

Jin Hyung Lee

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

Education

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, Machine Learning, Normalizing flows, Neural networks, Bayesian statistics, Spatial statistics with applications in atmospheric science and clinical trials.

Work Experience

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

Postdoctoral Researcher

Oct 2025 – Present

Advisor: Dr. Anindya Bhadra

- Developed a variational inference framework using normalizing flows for high-dimensional multivariate spatial processes.

Astellas Pharma US, Northbrook, IL

Biostatistics Intern

May – Aug 2024

- Proposed a novel Bayesian Hierarchical Dose Response Model Averaging (BHDRMA) using Bayes factor, BIC, and Power Prior, validated via simulation against bootstrap model averaging to inform Go/No-Go decisions.

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 by using Applied machine learning algorithms.

Publications

1. **Lee, J.H.**, and Lee, B.S. (2027). [A scalable variational Bayes approach for fitting non-conjugate spatial generalized linear mixed models via basis expansions](#). *Computational Statistics & Data Analysis*.
2. **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.
3. 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.

Under Review

1. Wang, Y., **Lee, J.H.**, Yamaguchi, Y., and Han, C. (2026). Bayesian hierarchical dose-response model averaging in small clinical trials for decision-making. *Under review*.

Manuscripts in Preparation

1. **Lee, J.H.**, and Bhadra, A. (2026). A Scalable Variational Approach for Modeling Multivariate Spatial Data with Variational Inference Normalizing Flows
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. Hong, S., **Lee, J.H.** (2026) Dynamic Stochastic General Equilibrium Models with Variational Inference Normalizing Flows

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 Approach for Modeling Multivariate Spatial Data with Variational Inference Normalizing Flows

- Joint Statistical Meetings (Talk, Aug 2026). Boston, MA.

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.

Academic Service

Review	Statistica Sinica, Spatial Statistics, Statistical Analysis and Data Mining	
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
	Teaching Evaluation (4.61/5), Response Ratio 95.83%	

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	2021S, 2021F

Technical Skills

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

References

Dr. Ben Seiyon Lee Assistant Professor
Department of Statistics at George Mason University
slee287@gmu.edu

Dr. Anindya Bhadra Professor
Department of Statistics at Purdue University
bhadra@purdue.edu

Dr. Lily Wang Professor, Associate Dean for Graduate Studies,
College of Engineering and Computing
Department of Statistics at George Mason University
lwang41@gmu.edu

Teaching References

Dr. Brett Hunter Associate Professor and Associate Chair for Education (ACE)
Department of Statistics at George Mason University
bhunte11@gmu.edu

Dr. Isuru Dassanayake Assistant Professor and Graduate Program Co-Director
Department of Statistics at George Mason University
idassana@gmu.edu