

Yoonkyung Lee

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Education

- 2002 Ph.D. in Statistics, University of Wisconsin-Madison
Dissertation: *Multicategory Support Vector Machines, Theory, and Application to the Classification of Microarray Data and Satellite Radiance Data*
Advisor: Grace Wahba, Ph.D. (Co-advisor: Yi Lin, Ph.D.)
- 1996 M.Sc. in Statistics, Seoul National University, Korea
Thesis: *Image Data Analysis by Markov Random Field Models*
Advisor: Jong Woo Jeon, Ph.D.
- 1994 B.Sc. in Computer Science and Statistics, Seoul National University, Korea

Professional Experience

Positions

- | | |
|-------------------|--|
| Jun 2016–present | Professor, Department of Statistics, The Ohio State University
Professor, Department of Computer Science and Engineering,
The Ohio State University (courtesy appointment) |
| July 2020–present | Program Co-Director, Translational Data Analytics Institute |
| Sep–Oct 2019 | Visiting Professor, Department of Mathematical Sciences, KAIST, Korea |
| Feb–Jun 2016 | Associate Professor, Department of Computer Science and Engineering,
The Ohio State University (courtesy appointment) |
| 2008–2016 | Associate Professor, Department of Statistics, The Ohio State University |
| Spring 2011 | Visiting Associate Professor, Department of Statistics,
Seoul National University, Korea |
| 2002–2008 | Assistant Professor, Department of Statistics, The Ohio State University |
| Jan–Mar 2007 | Visiting Fellow, Statistical and Applied Mathematical Sciences Institute,
Research Triangle Park, NC |
| 1999–2002 | Research Assistant, Department of Statistics, UW-Madison
Supervisor: Grace Wahba, Ph.D. |
| Spring 1999 | Teaching Assistant, Department of Statistics, UW-Madison |
| Fall 1998 | Research Assistant, Department of Statistics, UW-Madison
Supervisor: Michael Newton, Ph.D. |
| 1997–1998 | Teaching Assistant, Department of Statistics, UW-Madison |

Teaching

STAT 3202	Introduction to Statistical Inference for Data Analytics
STAT 4201	Introduction to Mathematical Statistics I
STAT 428	Introduction to Probability and Statistics for Engineering and the Sciences
STAT 5301–5302	Intermediate Data Analysis I and II
STAT 621	Statistical Theory II
STAT 6500	Statistical Machine Learning
STAT 6560	Applied Multivariate Analysis
STAT 7620	Elements of Statistical Learning
STAT 7630	Nonparametric Function Estimation
STAT 881	Advanced Statistical Learning
STAT 882	Topics in Variable Selection and Model Selection

Research Supervision

- Doctoral Students

- Zhenhuan Cui (2007), *The Solution Paths of Multicategory Support Vector Machines: Algorithm and Applications*.
- Yonggang Yao (2008), *Statistical Applications of Linear Programming for Feature Selection via Regularization Methods*.
- Youlan Rao (2009), co-advised with Jason Hsu
Statistical Analysis of Microarray Experiments in Pharmacogenomics.
- Yoonsuh Jung (2010), co-advised with Steve MacEachern
Regularization of Case Specific Parameters: A New Approach for Improving Robustness and/or Efficiency of Statistical Methods.
- Cong Liu (2012), co-advised with Tao Shi
Two Tales of Variable Selection for High Dimensional Data: Screening and Model Building.
- Kazuki Uematsu (2012), *Statistical Consistency of Ranking: Bipartite and Multipartite Cases*.
- Rui Wang (2012), *Comparisons of Classification Methods in Efficiency and Robustness*.
- Zhiyu Liang (2014), *Eigen-Analysis of Kernel Operators for Nonlinear Dimension Reduction and Discrimination*.
- John Lewis (2014), co-advised with Steve MacEachern
Bayesian Restricted Likelihood Methods.
- Andrew Landgraf (2015), *Generalized Principal Component Analysis: Dimensionality Reduction through the Projection of Natural Parameters*.
- Jieyi Jiang (2017), co-advised with Steve MacEachern
Realistic Predictive Risk: The Role of Penalty and Covariate Diffusion in Model Selection.
- Liubo Li (2017), co-advised with Vince Vu
Trend-Filtered Projections for Principal Component Analysis.

- Tayler Blake (2018), *Nonparametric Covariance Estimation for Longitudinal Data*.
- Shanshan Tu (2019), co-advised with Yunzhang Zhu
Case Influence and Model Complexity in Regression and Classification.
- Jiae Kim (2020), co-advised with Steve MacEachern
Nonlinear Generalizations of Linear Discriminant Analysis: the Geometry of the Common Variance Space and Kernel Discriminant Analysis
- Jianhao Zhang (2021), *Learning from Binary Matrix and Tensor Data with Sparsity*
- Bo Luan (2022), co-advised with Yunzhang Zhu
Model Complexity in Linear Regression: Extensions for Prediction and Heteroscedasticity
- Ruochen Huang (current)
- Lun Li (current)
- Haozhen Yu (current)

Honors and Awards

2015	Elected Fellow of the American Statistical Association
2008	NSF travel award, The 7th World Congress in Probability and Statistics, Singapore, July 2008
2007	Statistical and Applied Mathematical Sciences Institute Fellowship
2003	NSF travel award, SRCOS/ASA Summer Research Conference, Jekyll Island, Georgia, June 2003
2003	Best student poster award, 12th Conference on Satellite Meteorology and Oceanography, American Meteorological Society Meeting 2003
2002	Student travel grant, IMS Mini-Meeting, University of Florida, January 2002
1996	Master's degree with honors, The Graduate School, Seoul National University
1995	Qualifying Examination passed with distinction, Department of Statistics, Seoul National University
1994	Dean's list upon graduation, College of Natural Sciences, Seoul National University
1991–1994	Seoul National University Alumni Fellowship

Grants

- *Model Evaluation in Modern Predictive Regimes: Case Influence and Model Complexity*, National Science Foundation, Division of Mathematical Sciences, Statistics Program as a principal investigator (2020–2023).
- *Nonlinear Dimension Reduction Methods*, National Science Foundation, Division of Mathematical Sciences, Statistics Program as a sole principal investigator (2015–2019).
- *Robust and Relevant Model Evaluation: Principles and techniques for handling weak prior information and contaminated data*, National Science Foundation, Division of Mathematical Sciences, Statistics Program as a co-principal investigator (2012–2016).

- *Robust and Relevant Model Evaluation*, Nationwide Center for Advanced Customer Insights as a co-principal investigator (2011–2012).
- *Blended Paradigm Inference with Application to Regression*, National Security Agency, Mathematical Sciences Program as a co-principal investigator (2010–2012).
- Conference on *Nonparametric Statistics and Statistical Learning*, National Science Foundation, Division of Mathematical Sciences, Statistics Program as a co-principal investigator (2009–2010).

Invited Talks

- Assessment of Case Influence in Support Vector Machine,
 - CIMAT (Center of Research in Mathematics), Guanajuato, Mexico, November 25, 2020.
 - Department of Mathematics, University of Arizona, November 16, 2020.
 - The 12th International Conference of the ERCIM WG on Computational and Methodological Statistics, University of London, UK, December 14–16, 2019.
 - Department of Mathematical Sciences, KAIST, Daejeon, Korea, September 26, 2019.
- Statistical Learning with Kernels (Part I: Smoothing Splines, Part II: Support Vector Machines, Part III: Kernel Methods), Department of Mathematical Sciences, KAIST, Daejeon, Korea, September 30–October 8, 2019.
- Supervised Dimensionality Reduction for Exponential Family Data,
 - The 11th International Conference of the ERCIM WG on Computational and Methodological Statistics, University of Pisa, Italy, December 14–16, 2018.
 - Joint Statistical Meetings, Vancouver, Canada, July 28–August 2, 2018.
 - The Conference on Statistical Learning and Data Science, Columbia University, New York, June 4–6, 2018.
- Interview with Grace Wahba, The Pfizer Distinguished Statistician Colloquium Series, University of Connecticut, Storrs, CT, September 26–27, 2018.
- Dimensionality Reduction for Exponential Family Data, Computational Strategies for Large-Scale Statistical Data Analysis Workshop, International Centre for Mathematical Sciences, Edinburgh, UK, July 2–6, 2018.
- Cross Validation for Penalized Quantile Regression with a Case-Weight Adjusted Solution Path, The 2nd International Conference on Econometrics and Statistics, City University of Hong Kong, Hong Kong, June 19–21, 2018.
- The Geometry of Nonlinear Embeddings for Kernel Principal Component Analysis and Discriminant Analysis, TGDA@OSU TRIPODS Center Summer School, Mathematical Biosciences Institute, Columbus, OH, May 2018.
- A Characterization of Latent Factors for Binary Data with Application to a Study of the Comorbidity in ICU Patients, The Spring Conference of the Korean Statistical Society, Seoul, Korea, May 2017.

- The Remarkable Effectiveness of Principal Component Analysis,
Korean Engineering Graduate Student Association Meeting, The Ohio State University,
Columbus, OH, November 2016.
- Generalized Principal Component Analysis: Dimensionality Reduction through the Projec-
tion of Natural Parameters,
 - Data Science Research Group, School of Mathematical Sciences, Rochester Institute of
Technology, NY, November 2017.
 - Department of Statistics, Purdue University, West Lafayette, IN, October 2017.
 - ICSA Applied Statistics Symposium, Chicago, IL, June 2017.
 - Department of Statistics, Ewha Womans University, Seoul, Korea, June 2017.
 - The 9th International Conference of the ERCIM WG (European Research Consortium for
Informatics and Mathematics Working Group) on Computational and Methodological Statis-
tics, University of Seville, Spain, December 2016.
 - International Indian Statistical Association Conference, Oregon State University, Corvallis,
OR, August 2016.
 - Department of Statistics and Probability, Michigan State University, East Lansing, MI,
November 2015.
 - Youngnam Mathematical Society Annual Meeting, Busan National University, Busan, Ko-
rea, June 2015.
- A Statistical View of Ranking: Midway between Classification and Regression,
 - Department of Statistics, The Ohio State University, Columbus, OH, September 2016.
 - Department of Computer Science and Engineering, The Ohio State University, Columbus,
OH, December 2015.
- A Modern Look at Classical Multivariate Techniques,
Part I: Regression, Part II: Classification, Part III: Dimensionality Reduction
The 13th School of Probability and Statistics, CIMAT (Center of Research in Mathematics),
Guanajuato, Mexico, March 16–20, 2015.
- Nonparametric Covariance Estimation with Shrinkage Toward Stationary Models,
The Joint Statistical Meetings, Boston, MA, August 2014.
- A Statistical View of Ranking: Midway between Classification and Regression,
Conference on Nonparametric Statistics for Big Data and Celebration to Honor Grace Wahba,
Madison, WI, June 2014.
- Error Bars?: Discussion of “Error Bars in Experimental Biology” by Cumming et al.,
Journal of Cell Biology (2007), Molecular Genetics 7802, Research Seminar: Cell Biology,
Department of Molecular Genetics, The Ohio State University, December 2013.
- A Comparison of Classification Methods for Robustness,
The Joint Statistical Meetings, San Diego, CA, August 2012.
- Two Tales of Variable Selection for High Dimensional Regression: Screening and Model Build-
ing, The second IMS-APRM (Institute of Mathematical Statistics Asia Pacific Rim Meeting),
Tsukuba, Japan, July 2012.

- Statistical Analysis of Bipartite Ranking by Convex Risk Minimization, KSS International Conference on Statistics and Probability, Busan, Korea, July 2011.
- A Study of Relative Efficiency and Robustness of Classification Methods,
 - Department of Statistics, Seoul National University, Korea, April 2011.
 - Department of Applied Statistics, Yonsei University, Seoul, Korea, May 2011.
 - Department of Statistics, University of Seoul, Seoul, Korea, June 2011.
- Support Vector Machines for Classification: A Statistical Portrait,
 - The Spring Conference of Korean Statistical Society, KAIST, Daejeon, Korea, May 2011.
 - Ulsan National Institute of Science and Technology, Ulsan, Korea, June 2011.
 - Department of Statistics, Duksung Women’s University, Seoul, Korea, June 2011.
 - Department of Informational Statistics, Hoseo University, Asan, Korea, June 2011.
- Statistical Analysis of Bipartite and Multipartite Ranking by Convex Risk Minimization, Summer School on Statistical Pattern Recognition, CIMAT (Center of Research in Mathematics), Guanajuato, Mexico, August 2010.
- Does Modeling Lead to More Accurate Classification?
 - Summer School on Statistical Pattern Recognition, CIMAT (Center of Research in Mathematics), Guanajuato, Mexico, August 2010.
 - ICSA Applied Statistics Symposium, Indianapolis, IN, June 2010.
- Comparison of the Efficiency of Classification Methods,
 - Department of Statistics, Indiana University, Bloomington, IN, March 2010.
 - Department of Food and Resource Economics, University of Delaware, Newark, DE, March 2010.
- Functional Component Pursuit,
 - ICSA Applied Statistics Symposium, San Francisco, CA, June 2009.
 - The first Institute of Mathematical Statistics - Asia Pacific Rim Meeting, Seoul, Korea, July 2009.
 - Department of Statistics, University of Seoul, Korea, July 2009.
- A Bahadur Type Representation of the Linear Support Vector Machine and its Relative Efficiency, Machine Learning Summer School (Theory and Practice of Computational Learning), University of Chicago, IL, June 2009.
- A Tutorial on Kernel Methods in a Regularization Framework, Fall Conference of Korean Statistical Society, Chung-Ang University, Seoul, Korea, October 2008.
- Linear Programming for Feature Selection via Methods of Regularization,
 - Department of Mathematical Information Science, Tokyo University of Science, Tokyo, Japan, July 2008.
 - Statistical Research Center for Complex Systems, Seoul National University, Seoul, Korea, July 2008.
 - International Conference on Machine Learning and Data Mining, Beijing, China, June 2008.

- A Regularization Approach to Screening and Selection of Biomarkers,
 - Department of Biostatistics and Bioinformatics, Emory University, Atlanta, GA, December 2008.
 - ENAR, Arlington, VA, March 2008.
 - Division of Biostatistics, Washington University in St. Louis, MO, November 2007.
- Another Look at Linear Programming for Feature Selection via Methods of Regularization,
 - Statistics-Econometrics Seminar, Columbia University, New York City, NY, November 2007.
 - Department of Statistics, Carnegie Mellon University, Pittsburgh, PA, September 2007.
 - Department of Statistics, Korea University, Seoul, Korea, August 2007.
- Kernel Methods in a Regularization Framework for Nonparametric Model Building, The Fall Workshop of ASA Cleveland Chapter, Cleveland, OH, October 2007.
- A Bahadur Representation of the Linear Support Vector Machine,
 - Department of Mathematics, Washington University in St. Louis, MO, November 2007.
 - Department of Statistics, University of Georgia, Athens, GA, March 2007.
- A Short Course on Kernel Methods in a Regularization Framework, Winter School, CIMAT, Guanajuato, Mexico, January 2007.
- A Tutorial on Support Vector Machines,
 - Quantitative Psychology Area Brownbag Series, Department of Psychology, The Ohio State University, October 2006.
 - North America Korean Statistical Association, The Joint Statistical Meetings, Seattle, WA, August 2006.
- The Solution Path of Multicategory Support Vector Machines, Joint Summer Research Conferences: Machine Learning, Statistics, and Discovery, Snowbird, UT, June 2006.
- Structured Statistical Learning with Support Vector Machine for Feature Selection and Prediction,
 - The Joint Statistical Meetings, Minneapolis, MN, August 2005.
 - WNAR, Fairbanks, AK, June 2005.
 - Graybill Conference, Fort Collins, CO, June 2005.
- A Sparse Solution Approach to Gene Selection for Cancer Diagnosis Using Microarray Data, CCF/OSU/CWRU Joint Biostatistics Symposium, Cleveland Clinic Foundation, May 2005.
- Multicategory Support Vector Machines: a Population View of Different Approaches, The Joint Statistical Meetings, San Francisco, CA, August 2003.
- Discussion of the Wald lecture III (Grace Wahba): Nonstandard Multicategory Support Vector Machine, The Joint Statistical Meetings, San Francisco, CA, August 2003.
- Multicategory Support Vector Machines: Theory and its Applications.
 - Statistical Research Center for Complex Systems, Seoul National University, Korea, August 2003.
 - Department of Statistics, University of Tennessee, Knoxville TN, April 2003.

- Classification of Multiple Cancer Types by Multicategory Support Vector Machines Using Gene Expression Profiles.
 - Summer Research Conference in Statistics, *Statistics in Genetics, Molecular Biology and Bioinformatics*, Jekyll Island, GA, June 2003.
 - Division of Pediatric Informatics, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH, December 2002.
- Multicategory Support Vector Machines.
 - Department of Biostatistics, University of Michigan, January 2002.
 - Department of Statistics, The Ohio State University, January 2002.
 - Department of Statistics, University of Illinois, Urbana-Champaign, February 2002.
 - Department of Statistics, Texas A & M, February 2002.
 - Department of Statistics, University of California, Davis, February 2002.
 - Department of Statistics, University of Florida, Gainesville, February 2002.

Contributed Talks

- Supervised Dimensionality Reduction for Exponential Family Data, *Women in Statistics and Data Science Conference*, Cincinnati, OH, October 2018.
- Generalized Principal Component Analysis: Dimensionality Reduction through the Projection of Natural Parameters, *The 4th IMS Asia Pacific Rim Meeting*, The Chinese University of Hong Kong, Hong Kong, June 2016.
- Statistical Consistency of Multipartite Ranking, *The Joint Statistical Meetings*, Montreal, Canada, August 2013.
- Statistical Analysis of Bipartite and Multipartite Ranking by Convex Risk Minimization (poster), *Statistical Science - Making A Difference*, 50th Anniversary Conference of the Department of Statistics, Madison, WI, June 2010.
- Comparison of the Efficiency of Classification Methods, Data Mining and Statistical Learning study group, Department of Statistics, The Ohio State University, April 2010.
- A Bahadur Representation of the Linear Support Vector Machine,
 - *The 7th World Congress in Probability and Statistics*, Singapore, July 2008.
 - Data Mining and Statistical Learning study group, Department of Statistics, The Ohio State University, October 2008.
- Regularization Approach to Screening and Selection of Biomarkers, *The First International Symposium on Biopharmaceutical Statistics*, Shanghai, China, July 2008.
- Quarterly presentations at Data Mining and Statistical Learning study group, Department of Statistics, The Ohio State University, 2007.
- Structured Multicategory Support Vector Machine with ANOVA decomposition,
 - *New Researchers Conference*, York University, Toronto, Canada, August 2004.
 - *The Joint Statistical Meetings*, Toronto Canada, August 2004.

- Quarterly presentations at Statistical Genetics Journal Club, Department of Statistics, The Ohio State University, 2003–2004.
- Classification of Satellite Radiance Data by Multicategory Support Vector Machines (poster), *Third Conference on Artificial Intelligence Applications to the Environmental Science*, Long Beach, CA, February 2003. Won the best student poster award.
- Multicategory Support Vector Machines, Department of Statistics, UW-Madison, April 2002.
- Classification of Multiple Cancer Types by Multicategory Support Vector Machines Using Gene Expression Data, *ENAR 2002*, Crystal City VA, March 2002.
- Multicategory Support Vector Machines with Application to Cancer Classification Using Gene Expression Data (poster), *IMS Mini-Meeting on Imaging, Classification and Clustering*, University of Florida, Gainesville FL, January 2002.
- Multicategory Support Vector Machines, *the 33rd Symposium on the Interface*, Costa Mesa CA, June 2001.

Publications

The following papers are available via my website <http://www.stat.osu.edu/~yklee>.

- Lewis, J. R., MacEachern, S. N., and Lee, Y., Bayesian Restricted Likelihood Methods: Conditioning on Insufficient Statistics in Bayesian Regression (with Discussion). *Bayesian Analysis*, **16**, 1393–1462, 2021.
- Landgraf, A. J. and Lee, Y., Dimensionality Reduction for Binary Data through the Projection of Natural Parameters. *Journal of Multivariate Analysis*, **180**, 104668, 2020.
- Blake, T. A. and Lee, Y., Nonparametric Covariance Estimation with Shrinkage toward Stationary Models. *WIREs Computational Statistics*, **12**, No. 6, e1507, 2020.
- Landgraf, A. J. and Lee, Y., Generalized Principal Component Analysis: Projection of Saturated Model Parameters. *Technometrics*, **62**, Issue 4, 459–472, 2020. <https://doi.org/10.1080/00401706.2019.1668854>
- Uematsu, K., and Lee, Y., On Theoretically Optimal Ranking Functions in Bipartite Ranking. *Journal of the American Statistical Association*, **112**, No. 519, 1311–1322, 2017.
- Uematsu, K., and Lee, Y., Statistical Optimality in Multipartite Ranking and Ordinal Regression. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **37**, No. 5, 1080–1094, 2015.
- Jung, Y., Lee, Y., and MacEachern, S. N., Efficient Quantile Regression for Heteroscedastic Models. *Journal of Statistical Computation and Simulation*, **85**, Issue 13, 2548–2568, 2015.
- Lee, Y. and Wang, R., Does Modeling Lead to More Accurate Classification?: A Study of Relative Efficiency in Linear Classification. *Journal of Multivariate Analysis*, **133**, 232–250, 2015.

- Lee, Y., Comments on Support Vector Machines Maximizing Geometric Margins for Multi-classification. *TOP* (an official journal of the Spanish Society of Statistics and Operations Research), **22**, Issue 3, 852–855, 2014.
- Liu, C., Shi, T., and Lee, Y., Two Tales of Variable Selection for High Dimensional Regression: Screening and Model Building. *Statistical Analysis and Data Mining*, **7**, 140–159, 2014.
- Yao, Y., and Lee, Y., Another Look at Linear Programming for Feature Selection via Methods of Regularization. *Statistics and Computing*, **24**, Issue 5, 885–905, 2014.
- Liang, Z. and Lee, Y., Eigen-Analysis of Nonlinear PCA with Polynomial Kernels. *Statistical Analysis and Data Mining*, **6**, 529–544, 2013.
- Lewis, J. R., MacEachern, S. N. and Lee, Y., Robust Inference via the Blended Paradigm. In the *Proceedings of the Joint Statistical Meetings*, 1773–1786, 2012.
- Lee, Y., MacEachern, S. N., and Jung, Y., Regularization of Case-Specific Parameters for Robustness and Efficiency. *Statistical Science*, **27**, 350–372, 2012.
- Lee, Y., Support Vector Machines for Classification: A Statistical Portrait. In *Statistical Methods in Molecular Biology*, Heejung Bang, Xi Kathy Zhou, Heather L. Van Epps, and Madhu Mazumdar, eds, in the series of Methods in Molecular Biology, Humana Press, 347–368, 2010.
- Hsu, J., Rao, Y., Lee, Y., Chang, J., Bergsteinsdottir, K., Magnusson, M.K., Wang, T., Steingrimsson, E., Design and Analysis of Microarray Experiments for Pharmacogenomics. In *Multiple Testing Problems in Pharmaceutical Statistics*, Dmitrienko, A., Tamhane, A.C., Bretz, F., eds., Chapman & Hall/CRC Biostatistics Series, 239–264, 2009.
- Koo, J.-Y., Lee, Y., Kim, Y., and Park, C., A Bahadur Representation of the Linear Support Vector Machine. *Journal of Machine Learning Research*, **9**, 1343–1368, 2008.
- Rao, Y., Lee, Y., Jarjoura, D., Ruppert, A. S., Liu, C., Hsu, J. C., and Hagan, J. P., A Comparison of Normalization Techniques for MicroRNA Microarray Data. *Statistical Applications in Genetics and Molecular Biology*, **7**, Issue 1, Article 22, 2008.
- Lee, Y., Kim, Y., Lee, S., and Koo, J.-Y., Structured Multicategory Support Vector Machine with ANOVA decomposition. *Biometrika*, **93**, 555–571, 2006.
- Lee, Y., (Book Review) Semiparametric Regression by David Ruppert, M. P. Wand, and R. J. Carroll. *Journal of the American Statistical Association*, **101**, 1722–1723, 2006.
- Lee, Y. and Cui, Z., Characterizing the Solution Path of Multicategory Support Vector Machines. *Statistica Sinica*, **16**, 391–409, 2006.
- Lee, Y., Lin, Y., and Wahba, G., Multicategory Support Vector Machines, Theory, and Application to the Classification of Microarray Data and Satellite Radiance Data. *Journal of the American Statistical Association*, **99**, 67–81, 2004.

- Lee, Y., Wahba, G., and Ackerman, S., Classification of Satellite Radiance Data by Multicategory Support Vector Machines. *Journal of Atmospheric and Oceanic Technology*, **21**(2), 159–169, 2004.
- Lee, Y. and Lee, C.-K., Classification of Multiple Cancer Types by Multicategory Support Vector Machines Using Gene Expression Data. *Bioinformatics*, **19**, 1132–1139, 2003.
- Lee, Y., Multicategory Support Vector Machines, Theory, and Application to the Classification of Microarray Data and Satellite Radiance Data. Ph.D. thesis, Department of Statistics, University of Wisconsin-Madison, 2002.
- Wahba, G., Lin, Y., Lee, Y., and Zhang, H., Optimal Properties and Adaptive Tuning of Standard and Nonstandard Support Vector Machines. In *Nonlinear Estimation and Classification*, Denison, D. D., Hansen, M. H., Holmes, C. C., Mallick, B., and Yu, B., eds, Springer, New York, 129–147, 2003.
- Lin, Y., Wahba, G., Zhang, H., and Lee, Y., Statistical Properties and Adaptive Tuning of Support Vector Machines. *Machine Learning*, **48**, 115–136, 2002.
- Lin, Y., Lee, Y., and Wahba, G., Support Vector Machines for classification in nonstandard situations. *Machine Learning*, **46**, 191–202, 2002.
- Lee, Y., Lin, Y. and Wahba, G., Multicategory Support Vector Machines. *Computing Science and Statistics 33*, 498–512, 2001.

Unpublished Manuscripts

- Luan, B., Lee, Y., and Zhu, Y., On Measuring Model Complexity in Heteroscedastic Linear Regression. April 2022. arXiv:2204.07021.
- Luan, B., Lee, Y., and Zhu, Y., Predictive Model Degrees of Freedom in Linear Regression. June 2021. arXiv:2106.15682.
- Zhang, J. and Lee, Y., Sparse Logistic Tensor Decomposition for Binary Data. June 2021. arXiv:2106.14258.
- Kim, J., Lee, Y., and Liang, Z., The Geometry of Nonlinear Embeddings in Kernel Discriminant Analysis. May 2020. arXiv:2005.05546.
- Tu, S., Zhu, Y., and Lee, Y., Cross Validation for Penalized Quantile Regression with a Case-Weight Adjusted Solution Path. Technical Report No. 893, Department of Statistics, The Ohio State University, February 2019. arXiv:1902.07770.
- Jung, Y., MacEachern, S. N., and Lee, Y., Window Width Selection for L_2 Adjusted Quantile Regression. Technical Report No. 835, Department of Statistics, The Ohio State University, April 2010.

- Rao, Y., Lee, Y., and Hsu, J. C., Determination of Sample Size for Validation Study in Pharmacogenomics. Technical Report No. 834, Department of Statistics, The Ohio State University, January 2010.

Professional Membership and Service

- Member of the American Statistical Association
- Member of the Institute of Mathematical Statistics
- Member of the Korean International Statistical Society
- Editorial Board Reviewer of *Journal of Machine Learning Research* since July 2020
- Associate Editor of *Econometrics and Statistics* since May 2019
- Associate Editor of *Chemometrics and Intelligent Laboratory Systems* since October 2018
- Associate Editor of *Journal of the Korean Statistical Society* since January 2017
- Associate Editor of *Statistical Analysis and Data Mining* since June 2011
- Panelist of Statistics Program, Division of Mathematical Sciences, National Science Foundation, 2020
- Reviewer for Neural Information Processing Systems (NeurIPS) Conference 2020
- Organizer of Invited Session on Multiple Facets of Dimension Reduction for The 4th International Conference on Econometrics and Statistics, Hong Kong, June 2021 (virtual)
- Organizer of Invited Session on Recent Advances in Statistical Learning for The 3rd International Conference on Econometrics and Statistics, Taiwan, June 2019
- Panelist of Statistics Program, Division of Mathematical Sciences, National Science Foundation, 2018
- Organizer of Invited Session on Statistical Computing and Optimization for The 2nd International Conference on Econometrics and Statistics, Hong Kong, June 2018
- Program Chair of the Korean International Statistical Society, 2015–2016
- Organizer of KISS Invited Session on Dimensionality Reduction for International Indian Statistical Association Conference, Corvallis, OR, 2016
- Member of the Student Paper Award Committee of ASA Nonparametric Statistics Section for the Joint Statistical Meetings 2014
- Member of Program Committee for The Joint Applied Statistics Symposium, Portland, Oregon, June 15–18, 2014

- Panelist of Statistics Program, Division of Mathematical Sciences, National Science Foundation, 2013
- General Methodology Co-Chair, Program Committee for the Joint Statistical Meetings, San Diego, CA, 2012
- Member of Senior Program Committee for the Fourth Asian Conference on Machine Learning (ACML), Singapore, November 2012
- Member of Program Committee for Conference on Statistical Learning and Data Mining, Ann Arbor, MI, June 5–7, 2012
- Member of Senior Program Committee for the Third Asian Conference on Machine Learning (ACML), Taoyuan, Taiwan, November 2011
- Member of Program Committee for the First International Conference on Pattern Recognition Applications and Methods, Vilamoura, Portugal, February 2012
- Member of Organizing Committee for the Korean Statistical Society International Conference on Statistics and Probability, Busan, Korea, July 2011
- Member of Screening Committee for the Journal of Korean Statistical Society, April–June 2011
- Guest Editor for Special Issue on *Nonparametrics and Statistical Learning* of the ASA Journal *Statistical Analysis and Data Mining*, 2010–2011
- Reviewer of Papers Submitted to Neural Information Processing Systems Conference 2010
- Member of Local Program Committee for Conference on Nonparametric Statistics and Statistical Learning, Columbus, Ohio State University, May 2010
- Member of Program Committee for Artificial Intelligence and Statistics 2010, Sardinia, Italy
- Reviewer of a paper submitted to Conference on Learning Theory (COLT) 2009
- Member of Program Committee for the 12th International Conference on Applied Stochastic Models and Data Analysis 2007
- Member of Program Committee for Artificial Intelligence and Statistics 2007
- Organizer of IMS Invited Session on Semi-Supervised Learning for Joint Statistical Meetings 2006
- Reviewer of a proposal to The Ohio Supercomputer Center, November 2005
- Reviewer of papers submitted to Neural Information Processing Systems Conference 2003
- Reviewer of a proposal to US-Israel Binational Science Foundation (2003)

- Reviewer of papers for the following journals:
 - Artificial Intelligence* (3)
 - The American Statistician* (1)
 - The Annals of Applied Statistics* (2)
 - The Annals of Statistics* (2)
 - Annals of the Institute of Statistical Mathematics* (1)
 - Bernoulli* (1)
 - BMC Bioinformatics* (2)
 - Bioinformatics* (7)
 - Biometrics* (7)
 - Biometrika* (1)
 - Chemometrics and Intelligent Laboratory Systems* (9)
 - Computational Statistics and Data Analysis* (4)
 - Contemporary Mathematics (AMS)* (1)
 - Data Mining and Knowledge Discovery* (1)
 - Econometrics and Statistics* (1)
 - Electronic Journal of Statistics* (1)
 - European Journal of Operational Research* (1)
 - IEEE Transactions on Information Theory* (1)
 - IEEE Transactions on Neural Networks* (2)
 - IEEE Transactions on Neural Networks and Learning Systems* (1)
 - International Statistical Review* (1)
 - Journal of the American Statistical Association* (10)
 - Journal of Artificial Intelligence Research* (1)
 - Journal of Computational and Graphical Statistics* (4)
 - Journal of Machine Learning Research* (15)
 - Journal of Nonparametric Statistics* (1)
 - Journal of Statistical Planning and Inference* (1)
 - Probability Theory and Related Fields* (1)
 - SIAM Journal on Optimization* (1)
 - Soft Computing* (1)
 - Statistica Sinica* (3)
 - Statistical Analysis and Data Mining* (3)
 - Statistics and Computing* (1)
 - Technometrics* (1)

Committees

- Ph.D. Candidacy Exam Committee

February 2022	Xinyun Jiang (City and Regional Planning, Advisor: Yasuyuki Motoyama)
December 2021	Qiuyu Gu (Statistics, Advisor: Yunzhang Zhu)
November 2021	Daryl Swartzentruber (Statistics, Advisor: Elly Kaizar)
December 2020	Prateek Sasan (Statistics, Advisor: Vince Vu)
August 2020	Bo Luan (Statistics, Co-Advisor: Yunzhang Zhu)

April 2020 Zhaojun Li (Psychology, Advisor: Paul De Boeck)
 August 2019 Jianhao Zhang (Statistics)
 July 2019 Dewei Zhang (Integrated Systems Engineering, Advisor: Sam Davanloo)
 June 2019 Jiae Kim (Statistics, Co-Advisor: Steve MacEachern)
 May 2019 Shuyi Wang (Statistics, Advisors: Lo-Bin Chang and Dongbin Xiu)
 February 2019 Min Ho Cho (Statistics, Advisors: Sebastian Kurtek and Steve MacEachern)
 August 2018 Mahan Mansouri (Integrated Systems Engineering)
 May 2018 Shanshan Tu (Statistics)
 May 2018 Shuhan Tang (Statistics)
 March 2018 Xiaoyi Chen (Statistics)
 March 2018 Joonsuk Park (Psychology)
 February 2017 Justin Strait (Statistics)
 November 2016 Jangho Park (Integrated Systems Engineering)
 August 2016 Qian Qian (Statistics)
 August 2016 Liubo Li (Statistics)
 May 2016 Huseyin Bahtiyar (Industrial and Systems Engineering)
 April 2016 Jieyi Jiang (Statistics)
 April 2016 Andrew Bean (Statistics)
 July 2015 Zhifei Yan (Statistics)
 April 2015 Rong Lu (Biostatistics)
 December 2014 Jiaqi Zaetz (Statistics)
 September 2014 Fabian Benitez-Quiroz (Electrical and Computer Engineering)
 April 2014 Ran Wei (Statistics)
 April 2014 Andrew Landgraf (Statistics)
 November 2013 John Lewis (Statistics)
 July 2013 Sungmin Kim (Statistics)
 January 2013 Tayler Blake (Statistics)
 December 2012 Zhiyu Liang (Statistics)
 December 2012 Siyoen Kil (Statistics)
 November 2012 Alice Hinton (Biostatistics)
 July 2012 Jiangyong (Matt) Yin (Statistics)
 July 2012 Jonathan Bradley (Statistics)
 May 2012 Harsha Gangammanavar (Integrated Systems Engineering)
 September 2011 Rui Wang (Statistics)
 August 2011 Dunke Zhou (Statistics)
 February 2011 Cong Liu (Statistics)
 December 2010 Kazuki Uematsu (Statistics)
 November 2010 Di You (Electrical and Computer Engineering)
 June 2010 Seoungbum Kim (Civil Engineering)*
 March 2010 Tao Xiao (Biostatistics)
 December 2009 John Draper (Statistics)
 December 2009 Prasenjit Kapat (Statistics)
 August 2009 Yoonsuh Jung (Statistics)
 March 2009 Jared Schuetter (Statistics)
 August 2008 Yi Liu (Statistics)

February 2008 Onur C. Hamsici (Electrical and Computer Engineering)
 June 2007 Youlan Rao (Statistics)
 August 2006 Kaushik Sinha (Computer Science and Engineering)
 August 2006 Dianne Bautista (Statistics)
 May 2006 Lili Yu (Statistics)
 March 2006 Zhenhuan Cui (Statistics)
 March 2006 Yanxing Zhao (Statistics)
 December 2005 Brandon Moore (Electrical and Computer Engineering)*
 September 2005 Qingzhao Yu (Statistics)
 May 2005 Bin Li (Statistics)
 August 2004 Haiyan Xu (Statistics)
 December 2003 Charalampos Papachristou (Statistics)
 June 2003 Changyi Park (Statistics)
 May 2003 Yufeng Liu (Statistics)
 March 2003 Sijin Liu (Statistics)

* as a Graduate School Representative

● Ph.D. Dissertation Committee

December 2021 Bo Luan (Statistics, Co-Advisor: Yunzhang Zhu)
 May 2021 Jianhao Zhang (Statistics)
 April 2021 Shuyi Wang (Statistics, Advisors: Lo-Bin Chang and Dongbin Xiu)
 November 2020 Jiae Kim (Statistics, Co-Advisor: Steve MacEachern)
 July 2020 Min Ho Cho (Statistics, Advisors: Sebastian Kurtek and Steve MacEachern)
 April 2020 Shuhan Tang (Statistics, Advisors: Peter Craigmile and Yunzhang Zhu)
 August 2019 Qian Qian (Statistics, Advisors: Vince Vu and Yunzhang Zhu)
 August 2019 Meraj Ahmed Khan (Computer Science and Engineering)*
 July 2019 Shanshan Tu (Statistics, Co-Advisor: Yunzhang Zhu)
 April 2018 Tayler Blake (Statistics)
 August 2017 Liubo Li (Statistics)
 August 2017 Jieyi Jiang (Statistics)
 August 2017 Zhifei Yan (Statistics)
 July 2017 Andrew Bean (Statistics)
 July 2017 Tuo Liu (Economics)*
 April 2016 Qichao Que (Computer Science and Engineering)
 August 2015 Jiaqi Zaetz (Statistics)
 July 2015 Yang Zhang (Computer Science and Engineering)*
 May 2015 Andrew Landgraf (Statistics)
 July 2014 John Lewis (Statistics)
 April 2014 Sungmin Kim (Statistics)
 January 2014 Alice Hinton (Biostatistics)
 December 2013 Zhiyu Liang (Statistics)
 August 2013 Yanfei Zhu (History of Art)*
 August 2012 Kazuki Uematsu (Statistics)
 August 2012 Rui Wang (Statistics)

May 2012 Dunke Zhou (Statistics)
 May 2012 Harrison Smith (Electrical and Computer Engineering)*
 April 2012 Cong Liu (Statistics)
 February 2012 John Draper (Statistics)
 November 2011 Di You (Electrical and Computer Engineering)
 February 2011 Kevin Driver (Physics)*
 May 2010 Yoonsuh Jung (Statistics)
 March 2010 Jared Schuetter (Statistics)
 June 2009 Youlan Rao (Statistics)
 August 2008 Yonggang Yao (Statistics)
 August 2008 Sivaramakrishnan Narayanan (Biomedical Informatics)*
 August 2008 Onur C. Hamsici (Electrical and Computer Engineering)
 August 2007 Zhenhuan Cui (Statistics)
 May 2007 Bae-Geun Kim (Economics)*
 August 2006 Bin Li (Statistics)
 May 2006 Sijin Liu (Statistics)
 September 2005 Haiyan Xu (Statistics)
 August 2005 Changyi Park (Statistics)
 May 2005 Tao Wang (Statistics)
 April 2004 Yufeng Liu (Statistics)

- Master Thesis Committee

April 2020 Xiaoyu Liang (Geography, Advisor: Desheng Liu)

- Undergraduate Thesis Committee

May 2018 Mingfeng Li (Civil, Environmental, and Geodetic Engineering, Advisor: Andre Carrel)

- Exam Committee

Ph.D. Qualifying Exam II Committee

September 2006, March 2007, September 2007
 March 2008, September 2008 (Chair), March 2009
 September 2009, March 2010, September 2010
 September 2011 (Chair), March 2012
 August 2013 (Chair), and January 2014

Ph.D. Qualifying Exam I Committee

October 2005, January 2006, August 2012, and
 January 2013

Master of Applied Statistics Exam Committee

May 2003, May 2004, and November 2004
 January 2015, May 2015, January 2016
 May 2016 (Chair), January 2017, January 2018
 May 2018, January 2019, May 2019 (Chair)
 January 2021, May 2021, January 2022 (Chair)

- Departmental Committee

2020–2022 Executive Advisory Committee

2021–2022 Search Committee (Chair)
 2021–2022 External Review Committee (Chair)
 2020–2021 Curriculum Committee (Undergraduate Majors)
 2015–2019 Curriculum Committee (Chair)
 Fall 2018 Chair Reappointment Review Committee
 2017–2019 Executive Advisory Committee
 2015–2017 Search Committee
 2013–2014 Executive Advisory Committee, Curriculum Committee, Search Committee
 2012 Colloquium Committee, Curriculum Committee, Search Committee
 2011 Search Committee, Admissions Committee
 2010 Semester Conversion of Undergraduate Minor in Statistics Program
 Spring 2009 Seminar Committee
 2008–2010 Admissions Committee
 2006–2007 Curriculum Committee
 2002–2006 Computer Advisory Committee
 Fall 2003 Search Committee (Statistical Genetics)

- College or University Service

 July 2020–present Co-Lead, Foundations and AI Community of Practice, TDAI
 Fall 2014–2017 Statistics Liaison with College of Engineering Core Curriculum and
 College Services Committee
 April–August 2014 Data Analytics Collaborative Advisory Committee

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