Yuhao Deng, PhD

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Education Background

2014—2018	Mathematics and Applied Mathematics, B.S. School of Mathematical Sciences, Peking University
2015—2018	Economics (double degree), B.E. National School of Development, Peking University
2018—2019	Human Rights Law, LL.M. Law School, Peking University & Raoul Wallenberg Institute of Human Rights and Humanitarian Law
2018—2023	Statistics, Ph.D. School of Mathematical Sciences, Peking University

Work Experience

2023—2023	Visiting scholar Beijing International Center for Mathematical Research, Peking University
2023—2026	Postdoc research fellow Biostatistics, School of Public Health, University of Michigan

Research Interests

Causal inference (observational studies, confounding, intercurrent events, mediation analysis, principal stratification)
Survival analysis (multi-state models, frailty, interval censoring)
Semiparametric modeling (asymptotics, efficiency, double robustness)
Econometrics (quasi-experiments, difference-in-differences)

Publications

[1] **Deng Y**, Zhou X-H. Methods to Control the Empirical Type I Error Rate in Average Bioequivalence Tests for Highly Variable Drugs. *Statistical Methods in Medical Research*. 2019.

[2] You C, **Deng Y**[#], Hu W, Sun J, Lin Q, Zhou F, Pang CH, Zhang Y, Chen Z, Zhou X-H. Estimation of the Time-Varying Reproduction Number of COVID-19 Outbreak in China. *International Journal of Hygiene and Environmental Health*. 2020.

[3] **Deng Y**, You C, Liu Y, Qin J, Zhou X-H. Estimation of Incubation Period and Generation Time Based on Observed Length-biased Epidemic Cohort with Censoring for COVID-19 Outbreak in China. *Biometrics*. 2020.

[4] **Deng Y**, Chen F, Li Y, Qian K, Wang R, Zhou X-H. A Powerful Test for the Maximum Treatment Effect in Thorough QT/QTc Studies. *Statistics in Medicine*. 2021.

[5] **Deng Y**, Zhou X-H. Caution about truncation-by-death in clinical trial statistical analysis: a lesson from Remdesivir. *China CDC Weekly*. 2021.

[6] He Y, **Deng Y**[#], You C, Zhou X-H. Equivalence Tests for Ratio of Means in Bioequivalence Studies under Crossover Design. *Statistical Methods in Medical Research*. 2022.

[7] Wu P, Li H[#], **Deng Y**, Hu W, Dai Q, Dong Z, Sun J, Zhang R, Zhou X-H. On the Opportunity of Causal Learning in Recommendation Systems: Foundation, Estimation, Prediction and Challenges. *IJCAI Survey Track*. 2022.

[8] **Deng Y**, Wang Y, Zhou X-H. Direct and Indirect Effects in the presence of Semi-competing risks. *Biometrics*. 2024.

[9] Wang Y, **Deng Y**[#], Zhou X-H. Causal Inference for Time-to-Event Data with A Cured Subpopulation. *Biometrics*. 2024.

[10] **Deng Y**, Han S[#], Zhou X-H. Inference for Cumulative Incidences and Treatment Effects in Randomized Controlled Trials with Time-to-Event Outcomes under ICH E9 (R1). *Statistics in Medicine*. 2025.

[11] **Deng Y**, Wang R. Adjusted Nelson-Aalen Estimators by Inverse Treatment Probability Weighting with An Estimated Propensity Score. *Statistics in Medicine.* 2025.

[12] Kang L, Yin R, **Deng Y**, Zhang Y, Zhao J, Song Y, Jiang F, Lu C. Parents' Divorce and Early Child Development: A Population-Based Study in China. *BMJ Paediatrics Open*. 2025.

[13] **Deng Y**, Zeng D, Wang Y. Computationally Efficient Methods for Estimating Phenome-Wide Coheritability of Multi-Type Phenotypes Using Biobank Data. *Communications Biology*. 2025.

[14] Zhou Y, **Deng Y**[#], Tian Y-S, Wu P, Hu W, Wang H, Steyerberg E, Zhou X-H*. CSTEapp: An interactive R-Shiny application of the covariate-specific treatment effect curve for visualizing individualized treatment rule. *SoftwareX*. 2025.

[15] **Deng Y**, Zhang T, Peng X, Liu Q. Improved difference-in-differences by targeted estimation. *Economics Letters*. 2025.

Software

[1] Wu P, Hu W, **Deng Y**, Zhou X-H. CSTE: Covariate Specific Treatment Effect Curve. CRAN: Package CSTE. 2021.

[2] **Deng Y**, Zhou Y. ICHe9r1: Treatment Effect Estimation for Time-to-Event Data with Intercurrent Events. CRAN: Package tteICE. 2025.

Academic Activities

Anonymous reviewer for

Journal of the Royal Statistical Society (Series B), *Annals of Applied Statistics*, *Statistica Sinica*, *Statistics in Medicine*, *Statistical Methods in Medical Research*, *Journal of Business & Economic*

Statistics, *Journal of Causal Inference*, *Statistics in Biopharmaceutical Research*, *Biostatistics & Epidemiology*, *Science China—Mathematics*, *Statistical Theory and Related Fields*, *BMC Medical Research Methodology*, *Journal of Pharmaceutical Policy and Practice*, *Scientific Reports*

Member of

Biometrics Section of the American Statistical Association, American Economic Association, International Chinese Statistical Association, Chinese Association for Applied Statistics, Society of Causal Inference

Teaching

Short course in

(1) Causal inference

Teaching assistant experience in

(1) Causal inference, (2) Intermediate econometrics, (3) Mathematical statistics, (4) Probability and statistics, (5) Stochastic process, (6) Linear algebra.

参与项目

[1] 2022—2024　科技部国家重点研发计划 “面向药品现代化监管的智能化服务平台研发与应用”（**项目骨干**）

著作

[1] 侯艳、邓宇昊、孙嘉瑞译. 健康科学领域中的缺失数据分析方法. (周晓华、周初安、刘丹萍、丁晓波). 人民卫生出版社; 2021.

[2] 周晓华、邓宇昊译. 缺失数据统计分析. 3rd ed. (Little RJA, Rubin DB). 高等教育出版社; 2022.

[3] 杨伟、周晓华、韩开山、邓宇昊译. 观察性研究设计. 2nd ed. (Rosenbaum PR). 高等教育出版社; 2024.

[4] 周晓华、邓宇昊、刘礼著. 生物统计中的因果推断. 科学出版社. 2026+.

专利

[1] 周晓华、**邓宇昊**、陆芳、赵阳. 北京大学、中国中医科学院西苑医院. 基于临床试验数据的数据处理方法及系统. 专利号 CN 2021 1 0064413.6

[2] 周晓华、**邓宇昊**. 北京大学、北京大学重庆大数据研究院. 一种药物有效性评估方法. 专利号 CN 2023 1 0753119.5

[3] 周晓华、汪毅、**邓宇昊**. 北京大学、北京大学重庆大数据研究院. 存在部分治愈人群的药物有效性评估方法和系统. 专利号 CN 2022 1 0800499.9

[4] 周晓华、**邓宇昊**. 北京大学. 观察性研究中存在伴发事件时药物有效性评估方法和系统. 专利号 CN 2022 1 0793245.9

[5] 周晓华、冯信钦、**邓宇昊**、许婧榆. 北京大学. 包含时依协变量的临床多状态模型因果推断及预测方法和系统. 专利号 CN 2024 1 1993041.5