

DAOYUAN LAI

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EDUCATION

The University of Hong Kong

Ph.D. candidate in Statistics

Advisors: Dr. Yan Dora Zhang & Prof. Pak Chung Sham

Sep. 2020–Sep. 2025 (Expected)

Columbia University

Visiting student at the Department of Biostatistics, Mailman School of Public Health

Advisor: Dr. Tian Gu

Mar. 2024–Sep. 2024

Southern University of Science and Technology, China (SUSTech)

B.S. in Statistics (*with distinction*)

Sep. 2016–Jun. 2020

RESEARCH INTERESTS

Data integration, Statistical genetics, High-dimensional statistics, Bayesian statistics, Clinical trial

PUBLICATIONS

Articles (as the first author)

- **Lai, D.**, Madrid-Padilla, O.H. & Gu, T. (2025+). Bayesian transfer learning for enhanced estimation and inference. Reject with resubmission at *Journal of American Statistical Association*.
- **Lai, D.**, Wang, H., Gu, T., Wu, S., Liu, D.J., Sham, P.C. & Zhang, Y. D. (2025+). TransTWAS: a transfer learning framework for cross-tissue transcriptome-wide association study. Under revision at *The American Journal of Human Genetics*.
- **Lai, D.**, Lu, J., Lim, D., Wang, H., Huang, T. & Zhang, Y. D. (2024). Risk of myocarditis after three doses of COVID-19 mRNA vaccines in the US, 2020–2022: a self-controlled case series study. *Journal of Evidence-Based Medicine*. 17(1), 65–77.
- **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.
- **Lai, D.**, Cai, Y., Chan, T., Gan, D., Hurson, A., & 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.

Articles (as a middle author)

- Kuang, Z., **Lai, D.**, & Gu, T. (2025+). Leveraging multi-source summary-level data for enhanced risk prediction through synthetic data. *In Preparation*.
- Wang, H., Wang, X., Li, T., **Lai, D.**, & Zhang, Y. D. (2022). Adverse effect signature extraction and prediction for drugs treating COVID-19. *Frontiers in Genetics*, 13, 1019940.
- Zhang, K., Xiong, C., Zhang, W., Liu, H., **Lai, D.**, Rong, Y., & Fu, C. (2019). Environmental features recognition for lower limb prostheses toward predictive walking. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 27(3), 465–476.
- Zhang, Y. D., Gan, D., **Lai, D.**, Chan, T., & Fu, E. (2019) Lessons learnt from Hong Kong's successful strategy in combatting two outbreak waves of COVID-19 pandemic: a retrospective cohort study. *Technical Report*.

WORK EXPERIENCE

BeiGene Ltd.

Research Intern

Jul. 2023 – Dec. 2023

Shanghai, China

- Designed an R Shiny app that integrates multiple Bayesian methods to control covariate imbalance when borrowing information from historical clinical trials, accommodating various types of response variables such as binomial, survival, and continuous.
- The pipeline facilitates the borrowing of historical information, even in situations where only summary-level historical data is available.

AWARDS AND HONORS

American Statistical Association Biopharmaceutical Section Student Paper Award	2025
Chinese Statistical Association of Young Scholars Travel Award	2025
Hung Hing Ying Scholarship	2023–2024
Hong Kong Government Scholarship Fund–Reaching Out Award	2023
University of Hong Kong Excellent Research Award	2021–2022
SUSTech Outstanding Graduate Award	2020
SUSTech Outstanding Undergraduate Thesis Award	2020
SUSTech Outstanding Undergraduate Scholarship	2017–2019

TALKS AND POSTERS

Joint Statistical Meeting (JSM), <i>Nashville, USA</i>	2025
Eastern North American Region (ENAR) 2025 Spring Meeting, <i>New Orleans, USA</i>	2025
American Society of Human Genetics (ASHG) Annual Meeting, <i>Denver, USA</i>	2024
BeiGene Intern Tech Talk, <i>Shanghai, China</i>	2023
American Society of Human Genetics (ASHG) Annual Meeting, <i>Washington DC, USA</i>	2023
12th International Chinese Statistical Association (ICSA) International Conference, <i>Hong Kong, China</i>	2023

TEACHING ASSISTANT

STAT6011 Bayesian Learning (graduate level), University of Hong Kong	2023–2024
STAT3902 Statistical Models, University of Hong Kong	2023–2024
STAT3600 Linear Statistical Analysis, University of Hong Kong	2020–2023

COMPUTATION SKILLS

R, Python, Linux, C++

JOURNAL REFEREE

American Journal of Human Genetics, Health Services and Outcomes Research Methodology