

SE YOON LEE

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EDUCATION

Ph.D. Statistics, Texas A&M University, College Station, U.S.A.

May 2021

Advisor: Prof. Bani K. Mallick

Overall GPA: 3.78/4

M.A. Applied Statistics, Yonsei University, Seoul, South Korea

Feb 2016

Advisor: Prof. Joseph H.T. Kim

Overall GPA: 3.86/4

B.S. Mathematics, Yonsei University, Seoul, South Korea

Feb 2013

Graduated with the 2nd highest class rank out of 43 students

Overall GPA: 3.84/4

Grades for core mathematics courses: [\[Click\]](#)

RESEARCH INTEREST

Bayesian Analysis, Survival Analysis, Deep Learning, Machine Learning

WORK EXPERIENCE

Amgen Inc.

May 2021 – present

Scientist - Modeling & Simulations

Thousand Oaks, CA

- Developed Pharmacokinetics/Pharmacodynamics/Cox hazard regression models for Phase I cancer clinical trials of AMG160 to treat a metastatic castration-resistant prostate cancer (mCRPC).
- Researched machine learning and deep neural network models to fit single dose data for subsequent simulation of multiple dosing scenarios.

Novartis International AG.

May 2020 – Aug 2020

Biostatistics Summer Intern

East Hanover, NJ

- Developed a Bayesian linear mixed effect model for patients who have wet age-related macular degeneration to predict best-corrected visual acuity over the maintenance phase and suggest a personalized dose regimen. The proposed model has been trained by actual patients' data from HAWK and HARRIER studies (Number of patients is around 1,800 patients). ; [\[Abstract\]](#)

EMD Serono Inc. Merck KGaA.

May 2019 – Aug 2019

Pharmacometrics Summer Intern

Billerica, MA

- Developed a Bayesian adaptive clinical trial design in Phase I cancer clinical trials, which aimed at utilizing grade information from the Common Toxicity Criteria for Adverse Events provided by the National Cancer Institute. ; [\[Abstract\]](#) ; [\[Poster\]](#)

Texas A&M University.

Aug 2016 – May 2021

Graduate Research/Teaching Assistant

College Station, TX

- Researched on applications and developments of various statistical models (e.g. non-linear mixed effect model, nonparametric/semiparametric longitudinal model, clustering analysis, classification, hierarchical Poisson model, etc) to various industrial problems arising from biomedical, petroleum, wind energy industries, and COVID-19 outbreak.

PUBLICATIONS

Journal Article

- [1] **Seyoon Lee**, Joseph H.T. Kim. (2018) “Exponentiated generalized Pareto distribution: Properties and applications towards extreme value theory,” *Communications in Statistics - Theory and Methods*, 48:8, 2014-2038
- [2] **Se Yoon Lee**, Bowen Lei, and Bani K. Mallick. (2020) “Estimation of COVID-19 spread curves integrating global data and borrowing information,” *PLOS ONE* ; [\[Github\]](#)
- [3] **Se Yoon Lee**^{*}, Kahkashan Afrin^{*}, Ashif Iquebal^{*}, Mostafa Karimi^{*}, Allyson Larsen^{*}, and Bani K Mallick^{*}. (2020) “Directionally Dependent Multi-View Clustering Using Copula Model,” *PLOS ONE* (* : equal contribution, authors are alphabetically ordered in the last name.)
- [4] **Se Yoon Lee** and Bani K. Mallick. (2021) “Bayesian Hierarchical modeling: application towards production results in the Eagle Ford Shale of South Texas,” *Sankhyā: The Indian Journal of Statistics, Series B* ; [\[Github\]](#)
- [5] **Se Yoon Lee**. (2021) “Gibbs sampler and coordinate ascent variational inference: a set-theoretical review,” *Communications in Statistics - Theory and Methods*
- [6] **Se Yoon Lee**, Alain Munafo, Pascal Girard, and Kosalaram Goteti. (2022) “Optimization of dose selection using multiple surrogates of toxicity as a continuous variable in Phase I cancer trial,” *Contemporary Clinical Trials* ; [\[Github\]](#)
- [7] **Se Yoon Lee**. (2022) “Bayesian Nonlinear Models for Repeated Measurement Data: An Overview, Implementation, and Applications,” *Mathematics*

Conference Paper/Poster

- [1] **Se Yoon Lee**, Shankar Lanke, Alain Munafo, Pascal Girard, and Kosalaram Goteti. (2020) “Optimization of dose selection using multiple surrogates of toxicity as continuous variable in Phase I cancer trial,” *ACoP11, ISSN:2688-3953, Vol 2*

Under review

- [1] **Se Yoon Lee**, Peng Zhao, Debdeep Pati, Bani K. Mallick. (2022) “Tail-adaptive Bayesian Shrinkage,” *Journal of the Royal Statistical Society: Series B* ; [\[Slides\]](#)
- [2] **Se Yoon Lee**. (2022) “The use of a log-normal prior for the Student-t distribution”

PROFESSIONAL ACTIVITIES

Invited Peer Reviewers

- European Journal of Clinical Investigation (Impact Factor: 3.481)
- Artificial Intelligence Review (Impact Factor: 8.139)
- The Journal of Clinical Pharmacology (Impact Factor: 3.126)
- Statistics in Medicine (Impact Factor: 2.373)

HONORS AND AWARDS

Travel fund for an invited talk at Yonsei University	<i>Dec 2019</i>
Given to an invited speaker for the presentation	
Travel fund for an invited talk at University of Michigan	<i>Jun 2019</i>
Given to an invited speaker for an annual meeting about wind energy	
Travel fund for poster presenter for the Houston Geological Society	<i>Mar 2018</i>
Given to a poster presenter	
Anant Kshirsagar fellowship	<i>Jul 2018</i>
Given to graduate students who demonstrate excellence in making progress in research	
The 1st place prize in SETCASA poster session in 2018	<i>Apr 2018</i>
Given to only one winner for the poster session	
Graduate student travel award for JSM	<i>Jul 2017, 2018</i>
Given to graduate students who make a presentation at the conference	

PRESENTATIONS AND TALKS

Invited speakers

- “Prediction of best-corrected visual acuity for wet age-related macular degeneration patients in HAWK and HARRIER studies via a Bayesian hierarchical linear model” *Aug 2020*
Organization: Novartis International AG, Internship Project Presentation
- “Estimation of COVID-19 spread curves integrating global data and borrowing information” *Jul 2020*
Organization: Mathophilia 2020, IQAC, Banwarilal Bhalotia College, Asansol, India
- “Bayesian Hierarchical Model: Application towards Wind Farm Data” *Jun 2020*
Organization: National Science Foundation, University of Connecticut, Mansfield, CT, U.S.A.
- “Continuous shrinkage prior revisited: a collapsing behavior and remedy” ; **[Abstract]** *Dec 2019*
Organization: Yonsei University, Department of Applied Statistics, Seoul, South Korea
- “Tutorial: understanding offshore wind energy data and spatial modeling” *Jun 2019*
Organization: National Science Foundation, University of Michigan, Ann Arbor, MI, U.S.A.

Poster presentations

- “Hierarchical Bayesian modeling: application towards production results in the Eagle Ford shale of South Texas” *Mar 2019*
Organization: Houston Geological Society Applied Geoscience Conference, Houston, TX, U.S.A.
- “Hierarchical Bayesian modeling: application towards production results in the Eagle Ford shale of South Texas” *Sep 2018*
Organization: Texas A & M Conference on Energy, College Station, TX, U.S.A.
- “Hierarchical Bayesian modeling: application towards petroleum data” *Apr 2018*
Organization: Southern Texas Chapter American Statistical Association, College Station, TX, U.S.A.
- “Exponentiated Generalized Pareto Distribution: Properties and Applications Towards Extreme Value Theory” *Aug 2017*
Organization: Joint Statistical Meeting 2017, Baltimore, MD, U.S.A.

SOFTWARE

Software used in papers

- Bayesian Hierarchical Richards Model ; Written in R ; [\[Download\]](#) ; [\[Github\]](#)
- Spatial Weibull Model ; Written in R ; [\[Github\]](#)

SKILLS

Language	Fluent in English and Korean; Elementary in Chinese and Japanese
Computer Language	Proficient in R, Python, SQL, Microsoft Access, SAS, and NONMEM
Certificate	Cognigen NONMEM Workshop