

# SE YOON LEE

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## EDUCATION

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**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

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**Bayesian Analysis, Pharmacometrics, Clinical Pharmacology, Cancer Genomics**

## WORK EXPERIENCE

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**Clinical Pharmacology, Modeling & Simulations Group, Amgen Inc.**

*May 2021 – present*

*Scientist - Modeling & Simulations*

Thousand Oaks, CA

- Utilized clinical pharmacology and exposure-biomarker-efficacy/safety relationship to guide the development and effective use of medicine.

Supervisor: Malidi Ahamadi

**Ophthalmology Department, 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).

Supervisor: Liansheng Zhu ; [\[Abstract\]](#) ; [\[Slides\]](#)

**Pharmacometric Department, 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.

- *The internship work has been accepted to the American Conference on Pharmacometrics 2020.*

Supervisor: Kosalaram Goteti ; [\[Abstract\]](#) ; [\[Poster\]](#)

**Department of Statistics, 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.

- Researched on gene expression analysis for biomarker discovery in cancer studies, and development of relevant statistical models (e.g. high-dimensional statistical model, multi-view clustering analysis, etc).
- Constructed a Database Platform for graduate programs of the College of Science supervised by Dean (Valen Johnson) and Associate Dean (Suojin Wang) (Software: MS Access/SQL).
- Helped instructors for graduate/undergrad courses.

## PUBLICATIONS

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### Published

- [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**<sup>\*</sup>, Kahkashan Afrin<sup>\*</sup>, Ashif Iquebal<sup>\*</sup>, Mostafa Karimi<sup>\*</sup>, Allyson Larsen<sup>\*</sup>, and Bani K Mallick<sup>\*</sup>. (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**, 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*
- [5] **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* ; [\[Github\]](#)
- [6] **Se Yoon Lee**. (2021) "Gibbs sampler and coordinate ascent variational inference: a set-theoretical review," *Communications in Statistics - Theory and Methods*

### Submitted

- [1] **Se Yoon Lee**, Peng Zhao, Debdeep Pati, Bani K. Mallick. (2021+) "Tail-adaptive Bayesian Shrinkage" ; [\[Slides\]](#)

## PROFESSIONAL ACTIVITIES

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### Invited Peer Reviewers (Topic of assigned paper: COVID-19 epidemiological modeling)

- European Journal of Clinical Investigation (Impact Factor: 3.481)

## HONORS AND AWARDS

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

## PRESENTATIONS AND TALKS

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### 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

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### Software used in papers

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

## SKILLS

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<b>Language</b>	Fluent in English and Korean; Elementary in Chinese and Japanese
<b>Computer Language</b>	Proficient in R, Python, SQL, Microsoft Access, SAS, and NONMEM