DAOYUAN LAI

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EDUCATION

Ph.D. in Statistics   Sep. 2020–Jun. 2024 (Expected)
Department of Statistics and Actuarial Science
The University of Hong Kong (HKU), Hong Kong, China
Advisors: Dr. Yan Dora Zhang & Prof. Pak Chung Sham

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

RESEARCH INTERESTS

Statistical genetics, Bayesian methods, High-dimensional methods, Biomedical research, and Machine learning.

PUBLICATIONS

Articles (as the first author)

· **Lai, D.**, Wang, H., & Zhang, Y. D. (2023+). TransTWAS: A Multi-tissue Transcriptome-wide Association Studies with High-dimensional Transfer Learning. *Under Review.*

  - Applied a transfer learning algorithm to efficiently incorporate multi-site gene expression data for training gene expression prediction models in the target human tissue.

  - The transfer learning algorithm uses observations from the target model and external samples from different but possibly related regression models. Informative auxiliary samples are transferred to improve the learning performance of the target problem.

· **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 (IF: 8.1, JCR percentile: Q1)* 7(2), e006975.

  - Collarborated with government, extracted information from massive government press releases, evaluated the effectiveness of Hong Kong COVID-19 restrictions and provided actionable policy recommendations for Hong Kong government.

· **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 (IF: 7.8, JCR percentile: Q1)* 10(8), 1317.

· **Lai, D.**, Lu, J., Lim, D., Wang, H., Huang, T. & Zhang, Y. D. (2023+). Risk of myocarditis after three doses of COVID-19 mRNA vaccines in the US, 2020–2022: a self-controlled case series study. *Under Review*.

  - Collarborated with clinicians and wrote two papers. Used a modified self-controlled case series model to study the association between the onset of two adverse events and COVID-19 mRNA vaccination based a US massive health care database.

Articles (as a middle author)

· 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 (IF: 3.7, JCR percentile: Q2)*, 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 (IF: 4.9, JCR percentile: Q1)*, 27(3), 465-476.

AWARDS AND HONORS

HKSAR Government Scholarship Fund–Reaching Out Award, *Hong Kong SAR Government*   2023
Hung Hing Ying Scholarship, *HKU (Top PhD award in Faculty of Science, HKU)*   2022
Excellent Research Award, *Dept. of Stat. and Act. Sci., HKU*   2021–2022
Outstanding Graduate Award, *Dept. of Stat. & Data Sci., SUSTech*   2020
Outstanding Undergraduate Scholarship, *SUSTech*   2017–2019

POSTER PRESENTATION

12th International Chinese Statistical Association (ICSA) International Conference, Hong Kong, China   Jul. 2023
Joint Statistical Meetings (JSM), Toronto, Canada   Aug. 2023
American Society of Human Genetics (ASHG) Annual Meeting, Washington DC, USA   Oct. 2023

TEACHING ASSISTANT

STAT3600 Linear Statistical Analysis, *HKU*   2020–2023