Woncheol Jang

CONTACT INFORMATION		
Room 323, Building 25		*Voice:* +82-2-880-8164
Department of Statistics		*Fax:* +82-2-883-6144
Seoul National University		*E-mail:* wcjang@snu.ac.kr
Seoul, 08826 Republic of Korea		*WWW:* http://wcjang.github.io

RESEARCH INTERESTS

Bioinformatics; Density Estimation; Differential Privacy, Functional Data Analysis; Multiple Testing; Spatial Statistics; Variable Selection; Applications in Astronomy and Neuroscience.

EDUCATION

Carnegie Mellon University, Pittsburgh, PA, USA

Ph.D., Statistics, 2003, Advisor: Larry Wasserman
Dissertation : "Nonparametric Density Estimation and Clustering with Application to Cosmology"

Texas A&M University, College Station, TX, USA

M.S., Statistics, 1998, Advisor: Naisyin Wang

Seoul National University, Seoul, Korea

M.S., Statistics, 1993, Advisor: Woo-Chul Kim
B.S., Computer Science and Statistics, 1991

WORKING EXPERIENCE

Department of Statistics, Seoul National University

Chair	**2020 - present**
Professor	**2017 - present**
Associate Professor	**2012 - 2017**

Institute for Research in Finance and Economics, Seoul National University

Affiliated Member	**2021 - present**

A. I. Institute, Seoul National University

Affiliated Member	**2020 - present**

Future Innovation Institite, Seoul National University

Associate Director	**2020 - 2021**

Office of Siheung Campus, Seoul National University

Director of Strategic Planning	**2020 - 2021**
Project Leader of Operative Planning	**2019 - 2020**

College of Natural Science, Seoul National University

Associate Dean of Planning	**2016 - 2018**

College of Public Health, University of Georgia

Assistant Professor of Biostatistics	**2006 - 2012**

Statistical and Applied Mathematical Sciences Institute (SAMSI)

New Research Fellow	**Feb. 2006 - Aug. 2006**

Institute of Statistics and Decision Sciences, Duke University

Visiting Assistant Professor   **2004 - 2006**

Department of Statistics, Carnegie Mellon University

Postdoctoral Research Associate   **2003 - 2004**
 Teaching Assistant/Research Assistant   **1998 - 2003**

Department of Statistics, Texas A&M University

Teaching Assistant/Research Assistant   **1996 - 1998**

Department of Computer Science and Statistics, Korea Air Force Academy

Lecturer   **1993 - 1996**

TEACHING EXPERIENCE

❑ Seoul National University
- 033.019 Introduction to Statistics (Spring 18, Spring 20, Spring 21)
- 053.001 Freshman Seminar (Fall 14, Fall 18, Spring 19)
- 326.311 Mathematical Statistics I (Spring 13, Spring 14, Spring 15, Spring 17)
- 326.411 Bayesian Statistics and Lab (Spring 14, Fall 16, Fall 17)
- 326.421 Data Mining Methods and Lab (Fall 13)
- 326.521 Advanced Statistical Methods (Fall 12, Fall 13, Fall 14, Fall 18)
- 326.631 Topics in Applied Statistics: Statistical Network Analysis (Spring 15)
- 326.637 Advanced Methods in Data Mining (Spring 19)
- M1426.000900 Advanced Data Analysis for Brain and Cognitive Sciences (Fall 20)

❑ University of Georgia
- BIOS 7010 Introductory Biostatistics I (Spring 07, Spring 08, Spring 09)
- BIOS 7020 Introductory Biostatistics II (Fall 09, Spring 10, Fall 10, Spring 11, Fall 11, Spring 12)
- BIOS 7100 Biostatistical Applications for Pharmaceutical and Biotechnology Industries (Summer 10)
- BIOS 8110 Categorical Data Analysis (Fall 07, Fall 08, Fall 09, Fall 10, Fall 11)
- BIOS 8140 Multilevel and Hierarchical Models (Spring 11)

❑ Duke University
- STA 101 Data Analysis and Statistical Inference (Fall 04, Fall 05)
- STA 293 Modern Nonparametric Methods (Spring 05)
- STA 293 Statistical Learning: Nonparametric and Regularization Approaches (Spring 06)
- STA 345 Multivariate Statistical Analysis (Spring 06)
- STA 395 Reading in Statistical Science (Fall 04)

STUDENTS ADVISORY

❑ Seoul National University
- Woojin Kim, M.S. 2012 to 2014 (Currently at Bistel)
- Jia Kim, M.S. 2013 to 2015 (Currently at LG CNS)
- Kiyoun Kim, M.S. 2013 to 2015 (Currently at Korea Investment Corporation)
- Junsik Kim, M.S. 2014 to 2016. (Currently Ph.D student in Statistics department at SNU)
- Minjung Lee, M.S. 2014 to 2016 (Currently at NAVER)
- Hyunsoo Lee, M.S. 2014 to 2016 (Currently at Samsung)
- Chanmoo Park, M.S. 2015 to 2017 (Currently at Samsung)
- Seowon Choi, M.S. 2015 to 2017 (Currently Ph.D student in Statistics department at SNU)
- Seunghyun Kwon, M.S. 2016 to 2018 (Currently at KT)
- Seonghun Cho, M.S. 2016 to 2018 (Currently Ph.D student in Statistics department at SNU)
- Hyoshin Kim M.S. 2017 to 2019 (Currently Ph.D. student in Statistics department at NC State Univ.)
- Jaecheol Choi M.S. 2017 to 2019 (Currently at NICE Information Service)
- Seong Hong Kim M.S. 2018 to 2020 (Currently Ph.D student in Statistics department at SNU)

- Nayeon Lee M.S. 2019 to present
- YongChan Kwon M.S. 2019 to present
- Sung Hyun Lim M.S. 2020 to present
- Seung Hyun Eom M.S. 2020 to present
- Yangha Jung, Ph.D. 2015 to present.
- Junsik Kim, Ph.D. 2016 to present.
- Seonghun Cho (Co-advisor), Ph.D. 2018 to present

PUBLICATIONS **Refereed Journal Articles (Published or In Press: * corresponding author))**

1. J. Kim, Loh, J. M. and **Jang, W.*** (2021+). Generalized bagging. *Journal of the Korean Statistical Society*. https://doi.org/10.1007/s42952-021-00114-8. To appear.

2. Cho, S., Lim, J.* and **Jang, W.** (2021+). How many participated in candlelight protests? Counting the size of a dynamic crowd. *Journal of Applied Statistics*. https://doi.org/10.1080/02664763.2021.1871591. To appear.

3. Kim, B., Kim, S., **Jang, W.** *, Jung, S. and Lim, J. (2021). Estimation of the case fatality rate based on stratification for the COVID-19 outbreak. *PLoS ONE*. **16** e0246921. https://doi.org/10.1371/journal.pone.0246921.

4. Chung, K H., Lee, J.-C., Lee, J., Cho, I.-K., Kim, J., **Jang, W.**, Yoo, B. C. and Hwang, J.-H. (2020). Serum fibrinogen as a diagnostic and prognostic biomarker for pancreatic ductal adenocarcinoma. *Panceatology*. **20** 1465–1471. https://doi.org/10.1016/j.pan.2020.06.010.

5. Jeong, S.-O., Choi, D. and **Jang, W.*** (2020) A semiparametric mixture method for local false discovery rate estimation from multiple studies. *Annals of Applied Statistics*. **14** 1242–1257. https://doi.org/10.1214/20-AOAS1341

6. Park, S. and **Jang, W.***. (2020) Evaluating the quality of baseball pitch using PITCH f/X. *The Korean Journal of Applied Statistics*. **33** 171–184 https://doi.org/10.5351/KJAS.2020.33.2.171

7. Cho, S. and **Jang, W.*** (2019). Analysis of Korean baduk rating system and dum. *The Korean Journal of Applied Statistics*. **32** 783–794. https://doi.org/10.5351/KJAS.2019.32.6.783

8. Bayarri, M., Berger, J., **Jang, W.**, Ray, S., Pericchi, L. and Visser, I. (2019). Prior-based Bayesian Information. *Statistical Theory and Related Fields*. **3** 2–13. https://doi.org/10.1080/24754269.2019.1582126

9. Kim, J., Lim, J, Kim, Y. and **Jang, W.*** (2018). Bayesian variable selection under heredity constraints. *Journal of the Korean Statistical Society*. **47** 314–329. https://doi.org/10.1016/j.jkss.2018.03.003

10. Lee, S., **Jang, W.** and Park, B. U. (2018). Excess mass test for multimodality. *Australian and New Zealand Journal of Statistics*. **60** 115–131. https://doi.org/10.1111/anzs.12214

11. Choi, S. and Jang, W. (2017). Forecasting probabilities of earthquake in Korea based on seismological records. *The Korean Journal of Applied Statistics*. **30** 759–774. http://dx.doi.org/10.5351/KJAS.2017.30.5.759

12. Kwon, S., Ahn, J., **Jang, W.**, Lee, S. and Kim, Y. (2017). A doubly sparse penalty approach for group variable selection. *Annals of the Institute of Statistical Mathematics*. **69** 997–1025. http://dx.doi.org/10.1007/s10463-016-0571-z

13. Park, C. and **Jang, W.***. (2017). Cosponsorship networks in the 17th national assembly of Republic of Korea. *The Korean Journal of Applied Statistics* **30** 403–415. https://doi.org/10.5351/KJAS.2017.30.3.403

14. Wee, J., Jang, S., Lee, J. and **Jang, W.** (2017). The influence of depression and personality on social networking. *Computers in Human Behavior* **74** 45–52. http://doi.org/10.1016/j.chb.2017.04.003

15. **Jang, W*****.** and Loh, J. M. (2017). Quantitative comparison of two-point correlation functions from real and mock SDSS galaxy catalogs. *Astrophysical Journal* **839**. https://doi.org/10.3847/1538-4357/aa67f5

16. **Jang, W.** and Loh, J.-M. (2017). Bandwidth selection for estimating the two-point correlation function of a spatial point pattern using AMSE. *Statistica Sinica* **27** 1401–1418. http://dx.doi.org/10.5705/ss.202015.0426

17. Kim, Y. and **Jang, W.*** (2016). Direction of improvement of privacy protection regulation for promoting artificial intelligence industry. *Journal of Law and Economic Regulation*, **9**, 161–176.

18. **Jang, W.***, Kim, G. and Kim, J. (2016). Current trends in high dimensional massive data analysis. *The Korean Journal of Applied Statistics*, **29**, 999–1006. http://dx.doi.org/10.5351/KJAS.2016.29.6.999

19. Kim, Y, Jong, S. J., **Jang, W.** and Lee, J. (2016). Innovation of technology and social changes - quantitative analysis based on patent big data. *The Korean Journal of Applied Statistics*, **29**, 1025–1040. http://dx.doi.org/10.5351/KJAS.2016.29.6.1025

20. Kim, W., **Jang, W.** and Song, H. (2016). On the distribution of the movement speed of smartphone users. *KIISE Transactions on Computing Practices*, **22**, 567–575. http://dx.doi.org/10.5626/KTCP.2016.22.11.567

21. Lee, M., Kim, Y. and **Jang, W.*** (2016). Patent citation network. *The Korean Journal of Applied Statistics* **29** 613-626. http://dx.doi.org/10.5351/KJAS.2016.29.4.613

22. Choi, Y. J., Kim, N., **Jang, W.***, Seo, B., Oh, S., Shin, C. M., Lee, D. H. and Jung, H.C. (2016). Familial clustering of gastric cancer: a retrospective study based on the number of first-degree relatives. *Medicine* **95** e3606. http://dx.doi.org/10.1097/MD.0000000000003606

23. Lee, H., Roh, J. Jung, J. H. and **Jang, W.*** (2016). Network analysis of urban to rural migration. *The Korean Journal of Applied Statistics* **29** 487–504. http://dx.doi.org/10.5351/KJAS.2016.29.3.487

24. **Jang, W.***, Lim, J., Lazar, N., Loh, J. M. and Yu, D. (2015). Some properties of generalized fused lasso and its applications to high dimensional data. *Journal of the Korean Statistical Society* **44** 352–365. http://dx.doi.org/10.1016/j.jkss.2014.10.002.

25. Kim, K., Ahn, S., Lim, J., Yoo, B. C. Hwang, J-H. and **Jang, W.*** (2014). Detection of pancreatic cancer biomarkers using mass spectrometry. *Cancer Informatics.* Supp. 7 45–54. http://dx.doi.org/10.4137/CIN.S16341.

26. Jung, J. H., Roh, J-S., **Jang, W.**, Kim, S. B., Yoon, K. Y. and Kim, J. (2014). Regional analysis of the migration patterns of returning farmers. *Journal of the Korean Society of Rural Planning.* **20** 221–232. http://dx.doi.org/10.7851/ksrp.2014.20.4.221

27. Maier, G., Grundstein, A., **Jang, W.**, Li, C., Naeher, N. and Shepherd, M. (2014) Assessing the performance of a vulnerability index during oppressive heat across Georgia, US. *Weather, Climate, and Society.* **6** 253–263. http://dx.doi.org/10.1175/WCAS-D-13-00037.1

28. Brown, D. A., Lazar, N., Datta, G. S., **Jang, W.** and McDowell, J. E. (2014) Incorporating spatial dependence into Bayesian multiple testing of statistical parameter maps in functional neuroimaging. *Neuroimage.* **84** 97–112. http://dx.doi.org/10.1016/j.neuroimage.2013.08.024

29. Ebell, M. H., **Jang, W.**, Shen, Y. and Geocadin, R. G. (2013) Development and validation of the good outcome gollowing attempted resuscitation (GO-FAR) score to predict neurologically intact survival after in-hospital cardiopulmonary resuscitation. *Journal of the American Medical Association Internal Medicine.* **173** 1872–1878. http://dx.doi.org/10.1001/jamainternmed.2013.10037

30. **Jang, W.** (2013) Multiple testing and its applications in high-dimension. *Journal of the Korean Data & Information Science Society.* **24** 1063–1076. http://dx.doi.org/10.7465/jkdi.2013.24.5.1063

31. Kim, Y., Kim, J. and **Jang, W.** (2013) An EM algorithm for the proportional hazards model with doubly censored data. *Computational Statistics & Data Analysis.* **57** 41–51. http://dx.doi.org/10.1016/j.csda.2012.06.001

32. Yu, D., Lim, J., Liang, F., Kim, K., Kim, B. and **Jang, W.*** (2012). Permutation test for incomplete paired data with application to cDNA microarray data. *Computational Statistics & Data Analysis* **56** 510–521. http://dx.doi.org/10.1016/j.csda.2011.08.012

33. Park, C., Ahn, J., Hendry, M. and **Jang, W.*** (2011). Analysis of long period variable stars with nonparametric tests for trend detection. *Journal of the American Statistical Association* **495** 832–845. http://dx.doi.org/10.1198/jasa.2011.ap08689.

34. **Jang, W.*** and Loh, J. M. (2010). Density estimation for grouped data with application to transect sampling. *Annals of Applied Statistics* **4** 893–915. http://dx.doi.org/10.1214/09-AOAS307.

35. Kim, Y., Kim, B. and **Jang, W.*** (2010). Asymptotic properties of the maximum likelihood estimation for the proportional hazards model with doubly censored data. *Journal of Multivariate Analysis* **101** 1339–1351. http://dx.doi.org/10.1016/j.jmva.2010.01.010.

36. Loh, J. M. and **Jang, W.** (2010). Estimating a cosmological mass bias parameter with bootstrap bandwidth selection. *Journal of the Royal Statistical Society, Series C* **59** 761–779. http://dx.doi.org/10.1111/j.1467-9876.2010.00728.x

37. **Jang, W.*** and Lim, J. (2009). A numerical study of PQL estimation biases in generalized linear mixed models under heterogeneity of random effects. *Communication in Statistics - Simulation and Computation* **38** 692-702. http://www.informaworld.com/10.1080/03610910802627055.

38. Choi, B., **Jang, W.**, and Salama, G. (2007). Spatially discordant voltage alternans cause wavebreaks in ventricular fibrillation. *Heart Rhythm* **4** 1057-1068. http://dx.doi.org/10.1016/j.hrthm.2007.03.037

39. **Jang, W.*** and Hendry, M. (2007). Cluster analysis for massive datasets in astronomy. *Statistics and Computing* **17** 253-262. http://dx.doi.org/10.1007/s11222-007-9027-x

40. Jung, S.-H. and **Jang, W.** (2006). How accurately can we control the FDR in analyzing microarray data? *Bioinformatics* **22** 1730-1736. http://dx.doi.org/10.1093/bioinformatics/btl161

41. **Jang, W.** (2006). Nonparametric density estimation and clustering in astronomical sky surveys. *Computational Statistics & Data Analysis* **50** 760-774. http://dx.doi.org/10.1016/j.csda.2004.10.001

Refereed Journal Articles (Submitted: * corresponding author)

42. Park, H., Loh, J.-M. and **Jang, W.*** Nonparametric inference for symbolic data using kernel methods.

43. Kim, J and **Jang, W.***. A generalized Agresti-Coull type confidence interval for a binomial proportion.

Book Chapters and Invited Publications

44. **Jang, W.***. (2014). Discussion of *The history and future of Bayesian Statistics* by Lee, Lee and Lee . *The Korean Journal of Applied Statistics* **27** 865–866. http://dx.doi.org/10.5351/KJAS.2015.27.6.865

45. Won, J., **Jang, W.**[*] and Lim, J. (2013). Discussion of *Large covariance estimation by thresholding principle orthogonal complements* by Fan, Liao and Mincheva. *Journal of the Royal Statistical Society, Series B* **75** 671–672. http://dx.doi.org/10.1111/rssb.12016

46. **Jang, W.**[*] and Lim, J. (2010). Discussion of *Maximum likelihood estimation of a multidimensional log-concave density* by Cule, Samworth and Stewart, *Journal of the Royal Statistical Society, Series B* **72** 596. http://dx.doi.org/10.1111/j.1467-9868.2010.00753.x

47. **Jang, W.** (2007). Comments on Analyzing data from astronomical surveys: issues and directions by Tom Loredo. In *Statistical Challenges in Modern Astronomy IV*. Astron. Soc., San Francisco, 138-141.

48. **Jang, W.** (2003). Nonparametric density estimation and galaxy clustering. In *Statistical Challenges in Astronomy.* Springer, New York, 443-445.

49. **Jang, W.**, Miller, C., Connolly, A., Schneider, J., Genovese, C., Nichol, B., Moore, A. and Wasserman, L. (2003). Nonparametric inference in astrophysics. In *Statistical Challenges in Astronomy.* Springer, New York, 221-235.

Other Publications

50. **Jang, W.** (2013), Book review of *Generalized estimating equations, 2nd edition* by Hardin and Hilbe. *Biometrics* **69** 799–800 http://dx.doi.org/10.1111/biom.12092.

51. Choi, B., **Jang, W.** and Salama, G. (2005). Patterns of wave break locations in ventricular fibrillation. *Heart Rhythm* **2** S216-S216.

Work Currently in Progress

1. **Jang, W.**[*], Loh, J.-M. and Duong, T. Bandwidth selection for bivariate intensity function estimation.

2. Kim, B., Kim, S., **Jang, W.** [*], Jung, S. and Lim, J. Small sample inference for RT-PCR

INVITED AND COLLOQUIUM PRESENTATIONS	JUL 2019	*A semiparametric mixture method for local false discovery rate estimation*, The 4th Eastern Asia meeting on Bayesian Statistics, Kobe, Japan.
	JUL 2019	*A semiparametric mixture method for local false discovery rate estimation*, 2019 IMS-China, Dalian, China.
	AUG 2018	*A semiparametric mixture method for local false discovery rate estimation*, The 23rd International Conference on Computational Statistics, IASI, Romania.
	JUL 2018	*Prior-based Bayesian Information Criterion*, The 3rd Eastern Asia meeting on Bayesian Statistics, Seoul, Korea.
	JUN 2018	*Prior-based Bayesian Information Criterion*, The 5th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Singapore.
	APR 2018	*Data Science and Digital Humanities: from Ye-Song Dispute to Candlelight Protests*, Sungkyunkwan University, Seoul, Korea.
	FEB 2018	*Data Science and Digital Humanities: from Ye-Song Dispute to Candlelight Protests*, Sookmyung Women's University, Seoul, Korea.
	JAN 2018	*How many people participated in candlelight protests?* The 5th annual meeting of Asian Political Methodology, Seoul, Korea.
	DEC 2017	*Prior-based Bayesian Information Criterion*, Joint Meeting of 10th Asian Regional Section (ARS) of the International Association for Statistical Computing (IASC) and the NZ Statistical Association (NZSA), Auckland, New Zealand.

AUG 2017   *Kernel Methods for Symbolic Data*, 2017 Conference of the International Federation of Classification Societies, Tokyo, Japan.

DEC 2016   *Network Analysis of Ye-Song debate, a major political conflict in the last Monarchy in Korea based on the Annals of Joseon Dynasty*, The 10th ICSA International Conference on Global Growth of Modern Statistics in the 21st Century, Shanghai, China.

NOV 2016   *Current trends in high dimensional massive data analysis*, Korean Statistical Society 2015 Fall Meeting, Daejeon, Korea.

JUN 2015   *Generalized Bagging*, The 28th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, Seoul, Korea.

MAY 2015   *Generalized Bagging*, Korean Statistical Society 2015 Spring Meeting, Cheongju, Korea

APR 2015   *Data Visualization and Reproducible Research with R*, Department of Statistics, Kyungpook National University, Daegu, Korea

NOV 2014   *Regression Shrinkage and Grouping of Highly Correlated Predictors with HORSES*, International Statistical Institute Regional Statistics Conference 2014: Statistical Science for a Better Tomorrow, Kuala Lumpur, Malaysia

AUG 2014   *Shrunken Linear Discriminant Analysis*, UKC2014, San Francisco, CA, USA.

MAY 2014   *Reproducible Research with R*, R User Conference Korea 2014: Real and NeaR FutuRe of Data analysis with R!, Seoul, Korea

MAY 2014   *Shrunken Linear Discriminant Analysis*, Korean Statistical Society 2014 Spring Meeting, Daejeon, Korea

MAY 2014   *A semiparametric mixture method for local false discovery rate estimation*, Pacific Rim Statistics Workshop, Shanghai, China

DEC 2013   *HORSES: Hexagonal Operator for Regression with Shrinkage and Equality Selection*, Department of Statistics, Pusan National University, Busan, Korea.

OCT 2013   *Multiple Testing and Its Applications in High-dimension*, Korean Data and Information Science Society 2013 Fall meeting, Seoul, Korea.

OCT 2013   *Recent developments in Big Data Analysis*, Department of Mathematics Education, Seoul National University, Seoul, Korea.

SEP 2013   *Recent developments in Big Data Analysis*, Department of Communications, Seoul National University, Seoul, Korea.

MAY 2013   *HORSES: Hexagonal Operator for Regression with Shrinkage and Equality Selection*, Korean Statistical Society 2013 Spring Meeting, Incheon, Korea

MAY 2013   *Overview of Astrostatistics*, Department of Applied Statistics, Konkuk University, Seoul, Korea.

NOV 2012   *A Semiparametric Mixture Method for Estimating Local False Discovery Rates*, Department of Statistics, Korea University, Seoul, Korea.

NOV 2012   *Overview of Finding Needles in a Haystack*, Department of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea.

NOV 2012   *Recent Developments in Multiple Testing*, Korean Statistical Society 2012 Fall Meeting, Seoul, Korea.

OCT 2012   *Overview of Astrostatistics*, School of Physics and Astronomy, Seoul National University, Seoul, Korea.

JUL 2012   *Analysis of Long Period Variable Stars with Nonparametric Tests of Trend Detection*, The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting, Tsukuba, Japan.

SEP 2011   *Analysis of Long Period Variable Stars with Nonparametric Tests of Trend Detection*, Department of Statistical Science, Duke University, Durham, NC, USA.

JUL 2011   *Confidence sets and goodness-of-fit tests in high dimension*, 2011 KSS International Conference on Statistics and Probability, Busan, Korea.

JUN 2011   *Overview of Functional Data Analysis*, Korean Statistical Society 2011 Spring Meeting, Daejeon, Korea.

JUN 2010   *HORSES: Hexagonal Operator for Regression with Shrinkage and Equality Selection.* Department of Applied Statistics, Yonsei University, Seoul, Korea.

JUN 2010   *HORSES: Hexagonal Operator for Regression with Shrinkage and Equality Selection.* Department of Statistics, Seoul National University, Seoul, Korea.

JUL 2009   *Density estimation for grouped data with application to transect sampling*, Department of Statistics, Korea National Open University, Seoul, Korea.

JUL 2009   *Density estimation for grouped data with application to transect sampling*, Department of Statistics, University of Seoul, Seoul, Korea.

JUL 2009   *Density estimation for grouped data with application to transect sampling*, Department of Statistics, Hankuk University of Foreign Studies, Yong-In, Korea.

JUN 2009   *Recent Developments in Statistical Machine Learning*, The 1st Institute of Mathematical Statistics Asia Pacific Rim Meeting, Seoul, Korea.

JUN 2008   *Analysis of Long Period Variable Stars with Nonparametric Significance Test of No Trend*, Department of Statistics, Korea University, Seoul, Korea.

JUN 2008   *Analysis of Long Period Variable Stars with Nonparametric Significance Test of No Trend*, Department of Statistics, Ewha Womans University, Seoul, Korea.

JUN 2008   *Analysis of Long Period Variable Stars with Nonparametric Significance Test of No Trend*, Department of Statistics, Seoul National University, Seoul, Korea.

JUN 2007   *Bayesian Variable Selection under Heredity Constraints*, ICSA 2007, Raleigh, NC, USA.

NOV 2006   *High Dimensional Massive Data Analysis: from Astronomy to Public Health*, Department of Biostatistics and Epidemiology, University of South Carolina, Columbia, SC, USA.

NOV 2006   *High Dimensional Massive Data Analysis: from Astronomy to Public Health*, Department of Statistics, University of Georgia, Athens, GA, USA.

JUN 2006   Commentary for *Recent Progress in Statistical Methodology for Astronomical Surveys* by Tom Loredo, Statistical Challenges in Modern Astronomy IV, College Park, PA, USA.

MAR 2006   *How accurately can we control the FDR in analyzing microarray data?*, Department of Health Administration, Biostatistics & Epidemiology, University of Georgia, Athens, GA, USA.

MAR 2006   *Cluster Analysis of Massive Data with Application to Astronomy*, Statistics Research, AT&T Labs, Florham Park, NJ, USA.

JUN 2005   *A Fast Clustering Algorithm with Application to Cosmology*, Interface 2005: Clustering and Classification, St. Louis, MO, USA.

APR 2005   *Uniform Confidence Sets for Densities*, Institute of Statistics & Decision Sciences, Duke University, Durham, NC, USA.

FEB 2004   *Nonparametric Density Estimation and Clustering with Application to Cosmology*, Statistics and Data Mining Research, Bell Labs, Murray Hill, NJ, USA.

JAN 2004   *Introduction to Spatial Statistics for Medical Studies*, Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, PA, USA.

FEB 2003   *Nonparametric Density Estimation and Clustering with Application to Cosmology*, Department of Statistics, Purdue University, West Lafayette, IN, USA.

FEB 2003   *Nonparametric Density Estimation and Clustering with Application to Cosmology*, Machine Learning Lunch Talk, Center for Automated Learning and Discovery, Carnegie Mellon University, Pittsburgh, PA, USA.

JUN 2015	*Bayesian variable selection under heredity constraints*, 11th International Workshop on Objective Bayes Methodology, O-Bayes 15, Valencia, Spain.
JUN 2014	*A semiparametric mixture method for local false discovery rate estimation*, ASC-IMS 2014 Conference, Sydney, Australia.
OCT 2011	*Regression Shrinkage and Equality Selection for highly correlated predictors with HORSES*, Case Studies in Bayesian Statistics and Machine Learning I, Pittsburgh, PA, USA.
AUG 2010	*Analysis of Long Period Variable Stars with Nonparametric Tests of Trend Detection*, JSM 2010, Vancouver, BC, Canada.
MAY 2010	*HORSES: Hexagonal Operator for Regression with Shrinkage and Equality Selection*, Conference on Nonparametric Statistics and Statistical Learning, Columbus, OH, USA.
MAR 2010	*Honey, I shrunk the brains!* (Poster), Frontiers of Statistical Decision Making and Bayesian Analysis, San Antonio, TX, USA.
JUN 2009	*Analysis of Long Period Variable Stars with Nonparametric Tests for Trend Detection* (Poster), Southern Regional Council on Statistics 2009 Summer Research Conference, Jekyll Island, GA, USA.
MAY 2009	*Confidence Sets and Goodness-of-Fit Tests in High Dimension*, Symposium on "New Directions in Asymptotic Statistics", Athens, GA, USA.
MAR 2009	*Analysis of Long Period Variable Stars with Nonparametric Tests of Trend Detection*, ENAR 2009, San Antonio, TX, USA.
MAR 2009	*Analysis of Long Period Variable Stars with Nonparametric Tests for Trend Detection* (Poster), Conference on Statistical Methods for Complex Data, College Station, TX, USA.
MAR 2008	*Bayesian Variable Selection under Heredity Constraints*, ENAR 2008, Arlington, VA, USA.
JAN 2008	*Bayesian Variable Selection under Heredity Constraints* (Poster), University of Florida Tenth Annual Winter Workshop: Bayesian Model Selection and Objective Methods, Gainesville, FL, USA.
OCT 2007	*Functional Classification with Sparsity and Feature Selection* (Poster), Current and Future Trends in Nonparametrics, Columbia, SC, USA.
MAR 2007	*Functional Classification with Sparsity and Feature Selection*, ENAR 2007, Atlanta, GA, USA.
APR 2006	*Cluster Analysis of Massive Datasets in Astronomy*, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, USA.
JAN 2006	*Density Estimation and Clustering in Astronomical Sky Survey* (Poster), Opening Workshop for the SAMSI program on Astrostatistics, Research Triangle Park, NC, USA.
JAN 2006	*Confidence Sets for Densities with Componentwise Shrinkage Estimators* (Poster), University of Florida Eighth Annual Winter Workshop: Frontiers of Theoretical Statistics, Gainesville, FL, USA.
AUG 2005	*Nonparametric Confidence Sets for Densities*, JSM 2005, Minneapolis, MN, USA.
SEP 2005	*Density Estimation and Clustering in Astronomical Sky Survey*, A Conference on Nonparametric Inference and Probability with Applications to Science, Ann Arbor, MI, USA.
AUG 2005	*AstroStatistics: An overview*, Eighth North American Meeting of New Researchers in Statistics and Probability, Minneapolis, MN, USA.
JUN 2005	*Componentwise Shrinkage Estimators and Confidence Sets for Densities* (Poster), The Fifth International Workshop on Objective Bayes Methodology, Branson, MO, USA.
JAN 2005	*Estimation Biases in Generalized Linear Mixed Models* (Poster), University of Florida Seventh Annual Winter Workshop: Longitudinal Data Analysis, Gainesville, FL, USA.
MAR 2004	*Nonparametric Confidence Sets for Densities*, ENAR 2004, Pittsburgh, PA, USA.

JAN 2004   *A Fast Clustering Algorithm with Application to Cosmology* (Poster), University of Florida Sixth Annual Winter Workshop: Data Mining, Statistical Learning, and Bioinformatics, Gainesville, FL, USA.

JUN 2002   *Nonparametric Density Estimation and Clustering in Cosmology : Large-scale structure of the Universe* (Poster), Workshop on Developments and Challenges in Mixture Models, Bump Hunting and Measurement Error Models, Cleveland, OH, USA.

MAR 2002   *Clustering with Nonparametric Density Estimation*, ENAR 2002, Arlington, VA, USA.

JUL 2001   *Nonparametric Density Estimation and Galaxy Clustering* (Poster), Statistical Challenges in Modern Astronomy III, State College, PA, USA.

AD HOC JOURNAL/BOOK REVIEW

- ❏ *Annals of the Institute of Statistical Mathematics*
- ❏ *Annals of Applied Statistics*
- ❏ *The American Statistician*
- ❏ *The Astrophysical Journal*
- ❏ *Biometrika*
- ❏ *BMC Bioinformatics*
- ❏ *Chemometrics and Intelligent Laboratory Systems*
- ❏ *Computational Statistics*
- ❏ *Computational Statistics and Data Analysis*
- ❏ *Electronic Journal of Statistics*
- ❏ *IMS Lecture Notes - Monograph Series*
- ❏ *Journal of Agricultural, Biological, and Environmental Statistics*
- ❏ *Journal of the American Statistical Association*
- ❏ *Journal of Atmospheric and Oceanic Technology*
- ❏ *Journal of Applied Meteorology and Climatology*
- ❏ *Journal of Biopharmaceutical Statistics*
- ❏ *Journal of Business & Economic Statistics*
- ❏ *Journal of Computational and Graphical Statistics*
- ❏ *Journal of the Korean Data & Information Science Society*
- ❏ *Journal of the Korean Statistical Society*
- ❏ *Journal of Machine Learning Research*
- ❏ *Journal of Nonparametric Statistics*
- ❏ *Journal of the Royal Statistical Society, Series C*
- ❏ *Journal of Statistical Computation and Simulation*
- ❏ *Journal of Statistical Planning and Inference*
- ❏ *The Korean Journal of Applied Statistics*
- ❏ *Pattern Recognition*
- ❏ *PLoS ONE*
- ❏ *Statistical Analysis and Data Mining*
- ❏ *Statistica Neerlandica*
- ❏ *Statistics and Probability Letters*
- ❏ *Telecommunications Review*
- ❏ *Springer book*
- ❏ *Chapman & Hall/CRC book*

UNIVERSITY AND DEPARTMENTAL SERVICE

- ❏ Seoul National University
  - Chair of Department of Statistics   **2020 - present**
  - Associate Director of Future Innovation Institute   **2020 - 2021**
  - Director of Strategic Planning, Office of Siheung Campus   **2020 - 2021**
  - Project Leader for Operative Planning, Office of Siheung Campus   **2019 -2020**
  - University Diversity Council   **Fall 2016 - Spring 2018**
  - University Planning Committee   **Fall 2016 - Spring 2018**

- University International Exchange Council **Fall 2016 - Spring 2018**
- College of Natural Sciences, Associate Dean for Planning **Fall 2016 - Spring 2018**
- Member, Steering Committee, Center for Artificial Intelligence **2019 - present**
- Member, Steering Committee, Center for Social Science Research Methods **2016 - present**
- Member, Steering Committee, Interdisciplinary Program *Data Science for Humanities*, **2016 - present**.
- Member, Steering Committee, Interdisciplinary Program *Information Science and Culture Studies*, **2016 - present**.
- Member, Steering Committee, Interdisciplinary Program *Brain, Mind and Behavior*, **2015 - present**.
- Member, Steering Committee, Interdisciplinary Program *Science and Technology Studies*, **2015 - present**.
- Associate Chair of Department of Statistics **Fall 2013 - Spring 15**
- Statistics Department Seminar Committee **Fall 2012 - Fall 2014**
- Statistics Department Curriculum Committee **Spring 2014 - present**
- Statistics Department Graduate Program Admission Committee **Fall 2012 - Spring 2013**
❑ University of Georgia
  - Biostatistics MPH Admission Committee **2007 - 2010**
  - Biostatistics Faculty Search Committee **2006 - 2008, 2010-2011**
  - Biostatistics Curriculum Committee **2006 - 2012**
  - Department Social Committee **2007 - 2008**
  - Department Exam Committee **2009 - 2010**
  - Statistics-Biostatistics Joint Seminar Committee **Fall 2008, Spring 2011**
  - James L. Carmon Scholarship Selection Committee **2008 - 2010**
  - Institute of Bioinformatics Membership Committee **2009 - 2012**
  - Biostatistics Graduate Coordinator **2010**

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

❑ Elected Member of International Statistical Institute
❑ Institute of Mathematical Statistics
❑ American Statistical Association
❑ International Society for Bayesian Analysis
❑ Korean Statistical Society
❑ Korean International Statistical Society

SERVICE TO ACADEMIC COMMUNITY

❑
- Statistical Editor, Journal of Veterinary Science **2020 - present**
- Review Associate Editor, Journal of the American Statistical Association **2020 - present**
- Review Associate Editor, The American Statistician **2020 - present**
- Associate Editor, Journal of the Korean Official Statistics **2021 - present**
- Editorial Board, Chemometrics and Intelligent Laboratory Systems **2016 - present**
- Associate Editor, Journal of the Korean Statistical Society **2011 - present**
- Local Organizing Committee member for the 10th IMS-Bernoulli Society World Congress in Probability and Statistics
- Scientific Program Committee member for the International Society of Bayesian Analysis 2020 World Meeting
- Local Organizing Committee member for the 3rd Eastern Asia Meeting on Bayesian Statistics
- Scientific Program Committee member for the 5th Institute of Mathematical Statistics Asia Pacific Rim Meeting
- Scientific Program Committee member for the 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting
- Chair, Topic contributed session, *New Horizons of Quantile Regression Analysis: Longitudinal and Recurrent Event Data*, Joint Statistical Meetings 2015, Seattle, USA.
- Organizer, Invited Session, *Variable Selection and Dimension Reduction in High dimensional data*, 2015 ISI World Statistics Congress, Rio de Janeiro, Brazil.

- Organizer, Invited Session, *Recent developments in Multiscale and Spatial methods*, IMS Asia Pacific Rim Meeting 2014, Taipei, Taiwan.
- Organizer/Chair, Topic contributed session, *Shape constrained inference*, Joint Statistical Meetings 2013, Montreal, Quebec, Canada.
- Organizer, Invited Session, *Nonparametric inference with applications to climate and astronomy*, IMS Asia Pacific Rim Meeting 2012, Tsukuba, Japan.
- Chair, Invited Session, *Statistical Learning Methods in Functional/High Dimensional Data Analysis*, IMS Asia Pacific Rim Meeting 2012, Tsukba, Japan.
- Organizer, Topic contributed session, *AstroStatistics*, Joint Statistical Meetings 2010, Vancouver, Canada.
- Chair, Invited Session, *Machine Learning*, Conference on Nonparametric Statistics and Statistical Learning 2010, Columbus, USA.
- Chair, Invited Session, *Multiscale Methods and Statistics*, IMS Asia Pacific Rim Meeting 2009, Seoul, Korea.
- Organizer, Invited Session, *Statistical Machine Learning and High Dimensional Inference*, IMS Asia Pacific Rim Meeting 2009, Seoul, Korea.
- Chair, Topic contributed session, *Bootstrap*, Symposium on "New Directions in Asymptotic Statistics" 2009, Athens, USA.
- Organizer, Topic contributed session, *Statistical Machine Learning and High Dimensional Inference*, Joint Statistical Meetings 2007, Salt Lake City, UT.
- Chair, Topic contributed session, *Bayesian Shrinkage and Prediction*, Joint Statistical Meetings 2005, Minneapolis, USA
- Treasurer, North American Chapter of Korean Statistical Society **2004 - 2010**

AWARDS AND
HONORS

2019 Elected Member, International Statistical Institute

2018 Seoul National Univeristy *Excellence in Teaching* Award

2016 Seoul National University College of Natural Sciences *Excellence in Research* Award

2011 University of Georgia Foreign Travel Assistance Program Award

2010 University of Georgia Foreign Travel Assistance Program Award

2009 University of Georgia Foreign Travel Assistance Program Award

2008 NSF Young Researcher's Travel Award, University of Florida Tenth Annual Winter Workshop: Bayesian Model Selection and Objective Methods.

2006 NSF Young Researcher's Travel Award, University of Florida Eighth Annual Winter Workshop: Frontiers of Theoretical Statistics.

2005 IMS Laha Travel Award, Joint Statistical Meeting/IMS Annual Meeting

2005 Travel Award, The Fifth International Workshop on Objective Bayes Methodology.

2005 NSF Young Researcher's Travel Award, University of Florida Seventh Annual Winter Workshop: Longitudinal Data Analysis.

2004 NSF Young Researcher's Travel Award, University of Florida Sixth Annual Winter Workshop: Data Mining, Statistical Learning, and Bioinformatics.

2002 Student's Travel Award, Workshop on Developments and Challenges in Mixture Models, Bump Hunting and Measurement Error Models.

As of Feb. 17th, 2021