Stanford



Ying Cui

Postdoctoral Scholar, Biomedical Data Sciences

Bio

BIO

I am currently a postdoctoral scholar in the Department of Biomedical Data Science at Stanford Universiry. I received my Ph.D. in Biostatistics at Emory University. Prior to Emory, I received my B.S. in Statistics from Nankai University.

My research, located at the intersection of biomedical data science and statistics, is dedicated to enhancing the integration of statistical insights and data science innovations in biomedical research. I have a broad interest in developing innovative statistical methods and easy-to-use computational tools to understand complex associations using nonparametric and semiparametric methods, with recent work exploring their intersections with machine learning and causal inference to advance precision health. I have also been involved in various collaborative researches in multiple domains, including clinical trials and large language models (LLMs).

HONORS AND AWARDS

- Scholarship Award, Biopharmaceutical Section, ASA (2023)
- Livingston Fellowship Award, Emory University (2021)
- Student Paper Award 1st Place, Medical Device and Diagnostic Section, ASA (2021)
- Distinguished Student Paper Award, ENAR International Biometric Society (2021)
- Outstanding Thesis Award and Outstanding Graduate, Nankai University (2013-2017)

STANFORD ADVISORS

- Lu Tian, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Clustering Hybrid Functional and Vector Data.** *Biometrical journal. Biometrische Zeitschrift*
  Daluwatumulle, S. D., Jang, J. H., Cui, Y., Manatunga, A. K.
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- **Model-based clustering of multiple images incorporating covariates** *STATISTICAL METHODS IN MEDICAL RESEARCH*
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- **Dynamic Decision Making With Individualized Variable Selection** *JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION*
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- **Win statistics (win ratio, win odds, and net benefit): Noncollapsibility and standardization for randomized clinical trials.** *Journal of biopharmaceutical statistics*
  Dong, G., Gamalo-Siebers, M., Cui, Y., Huang, B., Luo, X., Tian, L.
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- **A novel Phase II single-arm hybrid design to minimize trial duration and enhance subsequent Phase III trial success rate.** *Journal of applied statistics*
  Lu, J., Zhang, Y., Cui, Y., Peng, L., Chen, Z.
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- **An IPCW Adjusted Win Statistics Approach in Clinical Trials Incorporating Equivalence Margins to Define Ties.** *Statistics in medicine*
  Cui, Y., Huang, B., Dong, G., Uozumi, R., Tian, L.
  2025; 44 (15-17): e70180
- **Red teaming ChatGPT in medicine to yield real-world insights on model behavior.** *NPJ digital medicine*
  Chang, C. T., Farah, H., Gui, H., Rezaei, S. J., Bou-Khalil, C., Park, Y. J., Swaminathan, A., Omiye, J. A., Kolluri, A., Chaurasia, A., Lozano, A., Heiman, A., Jia, et al
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- **A model-free framework for evaluating the reliability of a new device with multiple imperfect reference standards.** *Biometrics*
  Cui, Y., Yu, Q., Manatunga, A., Jang, J. H.
  2025; 81 (1)
- **On approximate equality of Z-values of the statistical tests for win statistics (win ratio, win odds, and net benefit).** *Journal of biopharmaceutical statistics*
  Dong, G., Cui, Y., Gamalo-Siebers, M., Liao, R., Liu, D., Hoaglin, D. C., Lu, Y.
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- **Inferences for the distribution of the duration of response in a comparative clinical study.** *Clinical trials (London, England)*
  Cui, Y., Huang, B., Mao, L., Uno, H., Wei, L. J., Tian, L.
  2024: 17407745241264188
- **imply: improving cell-type deconvolution accuracy using personalized reference profiles.** *Genome medicine*
  Meng, G., Pan, Y., Tang, W., Zhang, L., Cui, Y., Schumacher, F. R., Wang, M., Wang, R., He, S., Krischer, J., Li, Q., Feng, H.
  2024; 16 (1): 65
- **Evaluation of ChatGPT-generated medical responses: A systematic review and meta-analysis.** *Journal of biomedical informatics*
  Wei, Q., Yao, Z., Cui, Y., Wei, B., Jin, Z., Xu, X.
  2024: 104620
- **Evaluation of ChatGPT's performance in providing treatment recommendations for pediatric diseases.** *Pediatric discovery..*
  Wei, Q., Wang, Y., Yao, Z., Cui, Y., Wei, B., Li, T., Xu, X.
  2023; 1 (3): e42
- **Adjusted win ratio using the inverse probability of treatment weighting.** *Journal of biopharmaceutical statistics*
  Wang, D., Zheng, S., Cui, Y., He, N., Chen, T., Huang, B.
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- **Evaluating the performance of ChatGPT in differential diagnosis of neurodevelopmental disorders: A pediatricians-machine comparison.** *Psychiatry research*
  Wei, Q., Cui, Y., Wei, B., Cheng, Q., Xu, X.
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- **Evidence synthesis analysis with prioritized benefit outcomes in oncology clinical trials.** *Journal of biopharmaceutical statistics*
  Cui, Y., Dong, G., Kuan, P. F., Huang, B.
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- **The stratified win statistics (win ratio, win odds, and net benefit).** *Pharmaceutical statistics*
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- **Win statistics (win ratio, win odds, and net benefit) can complement one another to show the strength of the treatment effect on time-to-event outcomes.** *Pharmaceutical statistics*
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  2023; 22 (1): 20-33
- **Assessing dynamic covariate effects with survival data.** *Lifetime data analysis*
  Cui, Y., Peng, L.
  2022; 28 (4): 675-699
- **Assessing the Reproducibility of Microbiome Measurements Based on Concordance Correlation Coefficients.** *Journal of the Royal Statistical Society. Series C, Applied statistics*
  Cui, Y., Peng, L., Hu, Y., Lai, H. J.
  2021; 70 (4): 1027-1048
- **An empirical bayesian approach for testing gene expression fold change and its application in detecting global dosage effects.** *NAR genomics and bioinformatics*
  Guo, Z., Cui, Y., Shi, X., Birchler, J. A., Albizua, I., Sherman, S. L., Qin, Z. S., Ji, T.
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- **Pulmonary Disease Burden in Primary Immune Deficiency Disorders: Data from USIDNET Registry.** *Journal of clinical immunology*
  Patrawala, M., Cui, Y., Peng, L., Fuleihan, R. L., Garabedian, E. K., Patel, K., Guglani, L.
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