

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.**, Kang, J., Li, Y. Estimating Heterogeneous Treatment Effects with Survival Outcomes via Deep Survival Learner. Under review, Lifetime Data Analysis.
2. Clapham, J., Chen, M., Mersa, O., Koltermann, K., Zhang, Y., **Sun, Y.**, Burnet, E., Zhou, G. IMUVIE: Generalizable Pickup Measurement via Motion Movies. Under review, IEEE/ACM International

conference on Connected Health: Applications, Systems and Engineering 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 Accepted/Published

4. **Sun, Y.**, Lee, A., Lee, S., Dey, T. (2025). Spatiotemporal Analysis of Human Response to Wildfire Events and PM_{2.5} Exposure. American Journal of Epidemiology, accepted.
5. Alvarez, A. A. R.*, **Sun, Y.***, Li, Y., Christiani, D. C. (2025). Effects of Sex on Mortality in Patients With Lung Cancer: A Multiple Mediation Analysis of the Boston Lung Cancer Study. Clinical Lung Cancer, in press (Corrected Proof). Published online September 24, 2025.
6. **Sun, Y.**, Kang, J., Zhang, F., Wang, H., Lai, P., Washko, G. R., Estépar, R. S. J., Christiani, D. C., Li, Y. (2025). Characterization of Occupational Endotoxin-Related Small Airway Disease With Longitudinal Paired Inspiratory/Expiratory CT Scans. CHEST, 168(1), 43–55.
7. **Sun, Y.**, Kang, J., Haridas, C., Mayne, N., Potter, A., Yang, C. J., Christiani, D. C. and Li, Y. (2024). Penalized Deep Partially Linear Cox Models with Application to CT Scans of Lung Cancer Patients. Biometrics, 80(1), ujad024.
8. **Sun, Y.***, Salerno, S.*, Pan, Z., Yang, E., Sujimongkol, C., Song, J., Wang, X., Han, P., Zeng, D., Kang, J., Christiani, D. C., 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).
9. **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), 7318.
10. **Sun, Y.**, Kang, J., Brummett, C. and Li, Y. (2023). Individualized Risk Assessment of Preoperative Opioid use by Interpretable Neural Network Regression. Annals of Applied Statistics, 17(1), 434.
11. 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, 115–120.
12. 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.
13. 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), 82.
14. 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, 1–14.

Presentations

SCIENTIFIC CONFERENCES

1. Invited Presentation. International Joint Conference CFE-CMStatistics, Birkbeck, University of London,

London, UK, 2025.

2. Invited Presentation. International Conference on Econometrics and Statistics (EcoSta), Waseda University, Tokyo, Japan, 2025.
3. Invited Presentation. ODU Math Awareness Conference, Old Dominion University, Norfolk, VA, 2025.
4. Invited Presentation. IMS New Researchers Conference, Oregon State University, Corvallis, OR, 2024.
5. Invited Presentation. International Conference on Econometrics and Statistics (EcoSta), Beijing Normal University, Beijing, China, 2024.
6. Invited Presentation. Joint Statistical Meetings (JSM), Virtual, 2021.
7. Contributed Presentation. ENAR Spring Meeting, International Biometric Society, Virtual, 2021.
8. Contributed Presentation. Michigan Student Symposium for Interdisciplinary Statistical Sciences, Virtual, 2021.
9. Contributed Presentation. MIDAS Symposium, University of Michigan, Ann Arbor, MI, 2018.

SEMINARS

10. Invited Research Talk. Research in Progress: STEM Talk, William & Mary, Williamsburg, VA, 2025.
11. 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
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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