Kisung You

102G Crowley Hall, Department of ACMS, Notre Dame, IN 46556
kisungyou@outlook.com
`kisungyou.com`

EDUCATION

Ph.D., Statistics   August 2016 - August 2021
Department of Applied and Computational Mathematics and Statistics
University of Notre Dame, USA
- **Advisor:** Prof. Lizhen Lin, Prof. Ick Hoon Jin
- **Thesis:** *Topics in Geometric and Topological Data Analysis*

M.S., Mathematics   August 2015
Department of Computational Science and Engineering
Yonsei University, Seoul, South Korea

B.A., Business Administration   August 2013
B.S., Mathematics
Yonsei University, Seoul, South Korea

FELLOWSHIPS
& AWARDS
- Outstanding Graduate Student Teaching Award   April 2019
  University of Notre Dame
- Marilyn Jane Navari Fellowship   2017 - 2021
  University of Notre Dame
- Navari Fellowship   2016 - 2017
  University of Notre Dame
- Brain Korea 21 Scholarship   2013 - 2015
  National Research Foundation of Korea

PUBLICATIONS   (* for equal contributions; † for corresponding author)

[1] BS. Thomas, **K. You**, L. Lin, L-H. Lim, and S. Mukherjee. Learning Subspaces of Different Dimensions. *Journal of Computational and Graphical Statistics*. Accepted.

[2] **K. You*** and H-J. Park*. (2021). Re-visiting Riemannian geometry of symmetric positive definite matrices for the analysis of functional connectivity. *NeuroImage*. **225**:117464.

[3] H. Tak, **K. You**, S. K. Ghosh, B. Su, and J. Kelly. (2020). Data transforming augmentation for heteroscedastic models. *Journal of Computational and Graphical Statistics*. **29**(3): 659-667.

[4] J. H. Park, E-J. Kwak, **K. You**, Y-S. Jung, and H-D. Jung. (2019). Volume change pattern of decompression of mandibular odontogenic keratocyst. *Maxillofacial Plastic and Reconstructive Surgery*. **41**:2.

[5] Y.J. Cha, **K. You**, and W. Choi. (2016). Vision-based detection of loosened bolts using the Hough transforms and support vector machines. *Automation in Construction*. **71**(2): 181-188.

WORK IN PROGRESS	(* for equal contributions; † for corresponding author)

[i] **K. You**. Parameter Estimation and Model-Based Clustering with Spherical Normal Distribution on the Unit Hypersphere. *arXiv:2106.06375*.

[ii] B. Yu and **K. You**†. Shape-Preserving Dimensionality Reduction : An Algorithm and Measures of Topological Equivalence. Submitted to *Journal of Applied and Computational Topology*.

[iii] **K. You**. Rdimtools: An R package for Dimension Reduction and Intrinsic Dimension Estimation. Submitted to *Journal of Machine Learning Research*.

[iv] D. Bao, **K. You**, and L. Lin. Network Distance Based on Laplacian Flows on Graphs. *arXiv:1810.02906*.

PRESENTATIONS

(▶ Poster presentation; ▷ Contributed talk.)

▶ MNET 2.0: Big Graphical Mining of Multimodal Brain Networks. NetSci 2016. *Seoul, South Korea*, June 2016.

▶ Reusability of deep neural network for human functional networks. NetSci 2016. *Seoul, South Korea*, June 2016.

▶ Low-dimensional representation of human brain networks with modularity-based proximity of large-scale functional graphs. NetSci 2016. *Seoul, South Korea*, June 2016.

▷ Convergence of Empirical Intensity CDF and Texture Classification. KSIAM 2015 Spring Conference. *Suwon, South Korea*, May 2015

PROFESSIONAL EXPERIENCE

Researcher   October 2015 – July 2016
Yonsei Epilepsy Research Center, Seoul, South Korea

Research Associate   August 2015 – September 2015
LG Electronics Advanced Research Institute, Seoul, South Korea

Assistant Project Manager   July 2012 – June 2013
Korea International Cooperation Agency, Seoul, South Korea

SOFTWARE

(● in R on CRAN; more available on GitHub)

- ADMM   Algorithms using Alternating Direction Method of Multipliers.
- CovTools   Geometrical and Statistical Tools for Covariance Analysis.
- filling   Matrix Completion, Imputation, and Inpainting Methods.
- graphon   A collection of graphon estimation methods.
- maotai   Tools for Matrix Algebra, Optimization and Inference.
- mclustcomp   Measures for comparing partitions of sets.
- NetworkDistance   Distance Measures for Networks.
- Rdimtools   Dimension reduction and estimation methods.
- RiemBase   Functions and C++ Header Files for Computation on Manifolds.
- Riemann   Learning with Data on Riemannian Manifolds.
- Rlinsolve   Fast Iterative solvers for (sparse) linear system of equations.
- ROptSpace   Matrix Completion from a partially observed matrix.
- SBmedian   Scalable Bayes with Median of Subset Posteriors.
- SHT   Statistical Hypothesis Testing Toolbox.
- T4cluster   Tools for Cluster Analysis.

- T4transport   Tools for Computational Optimal Transport.
- tvR   Total Variation Regularization for Signals and Images.
- Zseq   Integer Sequence Generator.

TEACHING
EXPERIENCE

Instructor   Fall 2017 – Spring 2020
University of Notre Dame, USA
- Statistical Methods and Data Analysis Lab (Accumlative : 4.78±0.31/5)

Teaching Assistant   Fall 2016 – Fall 2020
University of Notre Dame, USA
- Mathematical Statistics (Fall 2020)
- Systems and Technology: R (Summer 2017)
- Probability and Statistics for Data Science (Summer 2017)
- Statistics for the Life Sciences (Spring 2017)
- Statistics for Business and Economics I (Fall 2016)

SKILLS

- *Language*   Korean, English.
- *Software*   R, MATLAB, C/C++, Python.

REFERENCES

Dr. Lizhen Lin
Associate Professor
Department of ACMS
University of Notre Dame
Notre Dame, IN 46445, USA
☎ +1 574 631 0301
✉ lizhen.lin@nd.edu

Dr. Ick Hoon Jin
Assistant Professor
Department of Applied Statistics
Yonsei University
Seoul 03722, South Korea
☎ +82 2 2123 2541
✉ ijin@yonsei.ac.kr

Dr. Hyungsuk Tak
Assistant Professor
Department of Statistics
Pennsylvania State University
University Park, PA 16802, USA
☎ +1 814 865 3791
✉ tak@psu.edu

Dr. Hae-Jeong Park
Professor
Department of Radiology
Yonsei University
Seoul 03722, South Korea
☎ +60 5 368 7038
✉ parkhj@yonsei.ac.kr.