4011: Statistics Projects. Fall 2021.	
2016 - 2020	Teaching Assistant, Hong Kong University of Science and Technology.	
	MATH 2421: Probability. Spring 2017, Fall 2017, Spring 2019.	
	MATH 2011: Matrix Algebra and Applications. Fall 2018.	
	MATH 2411: Applied Statistics. Spring 2018, Fall 2019.	

#### Honors and Awards

2016 - 2020	Hong Kong PhD Fellowship
2019	Din-Yu Hsieh "Best Teaching Assistant" Award
2018	Din-Yu Hsieh "Best Teaching Assistant" Award
2017	Din-Yu Hsieh "Best Teaching Assistant" Award
2012 - 2016	Plan for Cultivating Top-notch Students of Basic Disciplines
2013	China National Scholarship