

Jieru Shi

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<https://herashi.github.io/>

EDUCATION	Ph.D. in Biostatistics , University of Michigan Supervised by Dr. Walter Dempsey and Dr. Zhenke Wu. M.S. in Biostatistics , University of Michigan B.S. in Statistics Sichuan University • Exchange student, Statistics, City University of Hong Kong	Aug 2020–Aug 2023 Aug 2018–Apr 2020 Sep 2014–Jun 2018 Jan–May 2016
ACADEMIC APPOINTMENTS	Postdoctoral Research Associate , StatsLab, University of Cambridge Supervised by Dr. Qingyuan Zhao on causal inference Graduate Research Assistant , University of Michigan Principal Investigators: Brahmajee K. Nallamothu & Jessica R. Golbus • The Virtual AppLIcation-Supported ENvironment To INcrease Exercise During Cardiac Rehabilitation Study (VALENTINE) Study Graduate Student Consultant , University of Michigan Director: Kerby Shedden • Consulting for Statistics, Computing and Analytic Research (CSCAR) Graduate Research Assistant , University of Michigan Principal Investigators: Srijan Sen & Amy Bohnert • The PROviding Mental health Precision Treatment (PROMPT) Precision Health Study	Sep 2023–present May 2022–May 2023 Sep 2021–May 2022 Aug 2020–Aug 2021
TEACHING	Causal inference • Part III 16-lecture class in DPMMS, University of Cambridge, • Part III Example class. Statistics • Part IB Supervision in DPMMS, University of Cambridge. Graphical Models: Statistical Learning and Causal Inference • Guest lecture in Cambridge Part III Systems Biology, Modelling, and Analysis of Networks. Causal Inference • Part III Example Class in DPMMS, University of Cambridge. Statistical Modeling • Part II Supervision in DPMMS, University of Cambridge. Time-Varying Causal Effect Estimation in Mobile Health Studies • Guest lecture in BIOS 653, Biostatistics, University of Michigan.	Jan–Mar 2025 Jan–Mar 2024 Jan 2024 Oct–Dec 2023 Oct–Dec 2023 Nov 2022
PUBLICATIONS	<p>[1] J Shi, Z Wu, W Dempsey, “Assessing time-varying causal effect moderation in the presence of cluster-level treatment effect heterogeneity and interference”. <i>Biometrika</i>, Volume 110, Issue 3, 2023, Pages 645–662, doi: 10.1093/biomet/asac065.</p> <p>[2] Golbus, J. R., Gupta, K., Luff, E., Shi, J., Dempsey, W., ... & Nallamothu, B. K. “A randomized trial of a mobile health intervention to augment cardiac rehabilitation”. 2023, <i>npj Digit. Med.</i> 6, 173. doi: 10.1038/s41746-023-00921-9.</p> <p>[3] Gupta, K., Shi, J., Dempsey, W., Mukherjee, B., Kheterpal, S., Klasnja, P., ... & Golbus, J. 2023, “Contextually tailored text messages to augment cardiac rehabilitation: the Virtual AppLIcation-supported ENvironment To INcrease Exercise (VALENTINE) study”. <i>Cardiovascular Digital Health Journal</i>, 4(5), S4-S5. doi: 10.1016/j.cvdhj.2023.08.010</p>	

- [4] Golbus, Jessica R., **Jieru Shi**, Kashvi Gupta, Rachel Stevens, V.Swetha E. Jeganathan, Evan Luff, Thomas Boyden, et al. 2024, “Text Messages to Promote Physical Activity in Patients With Cardiovascular Disease: A Micro-Randomized Trial of a Just-In-Time Adaptive Intervention”. *Circulation: Cardiovascular Quality and Outcomes*, e010731. doi: [10.1161/CIRCOUTCOMES.123.010731](https://doi.org/10.1161/CIRCOUTCOMES.123.010731).

PREPRINTS

- [5] **J Shi**, Z Wu, W Dempsey, “Estimating time-varying direct and indirect causal excursion effects for binary outcomes”. 2022, *arXiv*: [2212.01472](https://arxiv.org/abs/2212.01472) [stats.ME]
- [6] **J Shi**, Z Wu, W Dempsey, “Incorporating auxiliary variables to improve the efficiency of time-varying treatment effect estimation”. 2023, *arXiv*: [2306.17260](https://arxiv.org/abs/2306.17260) [stats.ME] (Journal of the American Statistical Association, Major Revision)
- [7] **J Shi**, W Dempsey, “A meta-learning method for estimation of causal excursion effects to assess time-varying moderation”. 2023, *arXiv*: [2306.16297](https://arxiv.org/abs/2306.16297) [stats.ME] (Submitted to Biometrics)
- [8] EK Huch, **J Shi**, MR Abbott, JR Golbus, A Moreno, WH Dempsey. “Debiased machine learning and network cohesion for doubly-robust differential reward models in contextual bandits”. 2024, *arXiv*: [2312.06403](https://arxiv.org/abs/2312.06403) [stats.ML] (Submitted to the NeurIPS, 2024)

TALKS AND PRESENTATIONS

- [1] *Joint Statistical Meeting, virtual*, (contributed talk, Aug 2021), “Assessing time-varying causal effect moderation in the presence of cluster-level treatment effect heterogeneity”.
- [2] *American Causal Inference Conference (ACIC)* (poster, May 2022), “Assessing time-varying causal effect moderation in the presence of cluster-level treatment effect heterogeneity”.
- [3] *Joint Statistical Meeting, Washington D.C.*, (contributed talk, Aug 2022), “Assessing time-varying causal effect moderation in the presence of cluster-level treatment effect heterogeneity”.
- [4] *e-HAIL Symposium: Artificial Intelligence and Health, University of Michigan*, (poster, Sep 2022), “The Virtual AppLication-Supported ENvironment To INcrease Exercise (VALENTINE) during cardiac rehabilitation study”.
- [5] *ENAR Spring Meeting* (contributed talk, Mar 2023), “Estimating time-varying direct and indirect causal excursion effects for binary outcomes”.
- [6] *Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS)* (contributed talk, Mar 2023), “A meta-learning method for estimation of causal excursion effects to assess time-varying moderation”.
- [7] *American Causal Inference Conference (ACIC)* (poster, May 2023), “A meta-learning method for estimation of causal excursion effects to assess time-varying moderation”.
- [8] *International Conference of Statistics and Data Science (ICSIDS)* (contributed talk, Dec 2023), “A meta-learning method for estimation of causal excursion effects to assess time-varying moderation”.
- [9] *Causal Inference Reading Group at the University of Cambridge* (Feb 2024), “Incorporating auxiliary variables to improve the efficiency of time-varying treatment effect estimation”.
- [10] *Enhancing models with machines? – Causal machine learning in economics, statistics and computer science* (invited talk, July 2024), “A novel method for assessing time-varying moderation”.
- [11] *Joint Statistical Meeting* (contributed talk, Aug 2024), “A meta-learning method for estimation of causal excursion effects to assess time-varying moderation”.

EDITORIAL SERVICE

Ad-Hoc Reviewer

- Biometrics ×1
- Journal of the American Statistical Association ×1
- Biostatistics ×1

EXTERNAL PROFESSIONAL ACTIVITIES

Local Organization Committee Member

Jun 2023

- International Chinese Statistical Association (ICSA) 2023 Applied Statistics Symposium

Organizer

Sep 2022–Apr 2023

- Graduate Student Working Group in the Biostatistics Department, University of Michigan

Program Committee Member

Dec 2021

- Causal Inference Challenges in Sequential Decision Making Workshop at NeurIPS

Program Co-Organizer

Dec 2020

- Machine Learning for Mobile Health Workshop at NeurIPS

AWARDS

Honorable Mention

Mar 2023

- The oral presentation session, 2023 Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS) at Ann Arbor, MI.

Student Travel Award Recipient

Jan 2023

- 2023 the 14th International Conference on Health Policy Statistics (ICHPS) at Scottsdale, AZ.

Junior Researcher Travel Grant

May 2022

- American Causal Inference Conference (ACIC) at Berkeley, CA.

Rackham Travel Grant

- Joint Statistics Meeting (JSM) at Washington, D.C.

Aug 2022

- Joint Statistics Meeting (JSM), virtual.

Aug 2021

LANGUAGES

Mandarin Chinese (*native*), **English** (*working proficiency*)