JEONGYOUN AHN

310 Herty Drive◇ Athens, GA 30602

(706) 542 - 3433 ◇ jyahn@uga.edu

June 2, 2020

EDUCATION

- **University of North Carolina at Chapel Hill**, Ph.D. in Statistics
  Under the direction of J.S. Marron, "High Dimension, Low Sample Size Data Analysis"   *2006*

- **Seoul National University**, B.S. & M.S. in Statistics

RESEARCH INTERESTS

My research interests are on developing generalizable supervised and unsupervised learning methodologies for analyzing high dimensional data including high-throughput genetics data and infinite-dimensional, functional data. Recent projects include supervised dimension reduction for multi-modality data with enhanced interpretability and abnormality detection of images with generalized permutation test.

EXPERIENCE

Associate Professor, University of Georgia	*2012–Present*
Assistant Professor, University of Georgia	*2006–2012*

PEER-REVIEWED JOURNAL PUBLICATIONS - PUBLISHED OR ACCEPTED

* indicates a Ph.D. advisee

1. Ahn, J., Chung, H. C.*, and Jeon, Y. (2020), Trace Regularization for High-dimensional Multi-class Discrimination, *Journal of Computational and Graphical Statistics*, to appear.

2. Qiu, D.* and Ahn, J. (2020), Grouped Variable Screening for Ultrahigh Dimensional Data Under Linear Model, *Computational Statistics and Data Analysis*, 144, 106894.

3. Ahn, J., Lee, M. H., and Lee, J.* (2019), Distance-based Outlier Detection for High Dimension, Low Sample Size Data, *Journal of Applied Statistics*, 46(1), 13–29.

4. Jung, S., Ahn, J. and Jeon, Y. (2019) Penalized Orthogonal Iteration for Sparse Estimation of Generalized Eigenvalue Problem, *Journal of Computational and Graphical Statistics*, 28(3), 710–721

5. Jung, S., Lee, M. H., and Ahn, J. (2018), On the number of principal components in high dimensions, *Biometrika*, 105(2), 389–402.

6. Safo, S.* , Ahn, J., Jeon, Y. and Jung, S. (2018), Sparse Generalized Eigenvalue Problem for Canonical Correlation Analysis With Application to Integrative Analysis of Methylation and Gene Expression Data, *Biometrics*, 74(4), 1362–1371.

7. Park, J. and Ahn, J. (2017), Clustering Multivariate Functional Data with Phase Variation, *Biometrics*, 73(1): 324–333.

8. 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.

9. Safo, S.* and Ahn, J. (2016), General Sparse Multi-class Linear Discriminant Analysis, *Computational Statistics and Data Analysis*, 99:81–90.

10. Ahn, J. and Jeon, Y. (2015), Sparse HDLSS Discrimination with Constrained Data Piling, *Computational Statistics and Data Analysis*, 90:74–83.

11. Jeon, Y., Ahn, J., and Park, C. (2015), A Nonparametric Kernel Approach to Interval-Valued Data Analysis, *Technometrics*, 57 (4), 566-575. (Corresponding author).

12. Lee, J.* , Dobbin, K. K., and Ahn, J. (2014), Covariance Adjustment for Batch Effect in Gene Expression Data, *Statistics in Medicine*, 33(15):2681–2695. (Corresponding author).

13. Lee, M. H., Ahn, J. and Jeon, Y. (2013), HDLSS Discrimination with Adaptive Data Piling, *Journal of Computational and Graphical Statistics*, 22:433-451.

14. Ahn, J., Peng, M., Park, C., Jeon, Y. (2012), A Resampling Approach for Interval-Valued Data Regression, *Statistical Analysis and Data Mining*, 5:336–348.

15. Ahn, J., Lee, M. H., and Yoon, Y. J. (2012), Clustering High Dimension, Low Sample Size Data Using the Maximal Data Piling Distance, *Statistica Sinica*, 22(2):443–464. (Corresponding author).

16. 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*, 106(495):832–845.

17. Park, E., Spiegelman, C. and Ahn, J. (2011), A Nonparametric Approach Based on a Markov like Property for Classification, *Chemometrics and Intelligent Laboratory Systems*, 108:87–92.

18. Ahn, J. and Marron, J. S. (2010), The Maximal Data Piling Direction for Discrimination, *Biometrika*, 97:254–259. (Corresponding author).

19. Ahn, J. (2010), A Stable Hyperparameter Selection for the Gaussian RBF Kernel for Discrimination, *Statistical Analysis and Data Mining*, 3:142–148.

20. Park, C., Lazar, N., Ahn, J., and Sornborger, A. (2010), A Multiscale Analysis of the Temporal and Spatial Characteristics of Resting fMRI Data, *Journal of Neuroscience Methods*, 193:334–342.

21. Liu, Y., Zhang, H. H., Park, C., and Ahn, J. (2007), Support Vector Machines with Adaptive L_q Penalty, *Computational Statistics and Data Analysis*, 51:6380–6394.

22. Ahn, J., Marron, J. S., Muller, K.E. and Chi, Y. -Y. (2007), The High Dimension, Low Sample Size Geometric Representation Holds Under Mild Conditions, *Biometrika*, 94:760–766. (Corresponding author).

23. Marron, J. S., Todd, M. J., and Ahn, J. (2007), Distance Weighted Discrimination, *Journal of the American Statistical Association*, 102:1267–1271.

24. Zhang, H., Ahn, J., Lin, X., and Park, C. (2006), Gene Selection Using Support Vector Machines with Nonconvex Penalty, *Bioinformatics*, 22:88–95.

25. Robinson III, W. P., Stiffler, A., Rutherford, E. J., Ahn, J., Hurd, H., Baker, C. C., Meyer, A., and Rich, P. B. (2004), Blood Transfusion is an Independent Predictor of Increased Mortality in Nonoperatively Managed Blunt Hepatic and Splenic Injuries, *Journal of Trauma-Injury Infection & Critical Care*, 58:437–445.

26. Ahn, J. and Park, S. H. (1999), Optimal Restrictions on Regression Parameters For Linear Mixture Model, *Journal of Korean Statistical Society*, 28:325–336.

ARTICLES SUBMITTED BUT NOT YET ACCEPTED

1. Park, J., Ahn, J., and Jeon, Y., Sparse Functional Linear Discriminant Analysis, *Under 2nd round revision, Biometrika*.

2. Chung, H. C.* and Ahn, J., Randomized Dual Rotations for High-dimensional Outlier Detection, *Revision Submitted, Journal of Multivariate Analysis.*

3. Poythress, J.C.*, Ahn, J., and Park, C., Dimension-wise Sparse Low-rank Approximation of a Matrix with Application to Variable Selection in High-Dimensional Integrative Analyses of Association, *Submitted to Biometrics.*

4. Poythress, J.C.*, Ahn, J., and Park, C., A low-rank, orthogonally decomposable tensor regression with application to visual stimulus decoding with fMRI Data, *Submitted to Journal of Computational and Graphical Statistics.*

5. Fang, X., Sun, W., Jeon J., Azain M., Kinder H., Ahn J., Chung, H.C., Filipov, N., Zhao, Q., Rayalam S., and Park, H., Perinatal Docosahexaenoic Acid Supplementation Improves Cognition and Alters Brain Functional Organization in Piglets, *Submitted to Journal of Nutritional Biochemistry*

6. Poythress, J., Kaiser, E., Scheulin, K., Jurgielewicz, B., Lazar, N., Park, C., Stice, S., Ahn, J., and West, F., An integrative multivariate approach for predicting functional recovery in a translational pig ischemic stroke model, *Submitted to Neural Regeneration Research*

IN PREPARATION

1. Chung, H. and Ahn, J., Dimension Reduction for High-dimensional Regression with Trace Ratio Optimization.

2. Li, B. and Ahn, J., A Geometric Approach for Compositional Data Analysis.

3. Ahn, J. and Jung, S., Discriminant Analysis with Flexible Ordinality.

4. Ahn, J., Extrapolation in Ultra-high Dimensional Linear Regression.

OTHER PUBLICATIONS

1. Fang, X., Jeon, J., Kinder, H., Azain, M., Zhao, Q., Ahn, J., Chung H. C., Park, H. J. (2019). The effect of maternal supplementation of lutein and docosahexaenoic acid on behavior and brain structures in offspring in a pig model (P11-005-19). *Current developments in nutrition,3 (Abstract publication in a conference proceeding).*

2. Ahn, J. (2011), Book Review of "Principles and Theory for Data Mining and Machine Learning" by Clarke, Fokoue, and Zhang, *Journal of the American Statistical Association*, 106:375–382.

3. Ahn, J. and Lee, M. H. (2011), Discussion on "Two-Stage Procedures for High-Dimensional Data" by Makoto Aoshima and Kazuyoshi Yata, *Sequential Analysis*, 30:423–426.

RESEARCH GRANTS

- Evaluation of sample sizes used to train microarray classifiers and prognostic predictors, NIH 1R21CA152460-01A1, PI (with Dobbin in UGA Biostatistics), 40% Academic credit, $322,992 2011–2013

- High Dimension, Low Sample Size Discrimination, NSF DMS-0805758 (sole PI), $105,000 2008–2011

- HDLSS Data Analysis for Micro-array Gene Expression Studies, M.G. Michael Research Award, Franklin College of Arts and Sciences, University of Georgia, $5,000   2009

- Provost Summer Research Grant, University of Georgia, $5,000   2014

- Provost Travel Funds, University of Georgia,   2014, 2016, 2018, 2019

EDITORIAL SERVICES

Associate Editor, Journal of the Korean Statistical Society   2019–
Editorial Board, Chemometrics and Intelligent Laboratory Systems   2016–
Associate Editor, The American Statistician   2014–
Associate Editor, Communications for Statistical Applications and Methods   2013–2014

REFEREEING

The Annals of Applied Statistics
The Annals of Statistics
The American Statistician
Applied Intelligence
Biometrics
Biometrika
Chemometrics and Intelligent Laboratory Systems
Communications in Statistics Theory and Methods
Computational Statistics
IEEE Transactions SMC, Part B
Journal of the American Statistical Association
Journal of Biopharmaceutical Statistics
Journal of Computational and Graphical Statistics
Journal of the Korean Statistical Society
Journal of Machine Learning Research
Journal of Multivariate Analysis
Journal of Nonparametric Statistics
Journal of the Royal Statistical Society
Journal of Statistical Computation and Simulation
Journal of Statistical Planning and Inference
Journal of Statistical Theory and Practice
Mathematical Problems in Engineering
Scandinavian Journal of Statistics
Stat
Statistica Sinica
Statistical Analysis and Data Mining
Statistica Neerlandica
Statistics
Statistics and Its Interface
Statistics and Probability Letters

PRESENTATIONS

All invited unless mentioned otherwise

- Rotation Test for High Dimensional Outlier Detection, *Department of Statistics, Purdue University, September 2019*

- Rotation Test for Outlier Detection, *IMS-China, Dalian, China, July 2019*

- High Dimensional Discrimination with Trace Regularization, *IMS-APRM, Singapore, June 2018; JSM, Vancouver, August 2018.*

- Randomized Dual Rotations with Application to High Dimensional Outlier Identification, *Contributed, JSM, Baltimore, August 2017*

- Object-oriented Data Analysis, *7th Annual Conference of Korean-American Women in Science and Engineering Southeastern Chapter, Duluth, May 2017*

- Dual Rotations for High Dimensional Outlier Identification, *9th International Conference of the ERCIM Workgroup on Computational and Methodological Statistics, Seville, Spain, December 2016.*

- Sparse HDLSS discrimination with constrained data piling, *JSM, Chicago, August 2016*

- Clustering multivariate functional data with phase variation, *Recent Developments in Statistical Science and Its Applications, Chung-Ang University, Korea, July 2016*

- Outlier Detection for HDLSS data, *Kyungbook National University, Choongbook National University, July, 2015*

- HDLSS Outlier Detection, *JSM, Boston, MA, Aug, 2014*

- HDLSS Outlier Detection, *4th IMS-APRM, Taiwan, June, 2014*

- Covariance Adjustment for Batch Effects in Gene Expression Data, *Samsung Medical Center, Seoul, Korea, June 20, 2013*

- HDLSS Outlier Detection, *Seoul National University, University of Seoul, Dukseong Women's University, Jeonbook National University, Kyemyung University, Korean Statistical Summer Conference, Korea, May-June, 2014*

- Covariance Adjustment for Batch Effects in Gene Expression Data, *Sungkyunkwan University, Seoul, Korea, June 20, 2013*

- Covariance Adjustment for Batch Effects in Gene Expression Data, *The 2nd Workshop on Biostatistics and Bioinformatics, Atlanta, GA, May, 11, 2013*

- Clustering of multiple curves based on phase variation, Poster, *Time Warpings and Phase Variation, Mathematical Biosciences Institute, Columbus, OH, Nov. 2012*

- A Resampling Approach for Interval-Valued Data Regression, *Joint Statistical Meetings, San Diego, CA, July, 2012*

- HDLSS Discrimination with Adaptive Data Piling, *International Workshop on the Perspectives on High-dimensional Data Analysis II, CRM, Universite de Montreal, May 30 - June 1st, 2012*

- A Multivariate Approach to Batch Effects in Microarray, *Mini-Conference on Biological Modeling, Georgia Health Science University, March, 2012 / ENAR Spring Meetings, Washington DC, April, 2012*

- Data Piling in HDLSS Data Analysis, *University of Connecticut, CT, February, 2011 / Purdue University, IN, April, 2011 / Yonsei University, Korea, June, 2011.*

- HDLSS Clustering with Maximal Data Piling, *Emory University, GA, April, 2009 / New Directions in Asymptotic Statistics, Athens, GA, May, 2009 / IMS Asia Pacific Rim Meetings, South Korea, June, 2009 / Joint Statistical Meetings, Washington DC, August, 2009 / Colorado State Univ, CO, October, 2009/ ENAR, Miami, FL, March, 2011.*

- Geometry-Based Kernel Selection for Discrimination, *Auburn University, AL, September, 2008.*

- Maximal Data Piling for Discrimination, *Hankuk University of Foreign Study, South Korea, May, 2008 /Joint Statistical Meetings, Denver, CO, August, 2008.*

- Bandwidth Selection for Kernel-Based Classification, *ICSA Applied Statistics Symposium, Raleigh, NC, June, 2007.*

- HDLSS Geometric Representation, *Texas A&M University, TX, April, 2007.*

- Data Piling and Geometric Representation for HDLSS, *ENAR, Tampa, FL, March, 2006.*

- HDLSS Data Analysis, *University of Missouri, Columbia, MO, January, 2006 / University of Georgia, Athens, GA, February, 2006 / University of Michigan, Ann Arbor, MI, February, 2006 / Cornell University, Ithaca, NY, February 2006 / The Ohio State University, Columbus, OH, February, 2006 / Clemson University, Clemson, SC, February, 2006.*

- Bandwidth Selection in Kernel Based Classification, Contributed, *Joint Statistical Meetings, Seattle, WA, August, 2006*

- Maximal Data Piling in Discrimination, Contributed, *Joint Annual Meeting of the Interface and the Classification Society of North America: Clustering and Classification, Washington University, St. Louis, MO, January, 2004*

PH. D. ADVISING AS A MAJOR PROFESSOR

Joseph Powell (Co-adivising with L. Seymour, 2022+)
Di Xiao (Co-advising with Y. Ke, 2022+)
Ziyang Ma (2021+)
Seung Woo Kwak (2021+)
Binglin Li (2021+)
Hee Cheol Chung (Co-advising with G. Datta, 2020, Post-Doc at Texas A&M)
JC Poythress (Co-advising with C. Park, 2020, TT Assistant Professor at U. New Hampshire)
Debin Qiu (2016, JP Morgan)
Sandra S. Safo (Co-advising with K. Dobbin, 2014, TT Assistant Professor at U. Minnesota)
Jungae Lee (2013, TT Assistant Professor at U. Alabama)

M. S. ADVISING AS A MAJOR PROFESSOR

Kemin Xu (2016)	Soyeon Jung (2015)	Xiao Cheng (2013)
Muliang Peng (2012)	Nathan Lekahal (2009)	

SERVICE IN PH.D. ADVISORY COMMITTEES

Cheng Chen (UGA Engineering)	Mengyun Yu	Jinyang Chen
Zhizhong Lin	Eunsil Seok	Hyunnam Ryu
Ben Washington	Mohamad Hasan	Jacob Martin
Adam Jeager	Yuan Zhuang	Minsoo Kim
Ashley Askew	Cong Feng	Taniya Mandal
Jennifer Le-Rademacher	Liang Shi (UGA Computer Science)	

PROFESSIONAL MEMBERSHIP

Member, American Statistical Association
Member, Korean International Statistical Society
Member, Korean-American Women in Science and Engineering

PROFESSIONAL ACTIVITIES

- Panelist, "Beyond Coding: Roadblocks in the Informatics Pipeline?, The 3rd Advancing Informatics in Government and Industry, Georgia Informatics Institutes for Research and Education, UGA, November, 2019

- Poster Session Judge, Georgia Statistics Day, October, 2018.

- Invited Session Organizer, Joint Statistical Meetings, Vancouver, August, 2018.

- Session Organizer, Korean Statistical Society Spring Conference, 2018.

- Program Chair for Korean International Statistical Society, 2017 – 2018.

- Associate Liaison to National Institute of Statistical Science for UGA Department of Statistics, 2014 – .

- Invited Session Organizer, Joint Statistical Meetings, Boston, MA, August, 2014.

- Conference reviewer, International Conference on Artificial Intelligence and Statistics (AISTATS), 2012

- Local organizing committee, Symposium on "New Directions in Asymptotic Statistics", Athens, GA, May, 2009.

ADMINISTRATIVE RESPONSIBILITIES

Faculty Review Committee, 2019
Chair, Theory Qualifying Exam Committee, 2018–2019
Poster Session Judge, Georgia Statistics Day, 2018
Chair, Faculty Hiring Committee (Statistical Machine Learning), 2018
Graduate Curriculum Committee, 2016–2018
Theory Exam Committee, 2016–2017
Ad-hoc Committee for Graduate Matter, 2014–2015
Personnel Committee (elected), 2013–2015
Data Analysis Qualifying Exam Committee, 2008–2011, 2012–2014, 2015–2016, 2017– 2018, 2019–2020
Faculty Hiring Committee, 2007, 2012, 2014, 2016, 2018, 2019, 2020
Undergraduate Program Committee, 2011–2012, 2015 – 2016, 2016 – 2017, 2018–2019

Graduate Program Committee: 2011–2013, 2014–2015
Colloquium Series Organizer: Spring 2008, Fall 2009, Spring 2013, Spring 2016
Research Development Committee, 2011–2012 (chair), 2017–2018 (member)

COURSE TEACHING

STAT 6310, Statistical Analysis I, Fall 2006.
STAT 6220, Statistical Methods II, Spring 2007.
STAT 6220, Statistical Methods II, Fall 2007.
STAT 8250, Multivariate Methods, Spring 2008.
STAT 8900, Statistical Learning & Data Mining, Fall 2008 (co-taught with Dr. Cheolwoo Park)
STAT 6220, Statistical Methods II, Spring 2009.
STAT 8250, Multivariate Methods, Spring 2009.
STAT 4520, Mathematical Statistics II, Spring 2010.
STAT 8250, Multivariate Methods, Spring 2010.
STAT 4520, Mathematical Statistics II, Spring 2011.
STAT 6220, Statistical Methods II, Spring 2011.
STAT 4510, Mathematical Statistics I, Fall 2011.
STAT 4520, Mathematical Statistics II, Spring 2012.
STAT 6220, Statistical Methods II, Spring 2012.
STAT 5010, Statistics Capstone I, Fall 2012.
STAT 6510, Mathematical Statistics I, Fall 2012.
STAT 5020, Statistics Capstone II, Spring 2013.
STAT 8930, Statistical Research & Practice, Spring 2013.
STAT 6510, Mathematical Statistics I, Fall 2013.
STAT 6800, Tools for Statistical Theory, Fall 2013.
STAT 6220, Introduction to Statistics II, Fall 2013.
STAT 6800, Tools for Statistical Theory, Fall 2014.
STAT 8920, Statistical Research and Practice I, Fall 2014
STAT 8210, Multivariate Statistics, Theory and Method, Fall 2014
STAT 6800, Tools for Statistical Theory, Fall 2015.
STAT 4520, Mathematical Statistics II, Spring 2016.
STAT 8260, Theory of Linear Models, Spring 2016.
STAT 8210, Multivariate Statistics, Theory and Method, Fall 2016.
STAT 4520, Mathematical Statistics II, Spring 2017.
STAT 8260, Theory of Linear Models, Spring 2017.
STAT 6800, Tools for Statistical Theory, Fall 2017.
STAT 4510, Mathematical Statistics I, Spring 2018.
STAT 8260, Theory of Linear Models, Spring 2018.
STAT 8210, Multivariate Statistics, Theory and Method, Fall 2018.
STAT 4510, Mathematical Statistics, Fall 2018.
STAT 8260 (8261), Theory of Linear Models, Spring 2019.
STAT 6800, Tools for Statistical Theory, Fall 2019.
STAT 8260 (8261), Theory of Linear Models, Spring 2020.