

Mengbing Li

University of Michigan
Department of Biostatistics
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EDUCATION

University of Michigan – Ann Arbor

Ph.D. Candidate in Biostatistics

May 2019 — Winter 2024 (expected)

Dissertation topic: Bayesian structured latent variable models for individualized health

M.S. in Biostatistics

Sept 2017 — Apr 2019

University of North Carolina at Chapel Hill

B.S.P.H., Biostatistics and Mathematics. Minor: Statistics

Aug 2013 — May 2017

Graduated with Highest Honor and Distinction

RESEARCH INTERESTS

Theory and Methods: Bayesian nonparametrics, latent class models, topic models, approximate Bayesian inference, reinforcement learning, machine learning

Applications: nutritional epidemiology, individualized medicine, electronic health records, mobile health

PROFESSIONAL EXPERIENCE

Graduate Student Research Assistant (GSRA), University of Michigan

Jan 2018 – Present

- Advisor: Dr. Zhenke Wu
- Collaborated with hematologists to research on evaluating anticoagulant treatment practice for patients with cancer-associated thrombosis
- Built a Bayesian topic model for predicting patient disease trajectories using medical claims data
- Construct a tree-regularized Bayesian latent class model for assessing dietary patterns among Hispanics/Latinos using food consumption survey data

Research Statistics Intern, GlaxoSmithKline (GSK)

May 2020 – Jul 2020

- Advisor: Dr. Andrew Gehman
- Conducted numerical simulations on Bayesian methods for a Latin Square design
- Estimated the dose response curve for animal brain imaging data

Undergraduate Research Assistant, Biometric Consulting Lab, UNC

Aug 2015 – May 2017

- Advisor: Dr. Gary Koch
- Provided statistical analyses to medical and public health research projects
- Proof-read draft manuscripts for minor edits

Biometrics Intern, Cytokinetics Inc., South San Francisco, CA

May 2016 – Aug 2016

- Advisor: Dr. Lisa Meng
- Wrote edit checks, generated TFLs, and validated tables using SAS
- Performed two statistical simulations: 1) closed testing procedure, and 2) a clinical trial design involving multiple hypothesis testing.

HONORS & AWARDS

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|---|--------------------------------------|
| Institute of Mathematical Statistics Hannan Graduate Student Travel Award | 2023 |
| Winner of Research Poster Competition | ENAR 2023 |
| Rackham Conference Travel Grant, UM | March 2020, March 2022, and Aug 2022 |
| Best Performance on PhD Qualifying Exam, UM | December 2019 |
| Outstanding Graduate Student Instructor, UM | Nov 2018 |
| Delta Omega Undergraduate Award of Excellence, UNC | March 2017 |
| Dean's Lists, UNC | Fall 2013 - Spring 2017 |

PUBLICATIONS

PUBLISHED PEER-REVIEWED ARTICLES:

1. Edupuganti S, **Li M**, Wu Z, Basu T, Barnes G, Carrier M, Sood SL, Griggs JJ, Schaefer JK (2022). Factors associated with inferior vena cava filter placement and retrieval for patients with cancer-associated thrombosis. *The American Journal of Medicine* 135(4): 478-487.e5. PMID: 34861200. doi: 10.1016/j.amjmed.2021.11.006.
2. **Li M**, Park DE, Aziz M, Liu CM, Price LB, Wu Z (2023). Integrating sample similarity information into latent class analysis: a tree-structured shrinkage approach. *Biometrics* 79(1):264-279. doi: 10.1111/biom.13580. Epub 2021 Nov 10. PMID: 34658017. [Link]
3. Schaefer JK, **Li M**, Wu Z, Basu T, Barnes G, Carrier M, Griggs JJ and Sood SL (2021). Clinical and sociodemographic factors associated with anticoagulant use for cancer associated thrombosis. *Journal of Thrombosis and Thrombolysis* 52(1): 214-223. PMID: 33544284. doi: 10.1007/s11239-021-02392-9.
4. Schaefer JK, **Li M**, Wu Z, Basu T, Dorsch M, Barnes GD, Carrier M, Griggs JJ and Sood SL (2020). Anticoagulant medication adherence for cancer-associated thrombosis: A comparison of LMWH to DOACs. *Journal of Thrombosis and Haemostasis* 19(1): 212-220. PMID: 33104289. doi:10.1111/jth.15153.
5. Bitar MS, Olson DJ, **Li M**, Davis RM (2019). The Correlation Between Dry Eyes, Anxiety and Depression: The Sicca, Anxiety and Depression Study. *Cornea* 38(6): 684-689. doi:10.1097/ICO.0000000000001932.
6. Schaefer JK, Wu Z, **Li M**, Griggs JJ, and Sood SL (2018). Practice and Correlates of Cancer Associated Thrombosis: The Impact of Socioeconomic Status. *Blood* 132 (Supplement 1): 2225. doi: <https://doi.org/10.1182/blood-2018-99-117931>.

MANUSCRIPTS IN PROGRESS: (*co-first authors; †co-senior authors)

1. ***Li M**, *Shi C, †Wu Z and †Fryzlewicz P (2023+). Reinforcement Learning in Possibly Nonstationary Environments. *Submitted to Annals of Statistics (In revision)*. [arXiv][Python code for CUSUM-RL]
2. *Hu L, ***Li M**, Shi C, †Wu Z and †Fryzlewicz P (2023+). Doubly Inhomogeneous Reinforcement Learning. *Submitted to NeurIPS 2023. In rebuttal*.
3. Wu Z, Li Z, Chen I, **Li M** (2023+). Tree-informed Bayesian multi-source domain adaptation: cross-population probabilistic cause-of-death assignment using verbal autopsy. *Biostatistics. Major revision*.
4. **Li M**, Stephenson B, and Wu Z (2023+). Tree-Regularized Bayesian Latent Class Analysis for Improving Weakly Separated Dietary Pattern Subtyping in Small-Sized Subpopulations. *Submitted to Journal of American Statistical Association: Application & Case Studies*. [arXiv][R package `ddt1cm`]
5. **Li M**, Wu Z (2022+). Longitudinal Structural Topic Models for Estimating Latent Health Trajectories using Administrative Claims Data. *In preparation*.

PRESENTATIONS ([†]invited, *posters, ^upcoming)

Tree-Regularized Bayesian Latent Class Analysis for Improving Weakly Separated Dietary Pattern Subtyping in Small-Sized Subpopulations:

[†]June 2023, Eastern North American Region Spring Meetings, Anchorage, AK.

[†]June 2023, 36th New England Statistical Symposium, Boston, MA.

*March 2023, Eastern North American Region Spring Meetings, Nashville, TN.

August 2022, Joint Statistical Meetings, Washington DC.

March 2022, Eastern North American Region Spring Meetings, Houston, TX.

Reinforcement Learning in Possibly Nonstationary Environments:

[†]June 2022, EcoSta Conference, Kyoto, Japan (hybrid).

Longitudinal Structural Topic Models for Estimating Latent Health Trajectories Using Administrative Claims

Data:

January 2023, International Conference on Health Policy Statistics, Scottsdale, AZ.

*March 2021, Eastern North American Region Spring Meetings (virtual).

March 2020, Eastern North American Region Spring Meetings, Nashville, TN (virtual).

*March 2020, Michigan Student Symposium for Interdisciplinary Statistical Sciences, Ann Arbor, MI.

SERVICE (^upcoming)

Department of Biostatistics, University of Michigan:

Student Representative on Brown Bag Seminar 2021 – 2022 academic year

Student Representative on Health Data Science Committee 2020 – 2021 academic year

Student Representative on Prospective Student Experience Student Meetings Oct 2020, 2021

Student Representative on Search Committee 2019 – 2020 academic year

Student Representative on Health Data Science Committee 2018 – 2019 academic year

Organizer of Biostatistics Student Journal Club May 2018 – April 2019

2023 Eastern North American Region Spring Meetings:

Chair of the Contributed Session: Bayesian learning, prior elicitation, and prediction March 2023

2022 Eastern North American Region Spring Meetings:

Chair of the Invited Session: Modern Tree-integrative Statistical Methods for Biomedical and Public Health Studies March 2022

Referee: The numbers in parentheses indicate the number of manuscripts reviewed or currently reviewing, excluding revisions.

Journal of American Statistical Association (Applications and Case Studies Discussion) (1), Computational Statistics and Data Analysis (1), Statistics in Medicine (1)

TEACHING

Graduate Student Instructor (GSI), UM

Biostat 653: Theory and Application of Longitudinal Analysis (Instructor: Dr. Zhenke Wu) Fall 2022

- Delivered a guest lecture on *Causal Inference with Marginal Models and Time-Varying Covariates*

Biostat 521: Applied Biostatistics (Instructor: Dr. Hui Jiang) Fall 2017

- Rated 4.96/5.00 by students for overall being an excellent teacher on teaching evaluation.

Statistics Tutor, UNC

Aug 2016 – May 2017

Academic Enrichment Program in School of Public Health

TECHNICAL SKILLS

Advanced: R, Python, L^AT_EX, SAS, C++
Basic: Stan, JAGS, Matlab, Mathematica