DAOYUAN LAI

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EDUCATION

The University of Hong Kong Sep. 2020–Sep. 2025 (Expected)
Ph.D. candidate in Statistics
Advisors: Dr. Yan Dora Zhang & Prof. Pak Chung Sham

Columbia University Mar. 2024–Sep. 2024
Visiting student at the Department of Biostatistics, Mailman School of Public Health
Advisor: Dr. Tian Gu

Southern University of Science and Technology, China Sep. 2016–Jun. 2020
B.S. in Statistics (*with distinction*)

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. (2024+). Bayesian Transfer Learning for Enhanced Estimation and Inference. *Under Review.*
- **Lai, D.**, Wu, S., Gu, T. & Zhang, Y. D. (2024+). TransTWAS: A Multi-tissue Transcriptome-wide Association Studies with High-dimensional Transfer Learning. *Under review.*
- **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.*
- **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. (2024+). 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. Jul. 2023 – Dec. 2023
Research Intern *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

Hung Hing Ying Scholarship, *HKU* 2023–2024
Hong Kong Government Scholarship Fund–Reaching Out Award, *HKU* 2023
Excellent Research Award, *Dept. of Stat. & Act. Sci., HKU* 2021–2022
Outstanding Graduate Award, *Dept. of Stat. & Data Sci., SUSTech* 2020
Outstanding Undergraduate Thesis Award, *Dept. of Stat. & Data Sci., SUSTech* 2020
Outstanding Undergraduate Scholarship, *SUSTech* 2017–2019

TALKS AND POSTERS

American Society of Human Genetics (ASHG) Annual Meeting, *Denver, USA* 2024
BeiGene Intern Tech Talk, *Shanghai, China* 2023
American Society of Human Genetics (ASHG) Annual Meeting, *Washington DC, USA* 2023
12th International Chinese Statistical Association (ICSA) International Conference, *Hong Kong, China* 2023

TEACHING ASSISTANT

STAT4610/6011 Computational Statistics/Bayesian Learning (graduate level), *HKU* 2023–2024
STAT3902 Statistical Models, *HKU* 2023–2024
STAT3600 Linear Statistical Analysis, *HKU* 2020–2023

COMPUTATION SKILLS

R, Python, Linux, C++