

Jin Hyung Lee

lee6024@purdue.edu <https://jlee309.github.io>

Education

Purdue University, West Lafayette, IN, U.S.A.

Postdoctoral Researcher

Oct 2025 – Present

Advisor: Dr. Anindya Bhadra

George Mason University, Fairfax, VA, U.S.A.

Ph.D. in Statistics

Dec 2025

Dissertation: *Variational Approximations for Massive Spatial Data: Scalable Bayesian Inference*

Advisor: Dr. Ben Seiyon Lee

Seoul National University, Seoul, South Korea

M.P.H. in Biostatistics

Aug 2020

Advisor: Dr. Ho Kim

Yonsei University, Seoul, South Korea

B.A. in Applied Statistics & Economics

Aug 2015

Research Interests

Variational inference, normalizing flows, neural networks, Bayesian statistics, spatial statistics, functional data analysis, with applications in atmospheric science, hydrology, and clinical trials.

Publications

3. **Lee, J.H.**, and Lee, B.S. (2026). A scalable variational Bayes approach to fit high-dimensional spatial generalized linear mixed models. *Technometrics*, 68(1), 146–158.
2. Poythress, J.C., **Lee, J.H.**, Takeda, K., and Liu, J. (2024). Bayesian methods for quality tolerance limit (QTL) monitoring. *Pharmaceutical Statistics*, 23(6), 1166–1180.

Preprints

1. **Lee, J.H.**, and Lee, B.S. (2025). A scalable variational Bayes approach for fitting non-conjugate spatial generalized linear mixed models via basis expansions. *arXiv preprint* arXiv:2512.00895. *Under review*.

Manuscripts in Preparation

1. **Lee, J.H.**, and Bhadra, A. (2026). A scalable variational Bayes approach for modeling multi-variate spatial models.
2. Lee, H.S., Kim, J.S., Park, J., Lee, B.S., and **Lee, J.H.** (2026). Deep spatial function-on-scalar regression with robust nonparametric testing.
3. **Lee, J.H.**, Lee, S., and Kim, S.D. (2026). A scalable variational Bayes method for a robust high-dimensional Bayesian spatial quantile regression.
4. Wang, Y., **Lee, J.H.**, Yamaguchi, Y., and Han, C. (2026). Bayesian hierarchical dose-response model averaging in small clinical trials for decision-making.

Honors & Awards

- Winner, Korean International Statistical Society (KISS) Outstanding Student Paper Competition Jan 2025
- ENVR Travel Award to NCAR, American Statistical Association (ASA) Oct 2024
- R. Clifton Bailey Travel Award, Department of Statistics, George Mason University Aug 2024
- Graduate Student Travel Fund Award, George Mason University Aug 2024
- Graduate Student Travel Fund Award, George Mason University Aug 2023
- Distinguished Service and Leadership Award, Department of Statistics, George Mason University May 2023
- Second Place Poster Presentation Award, UMBC Probability and Statistics Day Apr 2023

Presentations

A Scalable Variational Bayes Approach for Fitting Non-Conjugate Spatial Generalized Linear Mixed Models via Basis Expansions

- Eastern North America Region (ENAR) 2026 Spring Meeting (Talk, Mar 2026). Indianapolis, IN.
- Department of Statistics Zoom Seminar at Inha University (Talk, Oct 2025). Incheon, South Korea.
- Joint Statistical Meetings (Talk, Aug 2024). Portland, OR.

A Scalable Variational Bayes Approach to Fit High-Dimensional Spatial Generalized Linear Mixed Models

- Joint Statistical Meetings (Talk, Aug 2025). Nashville, TN.
- StatConnect 2025 (Poster, Mar 2025). Fairfax, VA.
- ENVR Workshop: Spatial Data Science for the Environment, Mesa Lab at NCAR (Poster, Oct 2024). Boulder, CO.
- Joint Statistical Meetings (Talk, Aug 2024). Portland, OR.
- Joint Statistical Meetings (Talk, Aug 2023). Toronto, Canada.
- Clemson Climate Extremes Workshop (Poster, May 2023). Clemson, SC.
- UMBC 14th Probability and Statistics Day (Poster, Apr 2023). Baltimore, MD.
- 30 Years of Mason Statistics (Poster, Mar 2023). Fairfax, VA.

Bayesian Hierarchical Dose-Response Model Averaging in Small Clinical Trials for Decision Making

- 2024 NIC-ASA & ICSA Midwest Chapter Joint Fall Conference (Talk, Oct 2024). Chicago, IL.

Work Experience

Astellas Pharma US, Northbrook, IL

Biostatistics Intern

May – Aug 2024

- Proposed a novel Bayesian Hierarchical Dose Response Model Averaging (BHDRMA) for small sample problems using Bayes factor, BIC, and Power Prior.
- Executed simulation studies using bootstrap model averaging to inform Go/No-Go decision processes.

Astellas Pharma US, Northbrook, IL

Biostatistics Intern

May – Aug 2023

- Proposed a novel Bayesian method based on partial information for monitoring Quality Tolerance Limit (QTL) parameters.

Korea International Trade Association, Seoul, South Korea

Senior Data Researcher

Jan 2016 – Jun 2020

- Conducted in-depth analysis of global index and trade data from UN Comtrade and The World Bank.
- Applied machine learning algorithms using Stata, SAS, R, and Python to deliver actionable insights.

Academic Service

Review Statistical Analysis and Data Mining, Statistica Sinica, Spatial Statistics

Community Student Representative, Korean International Statistical Society Aug 2024

Vice President, George Mason University Statistics Graduate Student Association Aug 2022

Teaching

Instructor, Purdue University

STAT517 Introduction to Statistical Theory and Inference

Summer 2026

Instructor, George Mason University

STAT344 Probability and Statistics for Engineers and Scientists I

Summer 2025

Teaching Evaluation (4.49/5), Response Ratio 79.55%

Graduate Teaching Assistant, George Mason University

STAT350 Introductory Statistics II 2024F, 2025S

STAT572 Intro Statistical Learning 2025S

STAT346 Probability for Engineers 2024F

STAT354 Probability and Statistics for Engineers and Scientists II 2022S

STAT344 Probability and Statistics for Engineers and Scientists I 2021Su, 2022S

STAT250 Introductory Statistics I 2021F, 2022Su

Technical Skills

Programming: R, SAS, TensorFlow, PyTorch, Python, L^AT_EX, SQL, R Shiny, AWS, Datawrapper, Flourish, Tableau