Aolan Li

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EDUCATION

Ph.D. in Statistics, University of Connecticut
Advisor: Prof. Ming-Hui Chen
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Storrs, Connecticut, USA
August 2020 - August 2025
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MS in Biostatistics, University of Connecticut
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Storrs, Connecticut, USA
August 2018 - May 2020
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BS in Applied Statistics, Sun Yat-sen University (SYSU)
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Guangzhou, Guangdong, China
August 2014 - May 2018
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SKILLS

Programming & Computing: R, R Shiny, Stan, SAS, SQL, Python, LaTeX, HPC/SLURM
Methods: Bayesian inference and Monte Carlo computation, longitudinal/multivariate models, causal mediation, microbiome analysis, high-dimensional methods, machine learning.

RESEARCH EXPERIENCE

- **Dissertation:** *Advancing Marginal Likelihoods for Longitudinal Data Analysis* (marginal likelihood decomposition for covariance-structure assessment in RCTs/longitudinal data).

- **Other research:** Marginal likelihood estimation and Monte Carlo methods for Bayesian computation.

JOURNAL PUBLICATIONS

1. **Li, A.** Liu, P. Y., Wang, Y. B., Milkey, A., Lewis, P. O., & Chen, M. H.. A comparison of Monte Carlo based marginal likelihood estimators (Accepted by WIREs Computational Statistics.).
2. **Li, A.** & Chen, M. H.. Marginal Likelihood Decomposition for Evaluating Covariance Structures of Repeated Measures in Randomized Controlled Trials (Under Review).
3. Zhao, T., **Li, A.**, Wu, W., Chen, J., Combellick, J., Chen, M. H., & Cong, X. (2025). Maternal Racial Differences and Socioeconomic Status in Preterm Infant Neurodevelopment, Feeding, and Growth. Nursing Research, 10-1097.
4. Chen, J., **Li, A.**, Wu, W., Xu, W., Zhao, T., Starkweather, A. R., ... & Cong, X. S. (2025). Machine learning to phenotype pain and predict response to pain interventions among young adults with irritable bowel syndrome. medRxiv, 2025-10.
5. Wu, W., **Li, A.**, Graziano TA, Salner, A., Chen, M.H., Singh, V., Judge, M.P., Cong, X., Xu, W. Mediating Effect of Self-Efficacy on the Relationships Among Patient-Provider Partnership, Pain, and Quality of Life in Individuals With Cancer. Oncol Nurs Forum. 2025 Oct 20;52(6):448-459.
6. Wu, W., Wang, W., **Li, A.**, Chen, J., Lainwala, S., Matson, A. P., ... & Cong, X. (2025). Neonatal pain experience and pain sensitivity trajectories in preterm infants: A longitudinal study of flexion withdrawal reflex thresholds over the first two years of age. The Journal of Pain, 105558.
7. Wu, W., Chen, J., **Li, A.**, Chen, M. H., Starkweather, A., & Cong, X. (2025). Mechanistic Insights into a Self-Management Intervention in Young Adults with Irritable Bowel Syndrome: A Pilot Multi-Omics Study. Biomedicines, 13(9), 2102.
8. Wu, W., **Li, A.**, Singh, V., Salner, A., Chen, M. H., Judge, M. P., ... & Xu, W. (2025). Pain, fatigue, and associated gene expressions over chemotherapy in patients with colorectal cancer. PloS one, 20(6), e0325849.
9. Zhao, T., **Li, A.**, Chang, X., Xu, W., Quinn, T., Chen, J., ... & Cong, X. Sex-differences in Mothers' Own Milk and Neurodevelopmental Outcomes in Preterm Infants. Frontiers in Pediatrics, 13, 1523952.
10. McNaboe, R. Q., Kong, Y., Henderson, W. A., Cong, X., **Li, A.**, Seo, M. H., ... & Posada-Quintero, H. F. (2025). Optimizing Sensor Locations for Electrodermal Activity Monitoring Using a Wearable Belt System. Journal of Sensor and Actuator Networks, 14(2), 31.
11. Milkey, A., Chen, M. H., Wang, Y. B., **Li, A.**, & Lewis, P. O. (2025). The Sequential Multispecies Coalescent. bioRxiv, 2025-01.
12. Xu, W., **Li, A.**, Yackel, H. D., Sarta, M. L., Salner, A., & Judge, M. P. (2024). Dietary consumption patterns in breast cancer survivors: Pilot evaluation of diet, supplements and clinical factors. European Journal of Oncology Nursing, 102678.
13. Zhao, T., **Li, A.**, Reese, B., Cong, Q., Corwin, E. J., Taylor, S. N., ... & Cong, X. (2024). Association between mitochondrial DNA copy number and neurodevelopmental outcomes among black and white preterm infants up to two years of age. Interdisciplinary Nursing Research, 3(3), 149-156.
14. Wang, Y. B., Milkey, A., **Li, A.**, Chen, M. H., Kuo, L., & Lewis, P. O. (2023). LoRaD: Marginal likelihood estimation with haste (but no waste). Systematic Biology, 72(3), 639-648.

CONFERENCE PUBLICATIONS / ABSTRACTS

1. Judge, M., Xu, W., **Li, A.**, Hayley, Y., Michelle, S., & Salner, A. (2025). Informing Educational Outreach in Oncology: Evaluation of Dietary Consumption Patterns, Supplement Consumption and Clinical Factors in Breast Cancer Survivors. Journal of the Academy of Nutrition and Dietetics, 125(10), A27.
2. Zhao, T., **Li, A.**, Graziano, Chen, M. H., Matson A., & Cong, X. Racial Disparity in the Association between Early Life Pain/Stress Exposure and Neurodevelopmental Outcomes among Black and White Preterm Infants. ENRS' 37th Annual Scientific Sessions, Philadelphia, PA.
3. Wu, W., **Li, A.**, Graziano, T., Salner, A., Chen, M. H., Judge M. P., Cong, X. & Xu, W. Chemotherapy-Related Symptoms Trajectories and the Linkage with Physical Activity and Diet in Colorectal Cancer Patients. ENRS' 36th Annual Scientific Sessions, Boston Park Plaza, US.
4. Anita Oppong, R. M., **Li, A.**, & Teresa Graziano, M. S. (2024, March). Symptom Burdens and Social Factors in Older Cancer Survivors Receiving Immunotherapy: Insights from the NIH All of Us Research Program. In Oncology Nursing Forum (Vol. 51, No. 2, pp. 50A-50A). Oncology Nursing Society.
5. Xu, W., Elliam, W., & **Li, A.**(2024, March). FACTORS ASSOCIATED WITH PAIN IN CANCER SURVIVORS-AN ANALYSIS OF BRFSS DATA. In ONCOLOGY NURSING FORUM (Vol. 51, No. 2). 125 ENTERPRISE DR, PITTSBURGH, PA 15275 USA: ONCOLOGY NURSING SOC.
6. Yang, G. S.,Graziano, T. A., **Li, A.**, Starkweather A. R., Lynch Kelly, D., & Lyon, D. E. The Influence of Race on Differences in Psychoneurological Symptoms Among Early-Stage Breast Cancer Survivors. 2023 Council for the Advancement of Nursing Science, virtual event.
7. **Li, A.**, & Teresa Graziano, M. S. N. (2023, March). Association of social determinants of health and COVID-19-related behaviors with cervical cancer screening in Hispanic women. In Oncology Nursing Forum (Vol. 50, No. 2, pp. A45-A46). Oncology Nursing Society.

WORK EXPERIENCE

Program Administrator

School of Nursing, Yale University, CT, U.S.   *Sep 2025 - Present*

- Biostatistical lead for NIH-/NSF-funded studies (neurodevelopment, microbiome, symptoms).

ORISE Statistical Research Intern

Center for Drug Evaluation and Research (CDER), U.S. Food and Drug Administration, Silver Spring, MD, U.S.May 2023 – Aug 2023

- Built simulation and Bayesian workflows for oncology trials, including imaging-window evaluation and treatment-switching analyses.

Graduate Assistant (multiple units)

University of Connecticut, Storrs, CT, U.S.   *Aug 2021 – May 2025*

- Statistical analyst across Statistics, School of Nursing, and COR^{2}E (NSF Award No. 2310558); supported manuscripts and conference outputs via reproducible analysis, power simulations, causal mediation, and Bayesian computation.

PRESENTATION

- **Li, A.** A New Bayesian Approach for Analyzing longitudinal data by Leveraging Multiple Historical Data in the Presence of Missing Data. The 6th Eastern Asia Chapter of International Society for Bayesian Analysis (2022)

PROFESSIONAL SERVICE

- Statistics in Pharmaceuticals 2024 volunteer.
- New England Statistical Society (NESS) Statathon 2022 committee member.
- Statistics in Pharmaceuticals 2022 volunteer.
- The 5th Annual New England Rare Disease Statistics Workshop (NERDS) 2022 volunteer.
- 2021 World Meeting of the International Society for Bayesian Analysis volunteer.