YUMING SUN

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Research Interests

Methodology: statistical learning, survival analysis, semi/nonparametric models, feature selection
Application: risk assessment in healthcare, statistical learning for medical imaging

Education

University of Michigan, Ann Arbor, MI
Ph.D. in Biostatistics.   Advisor: Yi Li and Jian Kang   2023

University of Michigan, Ann Arbor, MI
M.S. in Biostatistics   2019

Sun Yat-sen University, Guangzhou, China
B.Med. in Preventive Medicine   2017

Professional Experience

Applied Statistics Track Director
CAMS, William & Mary, Williamsburg, VA   2025 - present

Assistant Professor
Department of Mathematics, William & Mary, Williamsburg, VA   2023 - present

Research Assistant
Department of Biostatistics, University of Michigan, Ann Arbor, MI   2019 - 2023

Honors and Awards

American Statistical Association Risk Analysis Student Paper Award	2021
Michigan Student Symposium for Interdisciplinary Statistical Sciences Best Poster	2021
Michigan Student Symposium for Interdisciplinary Statistical Sciences ASA Sponsored Award	2021
Department of Biostatistics Outstanding Academic Performance Award	2019
The Medical Scholarship by Daiichi-Sankyo Corporation	2012
Sun Yat-sen University Merit Based Scholarship	2012 - 2016

Publications

* denotes co–first authorship

Paper Submitted

1. **Sun, Y.**, Lee, A., Lee, S., Dey, T. (2025). Spatiotemporal Analysis of Human Response to Wildfire Events and $PM_{2.5}$ Exposure. Under review (second round), American Journal of Epidemiology.

2. Clapham, J., Chen, M., Mersa, O., Koltermann, K., Zhang, Y., **Sun, Y.**, Burnet, E., Zhou, G. (2025). IMUVIE: Generalizable Pickup Measurement via Motion Movies. Under review (second round),

Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies.

3. Clapham, J., Mersa, O., Chi, C., Zhang, Y., **Sun, Y.**, Burnet, E., Zhou, G. (2025).Trunk-Top: Humanized Pickup Activity Measurement with Uncertainty Quantification via Trunk-based Inertial Sensors. Under review, ACM Transactions on Computing for Healthcare.

Paper Published

4. Alvarez, A.*, **Sun, Y.***, Li, Y., Christiani, D. (2025). Effects of gender on mortality in patients with lung cancer: A multiple mediation analysis of Boston Lung Cancer Study. Clinical Lung Cancer.

5. **Sun, Y.**, Kang, J., Zhang, F., Wang, H., Lai, P., Washko, G., Estepar, R., Christiani, D., Li, Y. (2025). Characterization of occupational endotoxin-related small airway disease with longitudinal paired inspiratory/expiratory CT scans. Chest.

6. **Sun, Y.**, Kang, J., Haridas, C., Mayne, N., Potter, A., Yang, C. J., Christiani, C. D. and Li, Y. (2024). Penalized Deep Partially Linear Cox Models with Application to CT Scans of Lung Cancer Patients. Biometrics, 80(1), ujad024.

7. **Sun, Y.***, Salerno, S.*, Pan, Z., Yang, E., Sujimongkol, C., Song, J., Wang, X., Han, P., Zeng, D., Kang, J., Christiani, D., and Li, Y. (2024). Assessing the prognostic utility of clinical and radiomic features for COVID-19 patients admitted to ICU: challenges and lessons learned. Harvard Data Science Review, 6(1).

8. **Sun, Y.**, Salerno, S., He, X., Pan, Z., Yang, E., Sujimongkol, C., Song, J., Wang, X., Han, P., Kang, J., Sjoding, M., Jolly, S., Christiani, D., and Li, Y. (2023) Use of machine learning to assess the prognostic utility of radiomic features for in-hospital COVID-19 mortality. Scientific Reports, 13(1), p.7318.

9. **Sun, Y.**, Kang, J., Brummett, C. and Li, Y. (2023). Individualized risk assessment of preoperative opioid use by interpretable neural network regression. The Annals of Applied Statistics, 17(1), p.434.

10. Alvarez, A. A. R., **Sun, Y.**, Kothari, J., Digumarthy, S. R., Byrne, N. M., Li, Y., & Christiani, D. C. (2022). Sex disparities in lung cancer survival rates based on screening status. Lung Cancer, 171, p.115-120.

11. Salerno, S., **Sun, Y.**, Morris, E. L., He, X., Li, Y., Pan, Z., Han, P., Kang, J., Sjoding, M. W., and Li, Y. (2021). Comprehensive evaluation of COVID-19 patient short-and long-term outcomes: Disparities in healthcare utilization and post-hospitalization outcomes. PLOS ONE, 16(10), e0258278.

12. Noshad, M., Choi, J., **Sun, Y.**, Hero, A., and Dinov, I. D. (2021). A data value metric for quantifying information content and utility. Journal of Big Data, 8(1), p.82.

13. Zhang, H., **Sun, Y.**, Zhang, D., Zhang, C., and Chen, G. (2018). Direct medical costs for patients with schizophrenia: a 4-year cohort study from health insurance claims data in Guangzhou city, Southern China. International Journal of Mental Health Systems, 12, p.1-14.

Presentations

SCIENTIFIC CONFERENCES

1. Invited Presentation. International Conference on Econometrics and Statistics (EcoSta), Waseda University, Tokyo, Japan, 2025.

2. Invited Presentation. ODU Math Awareness Conference, Old Dominion University, Norfolk, VA, 2025.

3. Invited Presentation. IMS New Researchers Conference, Oregon State University, Corvallis, OR, 2024.

4. Invited Presentation. International Conference on Econometrics and Statistics (EcoSta), Beijing Normal University, Beijing, China, 2024.

5. Invited Presentation. Joint Statistical Meetings (JSM), Virtual, 2021.

6. Contributed Presentation. ENAR Spring Meeting, International Biometric Society, Virtual, 2021.

7. Contributed Presentation. Michigan Student Symposium for Interdisciplinary Statistical Sciences, Virtual, 2021.

8. Contributed Presentation. MIDAS Symposium, University of Michigan, Ann Arbor, MI, 2018.

   SEMINARS

9. Invited Research Talk. Research in Progress: STEM Talk, William & Mary, Williamsburg, VA, 2025.

10. Invited Research Talk. Department of Mathematics, William & Mary, Williamsburg, VA, 2022.

Grants

1. William & Mary, PI: Yuming Sun
   Jun 2024 - Sep 2025. Amount: $5,000
   Estimating Heterogeneous Lung Cancer Treatment Effects on Survival Outcomes via Causal Deep Learning

Teaching

William & Mary

Math 459/559: Survival Analysis	Fall 2025, Spring 2025, Spring 2024
Math 452/552: Mathematical Statistics	Fall 2025
Math 351: Probability & Statistics for Scientists	Fall 2024
Math 106: Elementary Probability & Statistics	Spring 2025, Spring 2024, Fall 2023

University of Michigan

Biostat 601: Probability And Distribution Theory (Teaching Assistant)	Fall 2018

Service

Department of Mathematics, William & Mary

- Honors and Undergraduate Research Committee	2025
- Colloquium and Seminar Committee	2023

Department of Biostatistics, University of Michigan

- Faculty Search Committee	2022
- Health Data Science Committee	2020

Referee
- Biometrics
- BMC Health Services Research
- Electronic Journal of Statistics
- Journal of Statistical Computation and Simulation
- Journal of Psychosocial Oncology
- Statistics in Medicine

- Statistics in Biosciences
- International Journal of Intelligent Systems
- The New England Journal of Statistics in Data Science

Memberships

Institute of Mathematical Statistics	Since 2021
American Statistical Association	Since 2020
International Biometrics Society (Eastern North American Region)	Since 2020
International Chinese Statistical Association	Since 2025