

# Keunbaik Lee

## CONTACT INFORMATION

Department of Statistics  
Sungkyunkwan University  
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Seoul, Korea 110-745

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## EDUCATION

<b>Ph.D.</b>	Statistics	August 2007
University of Florida (UF)	Gainesville, Florida	
Advisor: Dr. Michael J. Daniels.		
Dissertation title: Marginalized Regression Models for Longitudinal Categorical Data.		
<b>M.S.</b>	Statistics	February 1997
Kyungpook National University (KNU)	Daegu, Korea	
Thesis title : Bayesian Methods for Combining Results from Different Experiments.		
<b>B.S.</b>	Statistics	February 1995
Kyungpook National University	Daegu, Korea	

## WORK EXPERIENCE

<b>Full Professor</b>		
Department of Statistics	Sungkyunkwan University	September, 2019 — Present
<b>Associate Professor</b>		
Department of Statistics	Sungkyunkwan University	September, 2012 — August, 2019
<b>Assistant Professor</b>		
Department of Statistics	Sungkyunkwan University	March, 2012 — August, 2012
<b>Assistant Professor</b>		
Biostatistics Program	Louisiana State University Health Sciences Center	August, 2007 — January 2012
<b>Research Assistant</b>		
Department of Statistics	University of Florida	August, 2003 — August, 2007
Department of Statistics	University of Florida	January, 2002 — July, 2002
<b>Teaching Assistant</b>		
Department of Statistics	University of Florida	August, 2002 — July, 2003
<b>Instructor</b>		
Department of Statistics	Andong National University	March, 2000 — June, 2000

## RESEARCH INTERESTS

- Generalized Linear Model
- Longitudinal Data Analysis
- Mixture Model
- Bayesian Modeling
- Causal Effect Inference

## PUBLICATIONS

### Books

1. **Lee, K.**, Lee, K., Kim, Y. and Kim, E. (2021). *What is a p-value anyway? (version in Korean)*. Shinhan Press Media.
2. **Lee, K.** (2022). *Longitudinal data analysis: using R*. Freedom Academy.

### Papers

- SCI(E) Journal

1. Koo, D., Kim, C. and Lee, K. (2022). A Bayesian method for multinomial probit model. Accepted by *Journal of the Korean Statistical Society*.
2. Lee, K.-J., Kim, C., Chen, R.-B. and **Lee, K.** (2022). Robust probit linear mixed models for longitudinal binary data. *Biometrical Journal*, October, **64**, issue 7, 1307-1324.
3. Rhee, A., Kwak, M.-S. and **Lee, K.** (2022). Robust modeling of multivariate longitudinal data using modified Cholesky and hypersphere decompositions. *Computational Statistics & Data Analysis*, June, **170**, Article 107439.
4. **Lee, K.**, Lee, C.-H., Kwak, M.-S. and Jang, E. (2021). Analysis of multivariate longitudinal data using ARMA Cholesky and hypersphere decompositions. *Computational Statistics & Data Analysis*, April, **156**, Article 107144.
5. Lee, K.-J., Chen, R.-B., Kwak, M.-S. and **Lee, K.** (2021). Determination of correlations in multivariate longitudinal data with modified Cholesky and hypersphere decomposition using Bayesian variable selection approach. *Statistics in Medicine*, February, 20, **40**, issue 4, 978-997.
6. **Lee, K.**, Cho, H., Kwak, M.-S. and Jang, E. (2020). Estimation of covariance matrix of multivariate longitudinal data using modified Cholesky and hypersphere decompositions. *Biometrics*, March, **76**, issue 1, 75-86.
7. Kim, J., Sohn, I. and **Lee, K.** (2020). Bayesian cumulative logit random effects models with ARMA random effects covariance matrix. *Journal of the Korean Statistical Society*, January, **49**, issue 1, 32-54.
8. **Lee, K.**, Choi, Y., Um, H.Y. and Yoo, J.K. (2019) On Fused Dimension Reduction in Multivariate Regression. *Chemometrics and Intelligent Laboratory Systems*, October, **193**, Article 103828.
9. **Lee, K.**, Jung, H., and Yoo, J. K. (2019). Modeling of the ARMA random effects covariance matrix in logistic random effects models. *Statistical Methods & Applications*, June, **28**, 281-299.
10. **Lee, K.** and Joo, Y. (2019). Marginalized models for longitudinal count data. *Computational Statistics & Data Analysis*, August, **136**, 47-58.
11. **Lee, K.**, Baek, C., and Daniels, M. J. (2017). ARMA Cholesky factor models for the covariance matrix of linear models. *Computational Statistics & Data Analysis*, November, **115**, 267-280.
12. **Lee, K.**, Song, H., and Yoo, J. (2017). Dimension test approach of heteroscedasticity in linear model. *Communications in Statistics - Simulation and Computation*, June, **46**, 4356-4366.
13. **Lee, K.**, Sohn, I., and Kim, D. (2016). Analysis of long series of longitudinal ordinal data. *Computational Statistics & Data Analysis*, February, **94**, 363-371.
14. **Lee, K.** and Yoo, J. (2014). Bayesian Cholesky factor models in random effects covariance matrix for generalized linear mixed models. *Computational Statistics & Data Analysis*, **80**, 111-116.
15. Lee, M., **Lee, K.**, and Lee, J. (2014). Marginalized transition shared random effects models for longitudinal binary data with nonignorable dropout. *Biometrical Journal*, **56**, 230-242.

16. **Lee, K.** and Yoo, J. (2014). Canonical correlation analysis through linear modeling. *Australian & New Zealand Journal of Statistics*, **56** 59-72.
17. Kang, S., **Lee, K.**, and Lee, W. (2014). Noninformative priors for the generalized half-normal distribution. *Journal of the Korean Statistical Society*, **43**, 19-29.
18. **Lee, K.** and Daniels, M. (2013). Causal inference for bivariate longitudinal quality of life data in presence of death using global odds ratios. *Statistics in Medicine*, **32**, 4275-4284.
19. **Lee, K.**, Daniels, M., and Joo, Y. (2013). Flexible marginalized models for bivariate longitudinal ordinal data. *Biostatistics*, **14**, 462-476.
20. **Lee, K.**, Yoo, J. K., Lee, J., and Hagan, J. (2012). Modeling the random effects covariance matrix for the generalized linear mixed models. *Computational Statistics & Data Analysis*, **56**, 1545-1551.
21. Liu, X., Wang, K., and **Lee, K.** (2011). Association of standardized estimated glomerular filtration rate with the prevalence of hypertension among adults in the United States. *Journal of Human Hypertension*, **25**, 469-475.
22. Yoo, J. K. and **Lee, K.** (2011). Model-free predictor tests in survival regression through sufficient dimension reduction. *Lifetime Data Analysis*, **17**, 433-444.
23. **Lee, K.**, Kang, S., Liu, X., and Seo, D. (2011). Likelihood-based approach for analysis of longitudinal nominal data using marginalized random effects models. *Journal of Applied Statistics*, **38**, 1577-1590.
24. **Lee, K.**, Joo, Y., Song, J. J. and Harper D. (2011). Analysis of zero-inflated clustered count data: A marginalized model approach. *Computational Statistics & Data Analysis*, **55**, 824-837.
25. **Lee, K.**, Daniels, M., and Sargent, D. (2010). Causal effects of treatments for informative missing data due to progression/death. *Journal of the American Statistical Association*, **105**, 912-929.
26. **Lee, K.** and Mercante, D. (2010). Longitudinal nominal data analysis using marginalized models. *Computational Statistics & Data Analysis*, **54**, 208-218.
27. Yoo, J. K., **Lee, K.**, and Wu, S. (2010). On the extension of sliced average variance estimation to multivariate regression. *Statistical Methods and Applications*, **19**, 529-540.
28. Joo, Y., Brumback, B., **Lee, K.**, Yun, S., Kim, K., and Joo, C. (2009). Clustering of temporal profiles using Bayesian logistic mixture model: application to groundwater level data to understand recharge characteristics of urban groundwater. *Journal of Agricultural, Biological, and Environmental Statistics*, **14**, 356-373.
29. **Lee, K.**, Joo, Y., Yoo, J. K., and Lee, J. (2009). Marginalized random effects models for multivariate longitudinal binary data. *Statistics in Medicine*, **28**, 1284-1300.
30. Joo, Y., Kim, D., **Lee, K.**, Yun, S., Kim, K., and Mercante, D. (2009). Estimation of anthropogenic pollution using a Bayesian contamination model: an application to fractured bedrock groundwater from Han river watershed, South Korea. *Environmetrics*, **20**, 221-234.
31. **Lee, K.** and Daniels, M. (2008). Marginalized models for longitudinal ordinal data with application to quality of life studies. *Statistics in Medicine*, **27**, 4359-4380.
32. **Lee, K.**, and Daniels, M. (2007). A class of Markov models for longitudinal ordinal data. *Biometrics*, **63**, 1060-1067.
33. Joo, Y., **Lee, K.**, Min, J., Yun, S., and Park, T. (2007). Logistic mixture of multivariate regressions for analysis of water quality impacted by agrochemicals. *Environmetrics*, **18**, 499-514.
34. Joo, Y., Casella, G., Booth, J., **Lee, K.**, and Enkemann, S. (2007). Normalization of dye bias in microarray data using the mixture of splines model. *Statistical Applications in Genetics and Molecular Biology*, **6**, Issue 1, Article 2.

1. Lee, I. and Lee, K. (2022). KCYP panel data analysis using Bayesian multivariate linear model. Accepted by *The Korean Journal of Applied Statistics*.
2. Park, J. and Lee, K. (2022). Analysis of Korean longitudinal study of ageing using Bayesian robust probit linear mixed model. *Journal of the Korean Data & Information Science Society*, July, textbf33, No. 4, 657-676.
3. Kim, Y. and **Lee, K.** (2022). Comparison study for Bayesian multivariate linear model. *Journal of the Korean Data & Information Science Society*, March, **33** (2), 249-268.
4. Koo, D. and **Lee, K.** (2022). Analysis of tax finance panel data using multivariate  $t$ -linear models. *Journal of the Korean Data & Information Science Society*, January, **33**, No. 1, 11-34.
5. Yun, D. and **Lee, K.** (2020). Comparison between AR and ARMA covariance matrices for multivariate longitudinal data. *Journal of the Korean Data & Information Science Society*. **31**, No. 5, 721-740.
6. Suh, R. and **Lee, K.** (2020). Analysis of labor panel data using multivariate regression models. *Journal of the Korean Data & Information Science Society*. **31**, No. 4, 549-568.
7. Kwak, N.Y. and **Lee, K.** (2020). Comparison study of modeling covariance matrix for multivariate longitudinal data. *The Korean Journal of Applied Statistics*, **33**, No. 3, 1-16.
8. Kim, J. and **Lee, K.** (2020). Bayesian baseline-category logit random effects model for longitudinal nominal data. *Communications for Statistical Applications and Methods*, **27**, No. 2, 201-210.
9. **Lee, K.** (2019). Marginalized models for longitudinal ordinal data with nonignorable dropout. *Journal of the Korean Data & Information Science Society*, **30**, 479-490.
10. Kang, D., Kim, B.O. and **Lee, K.** (2018). Marginalized random effects models with ARMA random effects covariance matrix. *Journal of the Korean Data & Information Science Society*, **29**, 501-512.
11. Sung, Y. and **Lee, K.** (2018). Negative binomial loglinear mixed models with general random effects covariance matrix. *Communications for Statistical Applications and Methods*, **25**, 61-70.
12. Choi, J. and **Lee, K.** (2017). Poisson linear mixed models with ARMA random effects covariance matrix. *Journal of the Korean Data and Information Science Society*, **28**, 659-668.
13. Nam, S. and **Lee, K.** (2017). Comparison of the covariance matrix for general linear model. *The Korean Journal of Applied Statistics*, **30**, 103-117.
14. Kim, J., Sohn, I., and **Lee, K.** (2017). Bayesian modeling of random effects precision/covariance matrix in cumulative logit random effects models. *Communications for Statistical Applications and Methods*, **24**, 81-96.
15. Han, E.-J. and **Lee, K.** (2016). Dynamic linear mixed models with ARMA covariance matrix. *Communications for Statistical Applications and Methods*, **23**, 575-585.
16. **Lee, K.** and Kim, S. (2016). Modeling of random effects covariance matrix in marginalized random effects models. *Journal of the Korean Data and Information Science Society*, **27**, 815-825.
17. Kyung, Y. and **Lee, K.** (2015). Bayesian pattern mixture model for longitudinal binary data with nonignorable missingness. *Communications for Statistical Applications and Methods*, **22**, 589-598.
18. Kim, J. and **Lee, K.** (2015). Survey of models for random effects covariance matrix in generalized linear mixed model. *The Korean Journal of Applied Statistics*, **28**, 211-219.
19. Jin, I. and **Lee, K.** (2014). Hurdle model for longitudinal zero-inflated count data analysis. *The Korean Journal of Applied Statistics*, **27**, 923-932.
20. Jeon, J. and **Lee, K.** (2014). Review and discussion of marginalized random effects models. *Journal of the Korean Data & Information Science Society*, **25**, 1263-1272.
21. **Lee, K.** and Sung, S. (2014). Autoregressive Cholesky factor modeling for marginalized random effects models. *Communications for Statistical Applications and Methods*, **21**, 169-181.
22. **Lee, K.** (2013). Bayesian modeling of random effects covariance matrix for generalized linear mixed models. *Communications for Statistical Applications and Methods*, **20**, 235-240.

23. Joo, Y., **Lee, K.**, and Jung, H. (2008). Estimation of interval censored regression spline model with variance function. *Journal of the Korean Data & Information Science Society*, **19**, 1247-1253.
24. Lee, I., Kim, D., and **Lee, K.** (1999). Bayesian methods for combining results from different experiments. *The Korean Communications in Statistics*, **6**, 181-191.

## Abstracts

1. Kim, J., **Lee, K.**, and Park, J. (2008). Expression of a HDL receptor scavenger receptor class B, type I in prostate cancer cells. *Biology of Reproduction*, **78**, 108, Abstract 235.

## Submitted Papers

1. **Lee, K.**, Rhee, A. and Kwak, M.-S. (2022). Robust modeling of long series of multivariate longitudinal data. Submitted.
2. Lee, K.-J., Chen, R.-B. and **Lee, K.** (2022). Robust Bayesian cumulative Probit linear mixed models for longitudinal ordinal data. Submitted.
3. **Lee, K.**, Daniels, J. M. and Shorr, R. I. (2012). Marginalized transition models for the analysis of longitudinal count data with application to two clinical trials. Submitted.

## Manuscripts and Ongoing Work

1. **Lee, K.**, Joo, Y., Min, J., and Yun, S. Clustering of repeated measures using Bayesian logistic mixture model. In preparation.
2. **Lee, K.** and Daniels, M. Bayesian Marginalized models for mixed multivariate longitudinal data. In preparation.

## GRANTS & CONTRACTS

1. Bayesian modeling of longitudinal categorical data. (Korea National Research Foundation). Role: P.I. Total cost: 371,772,000 (KRW), period: 03/01/2022-02/28/2026.
2. Study of development on the risk measurement and risk index of open market (Seoul Customs Service). Role: P.I. Total cost: 20,000,000 (KRW), period: 09/03/2021-12/24/2021.
3. Modeling for multivariate longitudinal data and its applications (Korea National Research Foundation). Role: P.I. Total cost: 137,500,000 (KRW), period: 06/01/2019-02/28/2022.
4. Modeling of high-dimensional covariance matrix for longitudinal data analysis (Korea National Research Foundation). Role: P.I. Total cost: 150,000,000 (KRW), period: 11/01/2016-10/31/2019.
5. Modeling of random effects covariance matrix and its applications (Korea National Research Foundation). Role: P.I. Total cost: 128,700,000 (KRW), period: 11/01/2014-04/30/2017.
6. Marginalized modeling and its applications (Korea National Research Foundation). Role: P.I. Total cost: 148,591,000 (KRW), period: 05/01/2012-04/30/2015.
7. Marginalized modeling and its applications (NSF). Submitted in Nov., 2010. Role: P.I. Not funded.
8. Analysis of Incomplete Longitudinal Categorical Data (NSF & Louisiana Board of Regents). 2010. Role: P.I. Submitted in November 2010. Not funded.
9. Marginalized models for complex longitudinal data (NSF). Submitted in Nov., 2009. Role: P.I. Not funded.

10. CMS Nonpayment for Nosocomial Injury and Risk of Falls in Hospitals (NIH). P.I.: Ronald I. Shore, (sub-contract from the University of Florida), Total direct cost: \$10,000. period: 09/30/2009-8/31/2011. Role: Statistician.
11. Scavenger receptor class B, type I mediated cholesterol metabolism and prostate cancer (Department of Defense). P.I.: Jong Kim. Submitted in 2008, Role: Co-P.I. Not funded.
12. Gender-tissue specific cholesterol transport by SR-BI in cancer (NIH, R03). P.I.: Jong Kim. Submitted in 2007. Role: Consultant. Not funded.

## TEACHING

### Sungkyunkwan University

- STA 4002: Statistical Computing (Spring 2014)
- STA 5004: Categorical Data Analysis (English) (Fall 2013)
- STA 5008: Multivariate Statistical Analysis (English) (Spring 2013, 2020)
- STA 5010: BioStatistics (Spring 2013)
- STA 5019: Generalized Linear Models (English) (Fall 2012, Spring 2015, 2017, 2019)
- STA 5030: Bayesian Statistics (English) (Fall 2014, Spring 2016)
- STA 5035: Longitudinal Data Analysis (English) (Fall 2012, 2015, 2016, 2020, 2021)
- STA 5035: Longitudinal Data Analysis (Fall 2022)
- STA 2010: Introduction to Regression Analysis (Fall 2014 (English), 2015, 2016, 2017)
- STA 2014: Introduction to Mathematical Statistics (English) (Spring 2012)
- STA 3005: Introduction to Bayesian Statistics (English) (Fall 2013, 2014, 2015, 2016, 2017, 2019, 2020, 2021)
- STA 3005: Introduction to Bayesian Statistics (Fall 2022)
- STA 3012: Categorical Data Analysis (English) (Spring 2020, 2021)
- STA 3012: Categorical Data Analysis (Spring 2022)
- STA 3017: Introduction to Survival Analysis (Spring 2013)
- STA 3026: Introduction to Experimental Design (Fall 2013, Spring 2014, 2015, 2016, 2017, 2019, 2020, 2021, 2022)

### LSU Health Sciences Center

- BIOS 7205: Advanced Statistical Theory II (Spring 2010, 2011)
- BIOS 6210: Categorical Data Analysis (Fall 2009, 2010, 2011)
- BIOS 7202: Generalized Linear Models (Spring 2009)
- BIOS 6700: Biostatistics Seminar (Fall 2007; Spring 2008; Fall 2008; Spring 2009)

## CONSULTING

- 18-month postoperative seizure frequency predicts long term stability of seizure frequency after temporal lobectomy (Spring 2010). Collaboration with Dr. Thompson at LSU-Health Sciences Center.
- Traffic impact on project time performance during incentive construction projects (Fall 2009). Collaboration with Dr. Pyeon at San Jose State University.
- Prospective observation of CAD/CAM titanium-ceramic single crowns: 3-year follow up (Spring 2009). Collaboration with Heeje Lee, School of Dentistry, LSU-Health Sciences Center.
- Prospective observation of CAD/CAM titanium-ceramic fixed partial dentures: 3-year follow up (Spring 2009), Collaboration with Heeje Lee, School of Dentistry, LSU-Health Sciences Center.
- New Orleans murder rate estimation (Fall 2008), Collaboration with Dr. Harper, Loyola University.
- Analysis of the data set about E-government Rankings of the States (Fall 2008), collaboration with Dr. Yun at Texas State University.
- Analysis of the data set about TX school registration (Spring 2008), collaboration with Dr. Yun at Texas State University.

## PRESENTATIONS

### Invited papers

- Analysis of Longitudinal Binary Data using Probit Linear Mixed Models. Korean Data Information Society Spring meeting, Pusan National University, May 2021.
- Robust probit linear mixed models for longitudinal binary data. Korean Statistical Society Fall meeting. Seoul National University, November 2021.
- Robust modeling of multivariate longitudinal data using modified Cholesky and hypersphere decompositions. Data Science, Statistics & Visualisation, online conference, July 2021.
- Robust estimation for multivariate t linear mixed models for multivariate longitudinal data. Korean Data Information Society Fall meeting, Sungkyunkwan, November 2021.
- Determination of correlations in multivariate longitudinal data analysis using Bayesian variable selection approach. Korean Statistical Society Summer meeting. Hoseo University, July 2020.
- Analysis of Longitudinal Data from Clinical Trials: Review. Joint statistical conference on industry, government and school for clinical trials and research, Seoul, November 2019.
- Analysis of longitudinal binary and survival time data using joint models with general random effects covariance matrix. EAC-ISBA, Japan, July 2019
- Bayesian joint models for longitudinal binary and survival data using general random effects covariance matrix. EcoSta 2019. Taiwan, June, 2019.
- Multivariate linear models for multivariate longitudinal data. Statistical Computing Challenges and Opportunities in Data Science, Beijing China, November 2018
- Bayesian modeling of random effects covariance matrix in baseline-logit random effects models. Japanese Joint Statistical Meeting, Tokyo Japan, September 2018
- Modeling of covariance matrix in linear models for multivariate longitudinal data. Korean Data Information Society Spring meeting, Seoul, November 2018.
- Marginalized random effects models with ARMA random effects covariance matrix, Korean Statistical Society Fall meeting, Pusan, May 2018
- Penalized modeling of the covariance matrix for linear models. Korean Data Information Society Spring meeting, Daegu, November 2017.

- Analysis of longitudinal Poisson data with ARMA random effects covariance matrix. Korean Statistical Society Fall meeting, Seoul, November 2017
- ARMA Cholesky factor models for the covariance matrix of linear models. Korean Data Information Society Spring meeting, Daegu, May 2017.
- Analysis of longitudinal binary data using ARMA Cholesky decomposition. 2017 International Statistical Symposium CSA-KSS-JSS special session. Taiwan, December 2017
- Dynamic linear mixed models with general random effects covariance matrix. The First Eastern Asia Meeting on Bayesian Statistics, Shanghai China, December 2016
- Dynamic linear mixed models with ARMA covariance matrix. The 10th ICSA International conference. Shanghai China, December 2016
- Linear mixed models with general conditional covariance matrix. Korean Statistical Society Spring meeting, Daegu, May 2016
- Poisson/negative binomial regression with general random effects covariance matrix. Korean Statistical Society Fall meeting, Daejeon, November 2016
- Analysis of zero-inflated count data using hurdle random effects model. Korean Statistical Society Spring meeting, Seoul, November 2015
- Analysis of long series of longitudinal ordinal data using marginalized models. Korean Statistical Society Spring meeting, Cheongju, May 2015
- Analysis of longitudinal ordinal data with general random effects covariance matrix. CMStatistics 2015, London UK, December 2015.
- Bayesian marginalized models for spatial binary data. Korean Statistical Society Fall meeting, Chungang University, Seoul, November 2014
- Modeling of the generalized linear mixed models with general random effects covariance matrix: using Bayesian approach. Korean Statistical Society Fall meeting, Chungang University, Seoul, November 2014
- Causal inference for bivariate longitudinal quality of life data in presence of death using global odds ratios. Seoul National University, Seoul, September 2013
- Analysis of Longitudinal Categorical Data Using Marginalized Models. Korean Data Information Society Fall meeting, Kyungpook National University, Daegu, November 2012
- Modeling the Random Effects Covariance Matrix for the Generalized Linear Mixed Models. Korean Statistical Society Fall meeting, Konkuk University, Seoul, November 2012
- Modeling the Random Effects Covariance Matrix for the Generalized Linear Mixed Models. Louisiana State University Health Sciences Center, New Orleans, August 2012
- Analysis of longitudinal categorical data with nonignorable dropout using shared parameter models. Remin University, Peking China, June 2012
- Analysis of longitudinal categorical data with nonignorable dropout using shared parameter models. Korean Statistical Society Spring meeting, Kyemyung University, Daegu, June 2012
- Analysis of longitudinal categorical data with nonignorable dropout using shared parameter models. Asan Medical Center, Seoul, April 2012
- Analysis of longitudinal quality of life data using a new multivariate longitudinal ordinal model. Korean Statistical Society Spring meeting, May 2011.
- Analysis of bivariate longitudinal quality of life data. Ewha Womans University. May 2011.
- Analysis of bivariate longitudinal quality of life data. Kyungpook National University. May 2011.

- Analysis of Zero-Inflated Clustered Count Data Using Marginalized Model Approach. Poster presentation. Department of Statistics, Winter Workshop, University of Florida, January 2010.
- Marginalized Random Effects Models for Multivariate Longitudinal Binary Data. University of Arkansas. February 2009.
- Marginalized Regression Models for Longitudinal Count Data, US-Korea Conference, San Diego, CA, August 2008.
- Analysis of Quality of Life Data from Colorectal Cancer Clinical Trials Using Marginalized Regression Models, Stanley S. Scott Cancer Center, LSU-Health Sciences Center, April 2008.
- Marginalized Regression Models for Longitudinal Categorical Data, Georgia State University, Atlanta, April 2007.
- Marginalized Regression Models for Longitudinal Categorical Data, Louisiana State University, New Orleans, March 2007.
- Marginalized Regression Models for Longitudinal Categorical Data, University of Arizona, Tucson, January 2007.
- Marginalized Regression Models for Longitudinal Categorical Data, University of South Carolina, Columbia, December 2006.
- Marginalized Regression Models for Longitudinal Ordinal Data, University of Louisville, Louisville, March 2006.
- Marginalized Regression Models for Longitudinal Ordinal Data, University of Nevada, Las Vegas, March 2006.
- Marginalized Regression Models for Longitudinal Ordinal Data, University of California, Irvine, March 2006.

### **Contributed papers**

- Modeling the ARMA random effects covariance matrix in logistic random effects models. CFE-CMStatistics 2017, December 2017
- Marginalized models for long series of longitudinal ordinal data. Korean Data Information Society Spring meeting, Pusan, May 2015
- Bayesian Cholesky factor models for spatial data. Joint Statistical Meeting, Boston, August 2014.
- Bayesian modeling of random effects covariance matrix for cumulative logit random effects model using modified Cholesky decomposition. Korean Statistical Society Spring meeting, Statistics Korea, Daejeon, May 2014.
- Autoregressive Cholesky factor modeling for marginalized random effects models. Korean Data Information Society Spring meeting, Daegu Haany University, May 2014.
- Causal inference for bivariate longitudinal quality of life data in presence of death using global odds ratios. Korean Statistical Society Fall meeting, Dongguk University, Seoul, November 2013
- Bayesian modeling of random effects covariance matrix for generalized linear mixed models. Korean Data Information Society Spring Conference, Yeungnam University, Gyungsan, May 2013
- Analysis of longitudinal categorical data with nonignorable dropout using shared parameter models. Sungkyunkwan University, Seoul, May 2012.
- Flexible marginalized models for bivariate longitudinal ordinal data with application to causal inference for quality of life data. Biostatistics Seminar, LSU Health Science Center, New Orleans, LA, September 2011.
- Analysis of Bivariate Longitudinal Quality of Life Data. Louisiana Chapter Meeting of the American Statistical Association, Louisiana State University, May 2011

- Causal Effects of Treatments for Informative Missing Data due to Progression/Death. Biostatistics Seminar, LSU-Health Science Center, New Orleans, LA, September 2010.
- Analysis of Zero-Inflated Clustered Count Data Using Marginalized Model Approach. International Biometric Society (ENAR), New Orleans, March 2010.
- Analysis of Multivariate Longitudinal Binary Data using Marginalized Random Effects Models. International Biometric Society (ENAR), San Antonio, TX, March 2009.
- Marginalized Random Effects Models for Multivariate Longitudinal Binary Data. Louisiana Chapter Meeting of the American Statistical Association, University of New Orleans, New Orleans, LA, December 2008.
- Analysis of Longitudinal Metabolic Syndrome Data Using Marginalized Random Effects Models. Biostatistics Seminar, LSU Health Sciences Center, New Orleans, LA, October 2008.
- Marginalized Transition Models for Longitudinal Count Data, Joint Statistical Meeting (JSM), Denver, CO, August 2008.
- Marginalized Models for Longitudinal Count Data, International Biometric Society (ENAR), Washington, DC, March 2008.
- Marginalized Models for Longitudinal Count Data, Biostatistics Seminar, LSU-Health Science Center, March 2008
- Marginalized Regression Models for Longitudinal Count Data, Biostatistics Seminar, LSU-Health Science Center, New Orleans, LA, March 2008.
- Marginalized Random Effects Models for Longitudinal Ordinal Data, International Biometric Society (ENAR), Atlanta, GA, March 2007.
- A Class of Markov Models for Longitudinal Ordinal Data, International Biometric Society (ENAR), Tampa, FL, March 2006.
- Marginalized Transition Models for Longitudinal Categorical Data, Joint Statistical Meeting (JSM), Minneapolis, MN, August 2005.
- Marginalized Transition Models for Longitudinal Polytomous Data, International Biometric Society (ENAR), Austin, TX, March 2005.
- Normalization of Microarray Data using Mixture of Splines, International Biometric Society (ENAR), Pittsburgh, PA, March 2004.
- Normalization of Microarray Data using Mixture of Splines, Student seminar, UF, March 2004.

## GRADUATE STUDENTS SUPERVISED

- Jiyeoung Kim, PhD, August 2018, Sungkyunkwan University  
Thesis title: Bayesian modeling of random effects covariance matrix for longitudinal polytomous data.
- Myungok Lee, PhD, Spring 2012, Louisiana State University Health Sciences Center  
Thesis title: Analysis of longitudinal categorical data with nonignorable dropout using shared random effects models
- Insun Lee, MS June, 2022, Sungkyunkwan University  
Thesis title: KCYPS panel data analysis using Bayesian multivariate linear model
- Minkyong Kim, MS June, 2022, Sungkyunkwan University  
Thesis title: Analysis of household financial welfare survey data using probit models
- Dohyun Koo, MS, December 2021, Sungkyunkwan University  
Thesis title: An in-depth analysis on Korean tax & finance panel data by using multivariate longitudinal linear model

- Yeji Kim, MS, December 2021, Sungkyunkwan University  
Thesis title: Comparison study for Bayesian multivariate linear model
- Anbin Rhee, MS, December 2019, Sungkyunkwan University  
Thesis title: Robust modeling of multivariate longitudinal data using modified Cholesky and hypersphere decomposition
- Jaeyoung Lee, MS, December 2019, Sungkyunkwan University  
Thesis title: Bayesian multivariate linear mixed models for multivariate longitudinal data
- Rebecca Suh, MS June 2019, Sungkyunkwan University  
Thesis title: Analysis of labor panel data using multivariate regression models
- Danbi Yun, MS, December 2019, Sungkyunkwan University  
Thesis title: Comparison of AR and ARMA structure for covariance matrix estimation for multivariate longitudinal data.
- Na Young Kwak, December 2019, Sungkyunkwan University  
Thesis title: Comparison study of modeling covariance matrix for multivariate longitudinal data.
- Jaewoong Joo, MS, December 2018, Sungkyunkwan University  
Thesis title: Joint model of longitudinal binary and survival data with general random effects covariance matrix.
- Minkyung Kang, MS, December 2017, Sungkyunkwan University  
Thesis title: Penalized modeling of the covariance matrix for linear models.
- Dasom Kang, MS, June 2017, Sungkyunkwan University  
Thesis title: ARMA Cholesky decompositions for random effects covariance matrix in marginalized random effects models.
- Youkyung Sung, MS, December 2016, Sungkyunkwan University  
Thesis title: Negative binomial loglinear mixed model with general random effects covariance matrix.
- Jiin Choi, MS, December 2016, Sungkyunkwan University  
Thesis title: Poisson loglinear mixed model with general random effects covariance matrix.
- Eun Jeong Han, MS, June 2016, Sungkyunkwan University  
Thesis title: Dynamic linear mixed models with ARMA covariance matrix.
- Sangah Nam, MS, June 2016, Sungkyunkwan University  
Thesis title: Comparison of the covariance matrix for general linear model.
- Hoimin Jung, MS, June 2016, Sungkyunkwan University  
Thesis title: ARMA Cholesky factor models for generalized linear mixed model.
- Yu-jung Kyoung, MS, June 2015, Sungkyunkwan University  
Thesis title: Bayesian pattern mixture model for longitudinal binary data with nonignorable missingness.
- Iktae Jin, MS, December 2014, Sungkyunkwan University  
Thesis title: Hurdle model for longitudinal zero-inflated count data analysis.
- Seolhwa Kim, MS, December 2014, Sungkyunkwan University  
Thesis title: Comparison of general random effects covariance matrix for marginalized random effects models.
- Bo Ok Kim, MS, December 2014, Sungkyunkwan University  
Thesis title: Marginalized random effects models for longitudinal binary data using moving average Cholesky decomposition.
- Joo Yeong Jeon, MS, June 2014, Sungkyunkwan University  
Thesis title: Review and discussion of marginalized random effects models.
- Kyungdeok Yoo, MS, June 2014, Sungkyunkwan University  
Thesis title: Marginalized random effects models for longitudinal nominal data using partial autocorrelation approach.

- Sunah Sung, MS, December 2013, Sungkyunwan University  
Thesis title: Autoregressive Cholesky facto model for marginalized random effects model.
- Jiyeong Kim, MS, December 2013, Sungkyunwan University  
Thesis title: Bayesian cumulative logit random effects model for longitudinal ordinal data using modified Cholesky decomposition.
- Yan Gao, MPH, December 2010, Louisiana State University Health Sciences Center  
Capstone title: Examining the associations between lifestyle factors and health-related quality of life among prostate cancer survivors.

## HONORS

Travel Award to attend the 2010 University of Florida Winter Workshop	2010
Travel Award to attend the 2009 ENAR Workshop for Junior Researchers	2009
Eastern North American Region (ENAR) Distinguished Student Paper Award	2006
Honorary Society Mu Sigma Rho	2004 — Present
Achievement award, International Center, UF	2001
Best student award, Department of Statistics, Kyungpook National University	1996
Jungsu fellowship association, Scholarship, Seoul, Korea	1993 — 1995
Kyungpook National University, Scholarship, Daegu, Korea	1991 — 1992

## ACTIVITIES

Member of Korean Statistical Society (KSS)	2008 — Present
Member of Korean Data Information Statistical Society (KDISS)	2013 — Present

## SERVICE WORK

- Chair of Department of Statistics, Sungkyunkwan University January 2017-February 2017, January 2020-December 2020
- Associate editor for the Korean Data Information Statistical Society, January 2016-Present
- Board member for the Korean Statistical Society, January 2016-December 2017
- Director of Research Institute of Applied Statistics, Sungkyunkwan University March 2015-February 2017
- Screener for Journal of Korean Statistical Society, July 2012-September 2012, January 2015-February
- Referee: Journal of the American Statistical Association (1), Biometrics (3), Statistics in Medicine (4), Journal of Statistical Planning and Inference (1), Computational Statistics & Data Analysis (1), Biostatistics (1), Communications in Statistics - Simulation and Computation (1), Journal of Statistical Theory and Practice (1), Statistics in Biopharmaceutical Research (1), Journal of Korean Applied Statistics (1), Communications of the Korean Statistical Society (3) Journal of Applied Statistics (2), Journal of the Korean Data Information Society (5) Communications for Statistical Applications and Methods (5) Journal of Statistical Computation and Simulation (1)
- Member of Evaluation Committee, School of Public Health, LSUHSC 2011—2012
- Vice President of Louisiana Chapter of the American Statistical Association 2011—2012
- Biostatistics Seminar organizer, LSU-HSC 2007— 2009
- Representative of Korean Student Association, UF 2002 — 2006

## **COMPUTING SKILLS**

FORTRAN, C, SAS, SPSS, GLIM, Splus, R, WinBugs, Minitab, L<sup>A</sup>T<sub>E</sub>X, MS-Word, UNIX, Linux, and MS-Windows.

## **MILITARY SERVICE**

Served as a private soldier in the Republic of Korea Army

1997 — 1999